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The Impact of Choice on Students with Disabilities

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The Impact of Choice on Students with Disabilities

by

Justin T. Kelly

A Starred Paper

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Chapter 1: Introduction

Since the passing of Public Law 94-142 (IDEA) in 1975, general education teachers have been asked to help increase achievement of students with disabilities without much training in the area of special education. While many students with disabilities receive some special education services, there has been a trend in the education field to reduce direct service minutes and use full inclusion for more and more students with higher and higher needs. This has caused special education teachers and general education teachers to have to find instructional strategies that work in a general education setting to appropriately serve these, and all, students.

For general education teachers, one of the hardest things to do is to personalize all student learning to ensure the difficulty and rigor is at the right level for each student. If teachers are unable to accomplish this, students with disabilities are at risk for being overwhelmed and disengaged. To combat this effect, teachers have experimented with different pedagogy.

One of the pedagogical theories used to help differentiate and personalize instruction for all students has been academic choice. This strategy has been known to help students of all ages and all abilities; however, it is occasionally not used because of the time required to prepare materials. The concept of choice in schools is not new. One of the leading theorist is Dr. William Glasser. Glasser constructed the idea of “Choice Theory” (originally title *Control Theory*) in which he describes the idea that we can only control one person’s thoughts and behaviors—our own (Glasser, 1998). He continued his pursuit of this idea and its impact on education through titles such as *Choice Theory in the Classroom* (Glasser & Glasser, 1988) and *Every Student Can Succeed: Finally a Book That Explains How to Reach and Teach Every*

Student in Your School (Glasser, 2006). In this Starred Paper, I investigated the impact of academic choice in the classroom on student achievement, engagement, and behavior of students with disabilities.

Research Question

The following question guided this literature review: What effect does academic choice have on student engagement, achievement, and the behavior of students with disabilities?

Chapter 2 includes a total of 10 studies that investigated the impact of academic choice on students with disabilities. The studies focused on school aged students spanning all school ages and settings. The studies also focused students in the general education/inclusion setting. I studied the impact of choice in the classroom and provided recommendations to general education and special education teachers on how to implement choice within a variety of settings.

To achieve my search for literature and studies addressing the above questions, I used the Academic Search Premier and JSTOR databases. The search terms and combination of descriptors used included *choice, academic choice, disabilities, general education, engagement, achievement, behavior, emotional and behavior disorder, learning disability, and autism spectrum disorder*. The number of resources found were dependent on the combination of search terms; however, studies selected were completed and published between 1995 and 2016.

Historical/Theoretical Background

The concept of Choice Theory and academic choice is based on the behaviorist school of thought. The behaviorist believes in the idea that the environment impacts the student's behavior. Dr. Glasser's Choice Theory emphasizes the impact of one's own choices on the

consequences on behaviors. It is the combination of these ideas that have guided the research presented here. While I understand that all teachers are creating the environment that students come to learn in, it is an area in which students can have some autonomy in as well.

The growing emphasis on inclusion for students with disabilities, combined with the focus of instruction on 21st century skills, is creating an environment that all students, including those with disabilities, must be able to think critically and make choices based on their own set of strengths. While I believe in the importance of teaching students how to make appropriate decisions, I have not included the research on methods to teach this skill. However, within the background of the studies, most authors make statements similar to Shevin and Klein (as cited in Cosden, Gannon, & Haring, 1995). In this study they stated, “Unless these children are taught to identify personal preferences, it is impossible to know whether compliance reflects contentment or resignation; similarly, off-task behaviors may be interpreted as undesirable events, or they may reflect the student’s best attempt to exercise control over his or her environment” (p. 12).

Importance/Rationale

Prior to the passage of the Individuals with Disabilities Education Act (IDEA) and the Americans with Disabilities Act, general education classrooms in the United States seldom included students with any disabilities. The inclusion of these students into the general education setting, due to the rights provided to them through the least restrictive environment (LRE) component of these laws, has put additional pressure on both the special education and general education teachers. It is a continual struggle to ensure that students with disabilities are appropriately served with an individualized education within the general education setting. This has put stress onto teachers already overwhelmed by workload issues.

To serve students with disabilities, teachers must find strategies to make the instructional setting differentiated and individualized. Stenhoff, Davey, and Lignugaris/Kraft (2008) proclaimed “it is critical that educators pursue research based interventions designed to improve academic performance” (p. 203). One of these strategies is through academic choice. Cosden et al. (1995) stated, “If carefully integrated into classroom management systems, this approach (academic choice) can reduce the time taken by teachers to regulate students’ behaviors” (p. 26). This strategy has been successful in engaging students in education for many years.

Providing students choices within the classroom allows the student more autonomy over their learning and provides a feeling of control over their outcomes. Killu, Clare, and Im (1999) stated “teachers may be able to improve performance or increase productivity simply by allowing students to choose their activities” (p. 240). Without implementing choices, students with disabilities will be forced to accommodate to a one-size fits all education, which goes against all principles and purpose laid out by legislation to protect these individuals.

My personal connection to this topic is in the fact that I am teaching in a district in which there is a large institutional and parental push for full inclusion of all students. Since I am a general education teacher with a special education license, many of the students needing special education services are placed in my classroom. In the last 3 years, I have instructed students with numerous disabilities. One of my most challenging was teaching a nonverbal student, with developmental and cognitive disabilities, the skills required in the middle school geography standards. While this was an extra challenging situation, it spurred my interest on how to best serve all students with disabilities in the general education setting.

Definition of Terms

21st-century skills: generally used to refer to certain core competencies such as collaboration, digital literacy, critical thinking, and problem-solving that advocates believe schools need to teach to help students thrive in today's world (Rich, 2016).

Americans with Disabilities Act (ADA): “The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, state, and local government services, public accommodations, commercial facilities, and transportation” (The Americans with Disabilities Act of 1990 and Revised ADA Regulations Implementing Title II and Title III, n.d.).

Choice theory: a concept constructed by William Glasser. “Choice theory states that: all we do is behave, that almost all behavior is chosen, and that we are driven by our genes to satisfy five basic needs: survival, love and belonging, power, freedom and fun” (Davenport, n.d.).

Control theory: the concept constructed by William Glasser prior to changing the theory's title to “Choice Theory.”

Inclusion: the concept of “including” all students in the general education setting despite any disability. This concept is sometimes referred to as “mainstreaming.”

Individuals with Disabilities Education Act (IDEA): “The Individuals with Disabilities Education Act (IDEA) is a law ensuring services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education, and related services to more than 6.5 million eligible infants, toddlers, children, and youth with disabilities” (IDEA—Building The Legacy of IDEA 2004, n.d.).

Least Restrictive Environment (LRE): a key component to the IDEA law which states:

“To the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily” (IDEA—Building The Legacy of IDEA 2004, n.d.).

Self-advocacy: an individual’s ability to effectively communicate, convey, negotiate or assert his or her own interests, desires, needs, and rights.

Chapter 2: Review of the Literature

The purpose of this literature review was to examine the effect of academic choice on student engagement, achievement, and the behavior of students with disabilities. The reviews are organized by the areas of focus in the research question: “What effect does academic choice have on student engagement, achievement, and the behavior of students with disabilities?”

Summary of Chapter 2 Research to be Reviewed

I located 10 studies that examined the impact of choice on school aged children. The summaries of these studies are listed below in Table 1 in chronological order.

Table 1

Summary of Chapter 2 Findings

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Cosden, Gannon, & Haring (1995)	Quantitative	Three 11-13-year-old males diagnosed with severe behavior problems.	An alternating treatments design was used. Student-controlled conditions were implemented where students were able to select rewards and tasks from lists generated by the teacher. During teacher controlled conditions, the teacher selected rewards and tasks. The experiment was divided into two phases. Phase 1 focused on task completion and Phase 2 focused on task accuracy.	<ul style="list-style-type: none"> Task performance improved when the student had control over task assignments and choice of reinforcement. Student control of task or reinforcement resulted in higher performance, but the best results were when the two were combined.

Table 1 (continued)

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Umbreit & Blair (1996)	Quantitative	11-year-old boy with moderate to severe disabilities, seizures, and behavior disorders.	The study was conducted in two phases. The first phase was about assessing the ongoing school activities and establishing preferences for the student and a creation of a hypothesis. Phase 2 focused on the effectiveness of the intervention of allowing the student to be engaged in preferred activities, given choice, and receiving frequent attention while engaged in appropriate behavior.	<ul style="list-style-type: none"> Interventions implemented in phase two virtually eliminated all problem behaviors.
Powell & Nelson (1997)	Quantitative	One second-grade student with ADHD was used in the study.	An ABAB design was used to give the subject choices in assignment. The independent variables were the option of a choice in assignments or no choice in assignments. The dependent variable was the presence of undesirable behaviors during work sessions.	<ul style="list-style-type: none"> The subject showed a dramatic reduction of undesirable behaviors during the choice condition of the study in comparison to the no-choice condition.
Killu, Clare, & Im (1999)	Quantitative	Three middle school boys. One with DCD, one with LD, and one with EBD.	Subjects were tested for preferences for spelling tasks using six experimental conditions: -choice of preferred tasks -choice of non-preferred tasks -no choice of preferred tasks -no choice of non-preferred tasks -no choice of preferred tasks (yoked-controlled) -no choice of non-preferred tasks (yoked-controlled)	<ul style="list-style-type: none"> All three participants had higher levels of task engagement when working on preferred tasks, regardless of choice or no choice format.

Table 1 (continued)

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Jolivette (2001)	Quantitative	Three elementary-aged students identified as E/BD in a self-contained setting	Multiple baseline, across students, single subject design to compare choice versus no choice conditions on multiple academic and social behaviors.	<ul style="list-style-type: none"> Results suggest that opportunities to make choices during academic situations positively affected the academic and social behaviors of two of the three students.
Kern, Mantegna, Vorndran, Bailin, & Hilt (2001)	Quantitative	Three individuals with different ages (3, 11, and 15), diagnoses, and problem behaviors	The study allowed students to choose the sequence of the completion of tasks.	<ul style="list-style-type: none"> The intervention resulted in improved behavior for each participant.
Romaniuk, Miltenberger, Conyers, Jenner, Jurgens, & Ringenberg (2002)	Quantitative	Seven students with various diagnoses but all including problem behaviors	The study first examined the function of each student's problem behavior. Effectiveness of an intervention that allowed the students chose their own instruction tasks was evaluated using a reversal design.	<ul style="list-style-type: none"> Students who displayed escape problem behaviors showed reduction in such behaviors when allowed a choice. Students who displayed attention seeking problem behaviors did not show any effects as a result of the choice intervention.

Table 1 (continued)

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Stenhoff, Davey, & Lignugaris/Kraft (2008)	Quantitative	One ninth-grade student with a learning disability	The study used an ABAB design with an independent variable of choice between two demand levels of assignment. During one phase the student was allowed a choice between an assignment the rest of the class was doing or an alternative assignment. The other phase of the assignment required the student to complete the class assigned assignment.	<ul style="list-style-type: none"> The study found that the percent of problems completed and the number correct were the highest when the participant was given a choice between two assignments instead of told which one to complete.
Skerbetz & Kostewicz (2013)	Quantitative	Five eighth-grade students with, or at risk for, emotional disturbance in an inclusive setting. Two boys and three girls.	The study used a single subject reversal design. Experimenters used choice versus no choice in vocabulary based assignments as the independent variables. The dependent variables were task engagement and task accuracy.	<ul style="list-style-type: none"> Results indicated a functional relation between the presentation of choice and improvements to student task engagement and academic performance.
Lane, Royer, Messenger, Common, Ennis, & Swogger	Quantitative	One boy diagnosed with ASD and one girl in an inclusive first-grade classroom were used in the study.	The intervention used a single case design method and an ABAB alternating treatment withdrawal design over eight weeks. The independent variables were no intervention, across-task choices, and within-task choices.	<ul style="list-style-type: none"> In general, the study proved to have improvements on academic engagement and only partially proved improvements in disruptive behavior when choice conditions were introduced.

Engagement

Killu, Clare, and Im (1999) conducted a study to examine the relationship between choice and no choice of preferred and non-preferred instructional tasks on the academic behavior of students with disabilities. The subjects in the study were three boys aged 12 (diagnosed LD), 12 (LD), and 13 (DCD) enrolled in a local public middle school with an enrollment of 250 students. The students were considered easily distracted and frequently off task by their teacher. The study took place in the self-contained classroom containing nine students.

The study was conducted using the student's list of weekly spelling words. The researchers used 20 of the commonly used spelling tasks in the classroom for their selected tasks. Each week students had between 10 and 12 spelling words. To determine preference of tasks, the researchers presented each subject with a pair of tasks selected from the 20 used in class and asked which one the student preferred. This was repeated until all possible combinations were presented to each student. Responses were recorded and were used to determine the five most frequently chosen, and the five least frequently chosen, as the preferred and non-preferred tasks for the investigation.

Researchers observed and recorded task engagement during 30-minute class periods using a 10-second partial interval recording system. Task engagement was defined as working on task options in accordance with instruction, looking at material during assignments, looking at teacher during instruction, manipulating materials related to assignment completion, and asking the teacher questions directly related to the assignment.

The six experimental conditions were:

1. Choice of preferred tasks
2. Choice of non-preferred tasks
3. No choice of preferred tasks
4. No choice of non-preferred tasks
5. No choice of preferred task (yoked controlled)
6. No choice of non-preferred task (yoked controlled)

During the choice conditions, five notecards, each listing a different task, were presented to the student to choose. During the no choice yoked controlled condition, the same tasks were provided in the same order the subjects chose during the previous choice conditions. The results of the study are listed in the table below by the mean percentage of ten-second intervals with on-task engagement.

Table 2

Mean Percentage of On-Task Engagement

	STUDENT A	STUDENT B	STUDENT C
Choice of preferred tasks	92.6%	88.8%	84.1%
Choice of non-preferred tasks	86.3%	61.8%	70%
No choice of preferred tasks	94%	87.2%	94%
No choice of non-preferred tasks	77.8%	68.3%	75%
No choice of preferred tasks (yoked)	88.6%	85.2%	92%
No choice of non-preferred tasks (yoked)	72%	43%	64.7%

The results from this study demonstrate that the variable of preferred tasks was a greater factor than choice in improving task engagement. In fact, some of the results showed an increase in engagement from the choice to no choice of preferred tasks. The results of the observations

were not replicated in all of the subjects; therefore, there can be no conclusive evidence of the effect of choice. The author suggests that one possible reason choice can be effective is because it allows subjects more opportunity to choose a preferred activity. In addition to these inconclusive results, the author also states that task performance was not factored into the study.

Lane et al. (2015) conducted a study focused around the effectiveness of across-task and within-task choices implemented in an inclusive classroom. The study sought to examine the implementation and effects of instructional choice at the elementary level. The authors defined across-tasks choices as choosing order of tasks or choosing from a menu of tasks. They defined within-task choices as choosing materials or choice of environmental conditions to complete the task.

The participants of the study were two first-grade students (Neal and Tina) who attended a public elementary school in the Midwest of the United States. They were both selected because they fit the criteria of having a moderate to high risk index according to the Student Risk Screening Scale (SRSS), report card grades in writing, and independent work skills. Neal received special education services under the Autism label. Tina received level two and three interventions in the area of reading according to the Response to Intervention (RTI) program at the school. The setting for the study took place in the students' inclusive classroom of 25 students.

The independent variables were no intervention, across-task choices, and within-task choices. During the across-task choice intervention condition, students selected the sequence in which they completed tasks during the daily writing block. On days for the within-task choice condition, students were given a choice of materials (e.g., writing instrument) or environmental

factors (location in the room) to complete the tasks assigned. The dependent variables observed and documented during these conditions were Academic Engagement Time (AET) and disruption rates. Both were collected using momentary time sampling procedures that were collected every 2 minutes during the writing portion of the class period.

The intervention used a single case design method and an ABAB alternating treatment withdrawal design over 8 weeks. “Nonparametric effect sizes for comparison of A-B contrast to measure the direct impact of instructional choice were calculated using Tau-U omnibus effect sizes...Social validity and treatment integrity data were analyzed using descriptive statistics” (Lane et al., 2015, p. 488).

For one of the subjects, Neal, despite some improvement in academic engaged time, the study found that the contrast of variables was not significant for either the within-task or across-task choice conditions. Also, a functional relation was not established between the intervention choice conditions and his problem behavior. The other subject, Tina, also showed improved academic engaged time and the researchers found that effect size was significant for both within-task and across-task choice conditions. Also, a functional relation between choice conditions and disruptive behavior was indicated.

In general, the study found improvements on academic engagement and only partially demonstrated improvements in disruptive behavior when choice conditions were introduced. The limitations of the study were only two participants, only one setting, type of choices were not chosen with student input in regards to preference, and loss of 2 days of intervention because of scheduling issues. The results combined with the limitations led the authors to recommend further research before generalizations of the study can be made.

Achievement

Cosden et al., (1995) “examined whether students with behavior disorders could benefit academically from selection of rewards and selection of academic tasks from lists of rewards and tasks generated by their teacher” (p. 13). The participants of the study were three male students enrolled in a residential facility for students with severe emotional disturbances. The students were aged 11, 12, and 13 and had an IQs of 74, 87, and 91, respectively. The study was conducted in the students’ classroom.

To implement the experiment, researchers displayed 10 pictures of preferred reinforcements next to a locked cabinet of reward games. In addition to these 10 pictures, ten task cards, each containing four tasks, were also created to describe assignments that could be completed during the work period. During the baseline period, teachers asked what the students wanted to earn for the day and if they completed their task card, they earned the desired reinforcement. The design of the study was an alternating treatment design to determine the effectiveness of the interventions. It was split into two phases. Phase 1 lasted 4 weeks and consisted of the teacher-control of task assignment and reinforcement, student-control of reinforcer, and student control of task card, and reinforcer conditions. During this phase, students were given reinforcements for completion of assignment and did not consider the accuracy. Phase 2 lasted 5 weeks and consisted of the teacher-control of task assignment and reinforcer, student-control of reinforcer, student-control of task assignment, and student control of task assignment conditions. During this phase, an 85% accuracy rate was required to attain

the reinforcement. The conditions were determined at the beginning of the week and were the same for each student.

The data for the study were presented for each of the three subjects on: a) the effects of treatment condition on accuracy of task performance; b) task selection and performance as a function of student-control or teacher-control; c) reinforcement selection and attainment as a function of student-control or teacher-control; and d) cumulative reinforcements received under each condition.

The results of the effects of the treatment condition in the area of task accuracy were shown to be positive. During both phases of the treatment, the student-control over reinforcement and task cards condition provided the most superior accuracies. In regard to the task selection and accuracy condition, all students had higher performances when they selected the activity than under teacher selection. Under the third condition (reinforcement selection and accuracy), results indicated that student-control over reinforcements resulted in earning more rewards than even when the teacher selected the same reinforcements.

Results indicated that while the best results were achieved when the students were given the choice of both the task and reinforcement, there is also an increase in performance when the students were given a choice of either one. There were two limitations identified, that the study did not teach the student how to make effective choices, and when choice was taken away from the students the effectiveness of teacher-controlled conditions became less effective and even produced some hostility. In general, the study found that the “more program components over which students had control, the better their performance” (Cosden et al., 1995, p. 25).

Stenhoff et al. (2008) conducted a study to extend the use of choice making as an antecedent based academic intervention to high school aged students with learning disabilities.

The subject was a 15-year-old male student in the ninth grade identified as having a learning disability. He was chosen for the study as a result of his refusal to complete assignments in his biology course. The setting was in his Resource Biology course that contained 15 individuals and was instructed by the special education teacher. The experiment took place over 16 school days during the 40-minute class period.

The dependent variables of the study were the percentage of each assignment completed and the percentage of items correct on each assignment. The subject's assignments were collected at the end of the period and recorded for the study. The independent variable was a choice of 2 daily assignments during the choice condition of the experiment. One possible choice of daily assignment was the assignment assigned to the rest of the class that contained fill in the blank, matching, drawing and/or labeling diagrams, short answer, multiple choice, and/or true/false questions. The other option was an assignment labeled "option 2" and contained questions on the right side of the paper and the answers on the left side. If there were page numbers used to look up answers, they were also given to the student.

The study was conducted with an ABAB design. The no choice condition, in which the teacher would teach the topic and the subject was asked to complete the same assignment as the rest of the class, was considered the baseline. During the choice condition, the teacher would teach the lesson and distribute the assignment for the day. The student subject was given the class assignment and an alternate assignment with the directions to "choose one." The teacher would leave the student to choose and return in 15 seconds to collect the non-chosen assignment.

The completion rates during the first baseline (no choice) condition were of a mean of 2%. During the first choice, or experimental condition, the student chose to complete the regular class assignment every time with a mean completion rate of 89% and an accuracy mean of 75%. During the second baseline (no choice) condition, completion means dropped to 53% and then to 0%. The accuracy mean dropped to 50% and then to 0%. When the choice condition was reinstated, the subject again chose to complete the class assignment every time with a mean completion rate of 99% and a mean accuracy rate of 81%.

The authors found that “results suggest that providing choice of assignment without sacrificing instructional content may be sufficient to increase student achievement” (Stenhoff et al., 2008, p. 207). During choice conditions, the subject consistently chose the class assignment that required higher demand, but still had higher rates of completion and accuracy. However, the fact that this study included only one subject, limits the generalizability of the experiment. Other limitations included the lack of documentation of teacher to student interaction and the impact of peer interaction and perception.

Skarbetz and Kostewicz (2013) completed a study to determine what effect providing a choice of assignments during independent activities would have on the task engagement and academic performance of students with, or at risk for, emotional disturbances served in an inclusive setting. The subjects were five eighth grade African American students in a large, urban city public charter school. Two of the subjects were male and three were female. All students were identified as having emotional disturbances or being in an at-risk status for emotional disturbances. The subjects all had an active behavior plan, were identified as needing assistance in task engagement and academic performance, and received language arts instruction

in an inclusive setting. The setting was in a general education language arts class during the vocabulary component of the course.

The study used units and daily activities based on The Word Up Project and Level Blue (Flocabulary). Researchers divided lists of 15 words into four, three word lists to be used for daily assignments (Monday-Thursday). The remaining three words were not used. Dependent variables included task engagement, task accuracy, and time to complete task. The independent variable was if the assignments were chosen by the teacher and assigned, or if the student got a choice in which order to complete the activities required for Monday through Thursday.

The design of the intervention was a single-subject reversal experimental design (ABAB). Each day (Monday-Thursday), the teacher provided instruction then passed out a daily assignment. The students had seven minutes to complete the assignment and then work was collected.

The results for student engagement indicate that two students demonstrated clear increases in engagement, two showed moderate increase, and one remained unaffected by the choice condition. The impact of the choice condition on scores and completion rate show that four of the students displayed decreased time to complete tasks and also showed greater accuracy. However, one student showed to be unaffected by the choice condition in regard to scores and completion percentage.

Beyond the experimental data, students were also given a survey using a 5-point Likert scale. All five students agreed or strongly agreed to the statements “I liked having a choice of assignments” and “I would like to have a choice of assignment to complete in language arts.”

Four of the five students also indicated that they thought that options for choice helped them complete their assignments.

The study indicates an improvement in achievement from most students when provided a choice of the order of which to complete assignments. The authors recommended that the choice of sequencing of tasks can be an easy implementation into any classroom to help students be more successful. However, the authors acknowledge the study's limitations of a lack of stable baseline data, seating of subjects involved in the study was not best practice, different assignments may have had different requirements, and that students did not receive feedback on their daily work.

Behavior

Umbreit and Blair (1996) conducted a study to determine the effect of preference, choice, and attention with a student with developmental delays. The subject was an 11-year-old boy (Reggie) with mild to moderate pervasive developmental disabilities, seizures, and behavior disorders (including loud, high pitched noises; hitting staff, peers, and objects; throwing objects; laying down on the floor; running away; biting others; and spitting). The setting was in an inclusive program setting; however, a special education teacher and/or a para-educator was with him at all times. The student had limited language abilities (e.g., hi, bye, no) but used gestures and 10 to 15 simple signs to communicate.

The hypothesis of the study was that Reggie would behave better when he was engaged, was given choice, and received attention frequently while engaged in appropriate behavior. The study focused on four target behaviors of inappropriate vocalizations, hitting, throwing, and laying down on the floor. Appropriate behaviors were identified as being on task by complying

with staff instructions and having his eyes on the materials or teacher as requested or engaging in verbal or nonverbal social behavior directed to another person that was positive or neutral in nature.

The study was broken into two phases. Phase 1 began with an attempt to identify the cause of Reggie's inappropriate behaviors. Ten individuals who knew Reggie well were asked 22 questions with the focus of identifying the conditions under which a target behavior is very likely and very unlikely to occur. Also, observations for antecedent-behavior-consequence data were collected during 12 observations. These two things together indicated that Reggie engaged in problem behavior in all of his environments when he was asked to engage in activities that he viewed as non-preferred and when he did not receive much attention from staff members.

The hypotheses regarding preference and choice were tested with four conditions: preferred activities with three choices, non-preferred activities with three choices, preferred activity without choice, and non-preferred activity without choice. The hypothesis of improved behavior with frequent attention was tested while using the preferred activities with choice condition. The two variables were that the teacher would provide positive social attention at least once every 30 seconds and that the teacher would provide positive social attention once every 2-3 minutes. The more frequent attention condition was tested three times and the less frequent condition was tested only two times because of continuous problem behavior during this condition. Data in all conditions were collected using a 15-second partial interval recording procedure and recorded problem and appropriate behaviors.

Under these conditions, Reggie engaged in appropriate behavior continuously when given the choice of preferred activities. During teacher selection of preferred activities, he

behaved appropriately a majority of the time, but not as much as when provided choice. When the conditions were set to choice of non-preferred tasks, he behaved more inappropriately. However, when provided with no choice of non-preferred tasks, Reggie engaged in problem behaviors continuously. These results supported all three hypotheses and proved that he behaved better when given a choice even if was a non-preferred task.

During Phase 2 of the study, the researchers examined the effects of an intervention based on the previous hypothesis testing. The elements of the intervention included the following:

- When possible, skills taught with preferred activity Reggie chose with frequent attention.
- When non-preferred activities were used, teachers gave choice with frequent attention.
- A three-by-three communication book including pictures, words, and signs of things that Reggie encountered through the day was created.
- Staff was instructed to respond to problem behavior immediately and teach an appropriate response that could have been used instead.

The testing of Phase 2 was done over a 20-week period and divided into two halves of Reggie's day. The baseline information was collected using previous intervention techniques including time out, prompting, and redirection. During both the experimental intervention and baseline intervention, a Treatment Acceptability Rating Form- Revised (TARF-R) was used to measure the reasonableness, effectiveness, side effects, disruptiveness/time required, cost, and

willingness of the intervention was used. All data were collected using a 15-second partial interval recording procedure and recorded problem and appropriate behaviors.

During the baseline observations, Reggie displayed problem behaviors 55-100% of the time in the first half of the day and 78-97% in the second half of the day. After intervention during the second half of the day, problem behaviors were cut to 0-8% of the intervals and appropriate behavior increased to 75-100% of intervals. When the intervention was introduced in an all day, every day setting problem behaviors were virtually eliminated.

The authors concluded that preference, choice, and attention created a successful intervention program. Staff also reported the acceptability of the experimental intervention to be higher than the baseline intervention techniques. The unique aspect about this study was that it took place in an inclusion setting. However, one limitation was that it only included one individual; therefore, limiting its generalizability.

Powell and Nelson (1997) conducted a study to investigate the effect of choosing academic assignments on the behavior of a student with attention deficit hyperactivity disorder (ADHD). The subject was a second-grade boy (Evan) diagnosed with ADHD by a physician, but did not receive special education services. Evan had poor peer relationships and his teacher claimed that a majority of his behaviors were undesirable. The study was conducted in Evan's language arts class which contained 23 students.

The dependent variable was identified as Evan's undesirable behaviors including noncompliance, being away from his desk, disturbing others, staring off, and not doing work. Data were recorded using a 10-second momentary time-sampling recording method. The study was completed with an ABAB design. During the no choice condition, Evan was directed to

work on the same assignment as the rest of the class. During the choice conditions, the teacher offered three different assignments with identical length and difficulty for him to choose one to complete.

The results showed that Evan's level of undesirable behaviors decreased during choice conditions. Also, the study indicated that the levels of direct teacher interaction were infrequent during choice conditions. The limitations of the study were that it did not measure student achievement and that it consisted of only one student.

Jolivette, Wehby, Canale, and Massey (2001) conducted a study to apply previous studies of choice-making to students with Emotional Behavioral Disorders (E/BD). They focused on task related and social behavior of these students when presented with choice conditions in a math setting. They also wanted to investigate the feasibility of teachers using choice conditions during regular academic expectations.

Three male students diagnosed with having emotional disturbance were the subjects of the study. All of the selected students were between the ages of 6 and 10 years of age, had a primary placement in a self-contained special education classroom, had a history of social and task-related problem behaviors during mathematics, and functioned one to two years below grade level in mathematics. The setting of the study was in a self-contained special education classroom for students with E/BD.

The study used a multiple-baseline, across students design with a withdrawal component to help determine the effect of the choice condition on student behaviors. During the choice condition, students were given the choice of sequence order to complete three assignments. During the no choice condition, the teacher told the student the order that they must complete the

assignments. The materials used were from the ongoing mathematics curriculum and had equal length (20 problems) and estimated difficulty. The three assignments each day were all of the same concept, but contained different formats. The dependent variables of student task engagement, disruption, and off-task behaviors were recorded using a ten-second whole interval recording system. The number of attempted math problems and correctly solve problems were also recorded. During the study the teacher filled out a Treatment Acceptability Rating Form-Revised (TARF-R) to determine how acceptable and feasible the interventions were in the ongoing classroom.

The results of the study indicate that providing choice conditions increased the appropriate behavior levels in two of the three students. Two of the three students had the highest engagement levels when the choice condition was reintroduced. Also, all of the students had the lowest off-task level when the choice condition was introduced a second time. When looking at the number of responses and accuracy, all of the students demonstrated increases in number of completed problems when the choice condition was introduced a second time. In general, the authors concluded that allowing choice-making opportunities appeared to have been more effective for two of the subjects than the third (Jolivet et al., 2001).

The study concluded by stating that the data suggests that choice conditions are a feasible intervention in a classroom. The involved teacher claimed that she was willing to implement the conditions and thought they were effective. The authors stated that generalizations regarding the results of the study should be made with caution as a result of some limitations. Limitations included that the conditions were only implemented in one class, the results were greater during the reintroduction of the condition, and the equivalency of the math worksheets were not

validated. Despite these things, the authors concluded that providing choice-making opportunities to students with E/BD may give them alternative behaviors to obtain reinforcement and may give them access to preferred tasks and ability to engage in appropriate tasks (Jolivet et al., 2001).

Kern et al. (2001) conducted a study to examine the reinforcement value of choice, independent of selection of preferred stimulus. The focus of the study was the amount of problem behavior and engagement when students were given a choice in the order of task completion.

The study consisted of three individuals with a variety of diagnoses, but all had a history of problem behaviors. The first participant was Danny, a 7-year-old boy from a general education classroom with grade level academic performance. He was diagnosed with ADHD and had a history of high rates of problem behaviors, including: tantrums, aggression, disruption, and noncompliance. An analysis of these behaviors determined these served as an escape function during school hours. These behaviors resulted in his admission to a short-term inpatient hospital facility where this study took place.

The second participant, Kelly, was a 15-year-old female with moderate developmental delay and tuberous sclerosis. She had limited language for communication and used Polaroid pictures as a primary mode of communication. The study was conducted at her primary school which was a private school for students with emotional and behavioral problems.

The third participant, Shannon, was an 11-year-old female with mild developmental delay and ADHD. She attended a public fifth-grade classroom, but academically functioned at a

first-grade level. Her behaviors of aggression, noncompliance, and disruptive behavior resulted in her being admitted to the inpatient hospital where this study was conducted.

The study used a reversal design to evaluate the interventions put in place for each student. The dependent variables for each student were as follows: for Danny, a frequency count of problem behaviors and the amount of engagement using a coded duration method, for Kelly, observers used a ten-second whole interval recording system to measure engagement, and for Shannon observers used a ten second partial interval system to record problem behaviors. In each situation, students were required to complete three tasks. The independent variable used was the choice of sequence in which to complete these tasks. All tasks chosen for the study were identified as causing noncompliance in the past. For Danny, these included academic tasks. For Kelly and Shannon, these tasks were different daily living activities.

The results concluded by the authors were that for Danny, the intervention of choice resulted in near zero problem behaviors and high engagement in academic tasks. For Kelly, the choice condition resulted in higher engagement. For Shannon, the option of choosing the order of sequence of task resulted in near zero problem behaviors.

The authors of this study are clear to point out that all subjects were required to complete the assigned tasks during the intervention. By focusing on the choice of sequence of task, rather than choice of task, the subjects were not able to get out of non-preferred activities.

The study's discussion offers some limitations involved in the study. One limitation was that noncompliance was not factored into the results. Rather, it was ignored and directions to the task were repeated until the task was completed. Another limitation was that the setting of an inpatient hospital for two of the individuals, Danny and Shannon, were atypical settings for

school aged children. Lastly, the study consisted only three individuals and results are difficult to generalize.

Romaniuk et al. (2002) conducted a study to assess whether the function of an individual's problem behavior was related to the effectiveness of an intervention of choice between tasks. Their hypothesis was that problem behaviors maintained by escape from tasks demands would show greater reductions when individuals were provided with choice among tasks than would problem behaviors maintained by attention.

The participants in the study ranged from 5-10 years of age. The disabilities of the participants also differed between each individual, but included diagnoses of moderate developmental delay, Autism, Cerebral Palsy, Down Syndrome, ADHD, mood disorders, and seizure disorders. Four of the individuals were female and three were male.

The researchers designed the study to be done within a separate classroom at the participants' school building in a one-to-one setting. The study had two phases. During the first phase students were observed and evaluated using an analogue functional analysis of behavior.

During this phase targeted behaviors were analyzed to determine if they were a function of an attempt to escape assigned tasks or to gain attention. It was determined that three of the individuals had problem behaviors maintained by escape and three maintained by attention.

There was one student that was identified as having behaviors maintained by both attention and escape.

During the second phase of the study, researchers implemented an intervention of choice of task selection and conducted their experiment using an ABAB design. Students were offered four to six options of academic tasks to complete. Researchers documented the percentage of

time the students engaged in problem behaviors. However, because of the short duration of one of the individual's behaviors, one was documented based on the frequency of the problem behavior.

The students were asked to complete tasks during a 5-minute session under two conditions of choice in task and no choice in task. Also, during the choice condition, students could switch task whenever they wanted. The students were responded to differently during problem behaviors based on the determined function of their behavior. Students with escape functions received a 10-second break for each occurrence of problem behaviors. Students with attention functions received five seconds of attention in the form of reprimands for each occurrence. After the choice versus no choice conditions, if the student demonstrated behaviors related to attention, the researchers conducted a functional intervention with reinforcement of alternative behavior and extinction with frequent praise for task related responding and ignored problem behavior.

The results showed a substantial reduction of problem behaviors during choice conditions compared to the no choice condition for students engaging problem behaviors as a result of escape. The results in the term of mean percentage of time of session engaging in problem behaviors is listed below in Table 3.

Table 3**Mean Percentage of Time of Session Engaging in Problem Behaviors**

Subject	Choice Condition	No Choice Condition
1	8%	71%
2	23%	65%
3	27%	69%
4	2%	72%

The results for the three students that demonstrated problem behaviors based on attention, showed an increase in problem behaviors under the choice condition over the no choice condition. The results in the terms of percent of time engaged in problem behaviors are documented below in Table 4.

Table 4**Percent of Time Engaged in Problem Behaviors**

SUBJECT	CHOICE CONDITION	NO CHOICE CONDITION
1	20.9 (mean frequency of behavior during 5-minute session)	15.3
2	88%	71%
3	71%	63%
4	72%	55%

The students during the functional intervention with reinforcement of alternative behavior and extinction condition showed a dramatic decrease in problem behaviors. One student went from a mean frequency of 17.3 occurrences per session to 2.9 occurrences. The other students went from mean percentages of 78 and 67% to 15 and 9%, respectively.

Overall, the study had a limitation of being a pull-out, one-on-one setting instead of a classroom setting. However, the authors did validate the hypothesis by finding that individuals with problem behavior, as a result of escape from tasks, are more likely to benefit from interventions involving choice of task than individuals with behavior maintained by attention.

The authors stated that when the students who benefited from the choice of task condition had the choice options removed, they had an increase in problem behaviors. Therefore, it is important to consider the feasibility of using a choice intervention on a long term basis before implementing.

Summary of Chapter 2

The 10 studies examined suggest that the presence of a choice condition can be beneficial to students with, and without, disabilities. The explanation of why the condition is favorable can vary. Some researchers suggest that it is because the student has an option for a more highly favorable assignment. While others suggest that it is the feeling of control over their environment that the student feels. However, no matter the reason or the extensiveness of the choice condition, in general, these studies show an improvement in achievement, engagement, and behavior of students when offered a choice condition.

Chapter 3: Conclusions and Recommendations

The purpose of this paper was to investigate the effect of academic choice on student engagement, achievement, and the behavior of students with disabilities. Chapter 1 provided background information on the topic and Chapter 2 presented a review of the research literature. In this chapter, I discuss the conclusions, recommendations, and implications from the research findings.

Conclusions

I reviewed 10 studies examining the effectiveness of student choice as an intervention in an educational setting for students with disabilities. Two of the studies primarily focused on the impact on student engagement (Killu et al., 1999; Lane et al., 2015), three focused on student achievement (Cosden et al., 1995; Skerbetz & Kostewicz, 2013; Stenhoff et al., 2008), and five focused on student behavior (Jolivette et al., 2001; Kern et al., 2001; Powell & Nelson, 1997; Romaniuk et al., 2002; Umbreit & Blair, 1996).

Student Engagement. Both studies examining the effect of choice on student engagement found an increase in academic engagement when students were offered a choice. Killu et al. (1999) found students being allowed to complete a preferred task showed greater impact than choice alone. This study suggested that the presence of choice as an intervention may simply allow more opportunity for the preferred task. Lane et al. (2015) concluded that providing choice also improved academic engagement. However, this study also examined the presence of problem behaviors as part of student engagement. When this variable was considered with the presence of choice conditions, there was only a limited amount of improvement in problem behaviors. In both of these studies, one of the main limitations was the

small number of participants (three and two, respectively). Therefore, it is difficult to generalize this data from either study.

Student Achievement. All three of the studies examining the impact of choice on achievement found that increased student choice in assignments led to an increase in performance. Two of the studies allowed students to choose from a list of possible assignments to complete (Cosden et al., 1995; Stenhoff et al., 2008). Cosden et al. (1995) found that allowing students to choose which assignment to complete led to increased performance. However, it also found that students performed even better when given the choice of task and reinforcement for completing the task. Stenhoff et al. (2008) found that when given a choice between an alternate assignment and a class assignment, student performance will improve even if the original class assignment is selected. Both of these articles suggested that the more choice given to a student, the better the performance. The third study by Skerbetz and Kostewicz (2013) concluded that the choice of order in which to complete assignments led to increased performance. All of these studies showed ways to provide choice to students without sacrificing instructional content.

The difference between these three studies was the participants and settings. Two of the studies' participants included students with emotional behavior disabilities (Cosden et al., 1995; Skerbetz & Kostewicz, 2013) and the other study used a student with a learning disability (Stenhoff et al., 2008). The studies were conducted in different settings. Cosden et al. was set in a residential facility, Stenhoff et al. was set in a resource biology course, and Skerbetz and Kostewicz was set in a general education classroom.

Student Behavior. Five studies focused on problematic behavior of students. When provided choice, researchers determined that the intervention of choice resulted in fewer problem

behaviors. Three of the studies provided students with a choice from a list of assignments (Powell & Nelson, 1997; Romaniuk et al., 2002; Umbreit & Blair, 1996). Whereas, two of the studies examined the impact of choosing the sequencing of required tasks (Jolivet et al., 2001; Kern et al., 2001). Romaniuk et al. was the only study that considered the function of the behavior problems by dividing the participants into groups with escape functions and attention seeking functions of problem behaviors. Kern et al. and Umbreit and Blair both considered the influence of task preference when using their choice interventions.

Overall, students with behavior problems tended to decrease their problem behaviors when provided choice in academic tasks. However, Romaniuk et al. (2002) concluded that students demonstrating problematic behaviors as a function of attention actually increase their problematic behavior when choice was introduced.

Recommendations for Future Research

All of the studies reviewed listed sample size as a limitation. The mean number of participants in this review was 2.9 students with a mode and median of three students. This small sample size limits the amount the research and data can be generalized.

Four of the studies noted the limitation of setting on the results. Jolivet et al. (2001) and Lane et al. (2015) both stated limitations with their results due to being in only in one setting. Kern et al. (2001) stated that two of the subjects completed the experiment in atypical settings for school-aged students as it was set in an inpatient hospital setting. Romaniuk et al. claimed readers should consider the intervention was completed during one-on-one pullout sessions. While these were the only ones to state it as a limitation, all of the studies were limited due to the lack of multiple settings.

Cosden et al. (1995) noted a limitation not considered in the other studies. Cosden et al. explained their intervention did not include teaching students how to make effective choices for themselves. Future research should consider this as part of the pre-study teaching requirements.

The one area of limitation I continually came back to was the generalization of all of the studies to include multiple areas of disability into a single study. The studies were not consistent on choosing subjects fitting a certain disability area. In the future, I would recommend focusing on the results of these interventions on students with a specific disability instead of casting a broad net of all students with disabilities lumped together.

Implications on Practice

As a professional educator, I feel it is my job to do what I can to stay informed and to be a useful contributor to my employers. Therefore, much of my research and learning about this topic will be used in my current setting. In my role as a general education teacher, I have always looked for ways to individualize the learning for all of my students, but especially my students with special needs. I am continually looking for a way to make students receiving special education services successful in my courses.

Within my classroom, I intend to allow students more choice in their tasks and their environments. The most effective strategy I found was allowing students to choose the order to complete tasks. This gives me the opportunity to continually teach the same material and allow students choice. By doing this, I am not sacrificing my instruction or the student learning, but allowing students the power to individualize how they learn in my classroom.

Once I have implemented this change of instruction, I intend to apply the intervention of choice more into the areas of project based learning (PBL) and menu options for my students.

This will allow students a choice of preferred methods to learn and to demonstrate their knowledge. I acknowledge this will take more prepping of materials, but believe, based on the research, it is the best strategy for all students.

On a building level, I have begun, and will continue, to advocate for, and use, the intervention of choice as a Tier One RTI intervention. As part of our Building Instructional Leadership Team, I have been allowed to explain my research and implement the intervention for students with academic and behavior concerns. Typically, this has not been used as an intervention in our building. I hope that the addition of it will allow us to better identify students that need to continue to be monitored by our student intervention team.

Summary

The findings of these studies suggest choice as an intervention can be successful for students with disabilities. While limitations of the studies should be considered, they all demonstrate that allowing students some control over their learning and environment can be useful. Surrendering control over some aspects of their classroom can be uncomfortable for some educators; however, we must include this as a tool in our toolbox to help create a more individualized education for all of our students.

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