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Growing-and-Giving Mindset Intervention in Early Childhood Education: A Collaborative Action Research

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Abstract

In childhood education, a behaviorist approach (a mixture of praise and punishment) has been used for student target behaviors; however, the results have not been consistent. This study investigated how a constructivist approach would work in the same setting. The participant was a four-year-old student who showed target behaviors with negative attention-seeking and avoidance of self-regulation; three teachers and the author worked with him on collaborative action research. We treated him using the behaviorist approach in the first cycle of intervention. It seemed to work on the surface but was not helping him become autonomously self-regulated; his surroundings learned to remove the antecedents. We took the constructivist approach for the second cycle of intervention, wherein the student was provided opportunities to build puzzle pictures and give them to his teachers or friends. The teacher's scaffolding helped him complete the task, perceive his competence, and aim for even bigger challenges. Through his efforts, he experienced making others happy, and as the growing-giving mindset was fostered, the target behaviors were decreased.

Keywords

constructivist, growth-mindset, early childhood education, intervention, collaborative action research, trajectory equifinality approach

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Growing-and-Giving Mindset Intervention in Early Childhood Education: A Collaborative Action Research

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In childhood education, a behaviorist approach (a mixture of praise and punishment) has been used for student target behaviors; however, the results have not been consistent. This study investigated how a constructivist approach would work in the same setting. The participant was a four-year-old student who showed target behaviors with negative attention-seeking and avoidance of self-regulation; three teachers and the author worked with him on collaborative action research. We treated him using the behaviorist approach in the first cycle of intervention. It seemed to work on the surface but was not helping him become autonomously self-regulated; his surroundings learned to remove the antecedents. We took the constructivist approach for the second cycle of intervention, wherein the student was provided opportunities to build puzzle pictures and give them to his teachers or friends. The teacher's scaffolding helped him complete the task, perceive his competence, and aim for even bigger challenges. Through his efforts, he experienced making others happy, and as the growing-giving mindset was fostered, the target behaviors were decreased.

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Many early childhood educators struggle with the high frequency of challenging behaviors among students. The prevalence of children exhibiting challenging behaviors in early childhood settings has been reported to reach as high as 34%, and preschool programs are expelling children at increasing rates (Green, 2018). To tackle this problem, many schools in the United States rely on applied behavior analysis (ABA) and individualized behavior intervention plans called positive behavior support (PBS), based on ABA (e.g., Hirsch et al., 2020). ABA helps outline interventions and strategies for reducing targeted problem behaviors and increasing replacement behaviors (Collins & Zirkel, 2017). However, despite teachers' best efforts to develop plans that support students' behavioral improvement, the desired results are not always achieved (Todd et al., 2008). Meta-analysis reviews suggest that it is no longer adequate simply to look for uniform solutions; educators need to compare different interventions to judge which is the most effective for individual cases and why (Wisniewski et al., 2020). This is supported by the following quote from Hirsch et al. (2020):

Although two of three target students demonstrated improved behavior, analysis of peer comparison data revealed no clear pattern in behavior associated with the introduction and withdrawal of intervention. Whereas some students responded positively, others' behavior actually worsened with intervention, which contraindicates our original hypothesis of seeing positive collateral effects on behavior. (p. 18)

The current study sought an alternative to fill the gap between reality and the theory of behaviorism. Recent research has revealed that improving behaviors and performance correlates with changing students' mindsets, and mindset can influence both behavior and cognition (e.g., Armor & Taylor, 2003; Burnette et al., 2020; Mrazek et al., 2018). Some researchers have focused on improving noncognitive skills, including developing a growth mindset, rather than targeting specific behaviors, and revealed promising results (e.g., Yeager & Dweck, 2012). Exploring this relatively newer concept of mindset, the author undertook action research to address these ongoing and unsolved problems in education. The author was the principal of an international school and a Ph.D. candidate in educational psychology, interested in investigating the innovative way to support individual student motivation. The intention was to improve the educational environment by implementing theories and advance the theories through interventions. Both traditional behavioral intervention and mindset intervention were considered in the current action research. If the behaviorist approach did not work, will working on a child's mindset effectively reduce his target behavior? The cyclic framework of action research, comprising situational analysis, intervention, and evaluation, is discussed to provide a clear picture of the interlinked processes involved in such research (Clark et al., 2020). This single participant qualitative study in a local context will contribute to picture the current educational environment on a global scale and create a stir. When we share similar issues widely across early childhood education, the challenges of being fully inclusive are reduced.

Theoretical and Research Perspectives

The development of ABA was based on behaviorism and the field has grown significantly in the last 10 years and the number of certified practitioners continues to increase (Guercio, 2018). The foundation of behaviorism was laid by Pavlov and Watson, who viewed psychology as an authentically objective, experimental division of natural science (Watson, 1924). They focused on objectively observable physical behaviors. Studying Watson's research, Skinner invented the Skinner box, an apparatus in which a rat learned to press a lever to receive food, an action which got reinforced by the outcome of obtaining food each time it pushed the lever. Through this result, Skinner emphasized the role of contingencies and consequences (Moore, 2017). Therefore, behaviorists underline that learning occurs at school when an individual responds to external stimuli such as rewards and punishments, which determine their future behaviors (Morrison et al., 2004). As Weegar and Pacis (2012) stated that behaviorists were not interested in what occurs in human minds; they were only interested in behavioral responses.

In contrast to the behaviorists, cognitivists and constructivists view learning as mental activity and state that behaviors occur as a reflection of the mind (Richardson, 1996). Based on Piaget's theory of cognitive development, cognitivism looks at learners as individuals who make progress through biological maturation and interaction with their environment. Learners' prior knowledge and experiences impact their behaviors (Feldman, 2003). Constructivism sees learners in a collaborative process in which knowledge develops from their interactions with culture and society. Learners grasp their own understanding through experiences of searching for meaning in context (Vygotsky, 1978). Cognitivism and constructivism both look at learners as active participants in the learning process. Yet, while cognitivism believes that learners only process given information, constructivism believes that learners elaborate and interpret the information (Jonassen, 1991). To summarize, Ertmer and Newby (2013) indicated the following:

A behavioral approach can effectively facilitate mastery of the content of a profession (knowing what); cognitive strategies are useful in teaching problem-solving tactics where defined facts and rules are applied in unfamiliar situations (knowing how); and constructivist strategies are especially suited to dealing with ill-defined problems through reflection-in-action. (p. 68)

This historical sequence of learning concepts gave the author inspiration for alternative treatment for student's target behaviors. Many researchers, who know the behaviorist approach is insufficient, combine the cognitive approach with the behavioral approach. Kendall & Braswell (1993) who studied Cognitive Behavioral Therapy (CBT) explained that cognitive processes can be testable formulations that are integrated with behavioral paradigms, and it is desirable to incorporate cognitive treatment strategies with behavioral procedures (e.g., modeling, role plays, contingency management). However, they also pointed out early childhood children's cognitive deficiency. While adults have cognitive distortion where CBT can treat, young children have not developed the cognitive skills yet, so it is difficult to take cognitive approach. Furthermore, Harter (1982) recognized that children younger than five or six years of age are usually not interested or capable of reflecting on their thoughts and the processes. Finally, Crawly et al. (2010) noted that CBT should aim to help the child develop a world view that is characterized by a constructive problem-solving attitude.

Gonçalves (1995) depicted those human beings are narrators, and participants in their own plots. He discussed treatment as a rehearsing scenario for the construction and deconstruction of stories and insisted that constructivist paradigm provides a hermeneutic alternative that allows the conceptualization of humans as neither objects nor subjects, but as projects. The author implemented this constructive idea in the action research. In the same connection, Murphy and Gash (2020) demonstrated that teachers working with children with difficulties find constructivist ideas about learning helpful. They reported that impacting students' mindset to change their behaviors is a solid constructivist idea; teachers' and children's representations of learning are determined by their own choices and facilitated by suitable classroom experiences that provide opportunities for reflection on their classroom problem solving. The supportive culture of classroom fills up the deficiency of early childhood students' cognitive skills.

While mindset is a mental attitude or inclination as the Merriam-Webster dictionary states, in the academic field, mindset often refers to the terms used by psychologist Carol Dweck (2006), that is, fixed and growth mindsets. Growth mindset is the belief that personal characteristics, such as intellectual abilities, can be developed, and a fixed mindset is the belief that these characteristics are fixed and unchangeable (Dweck, 2015; Yeager et al., 2012). Following Dweck, many researchers conducted studies on mindset and suggested that when students believed their ability could grow with effort, their performance improved significantly (e.g., Yeager et al., 2019).

The current study provided an early childhood participant with jigsaw puzzle activities to achieve a growth mindset. Because the participant loved hands-on creation, jigsaw puzzle activities were chosen by following the character strength application that encouraged educators to incorporate student strength into interventions (Haslip & Donaldson, 2021). Jigsaw puzzle activities were used as firsthand, sequential goals to visualize progress so that the participant could learn from his experience. The experience included overcoming challenges to achieve a goal. Boekaerts (2016) indicated that when individuals have personal goals, their actions become meaningful and purposeful; the goals set a standard for their actions to lead to the desired outcome. Karoly (1999) exhibited that goals are profoundly and meaningfully embedded in the reality of an individual's everyday life, providing a substantive basis for feelings, thoughts, and planning. As mentioned above, the constructivist approach

provides students change in their mindset through experiences that offer opportunities for reflection on problem-solving and working towards goals that accelerate autonomous self-regulation. However, not many studies intentionally constellated the essence that helped students foster a growth mindset to change their target behaviors. In this study, the goal suggested for the participant in the intervention involved a prosocial component. The final goal was not only to complete the puzzles but to experience the process of trying and then to communicate his achievement with others and make them happy. Wentzel, Muenks, McNeish, and Russell (2017, 2018) described that pursuing prosocial goals predicts students' displays of socially responsible classroom behavior. Furthermore, Rudd, Aaker, and Norton (2014) demonstrated that having prosocial goals maximized participants' happiness and enhanced the positive effects of goal orientation. Therefore, using student's strength to set a prosocial goal will encourage his growth mindset and produce possibilities to change his target behaviors,

The current study conducted an intervention to consider the influence of the student's mindset and interactions with people on his behavior. Specifically, a growing-and-giving mindset intervention was designed to provide the learner with a prosocial goal and help him grow from working hard to achieve it. In this study, a growing-and-giving mindset is defined as the mentality of working hard to grow and enjoy your activities and contribute to the happiness of others. This concept was inspired by Dweck's growth mindset and Wentzel's prosocial goals in the constructivist framework. This intervention was expected to change the child's mindset to improve his behaviors and social interactions. Originally this study was to fill the gap between the conventional behaviorist approach and the reality in the educational field. The constructivist approach might be the possible alternative, and this qualitative study will testify whether it is effective.

Method

The present study is based on collaborative action research, which aims to search for solutions to everyday, real problems experienced in school. Collaborative action research is conducted by several teachers and school administrators, assessing students' needs, identifying the problem, gathering data, interpreting the data, acting on evidence, and evaluating results, that is, to decide on a course of action leading to desired outcomes (Ferrance, 2000). The term "action research" was first introduced by Kurt Lewin (1948), who described it as a recurring process of four research cycles: reflecting, planning, acting, and observing. The priority of the current study was to reflect on the situation with the team members to plan the following action to improve the situation rigorously. The team determined to Plan-Do-See until a positive result comes out, so collaborative action research was rational for this study.

Participant

Following Lewin's description, the current study first reflected on the problem at an international school in Tokyo. Reflecting on reports from the teachers and administrators of the school, a student who was facing difficulty fitting into the classroom was identified; the teachers were struggling to manage his behavior. The student was Alen (pseudonym), a four-year-old Japanese male student who had been at school since the age of two. He was fluent in English and had no intellectual disabilities. Alen's parents consented for him to participate in the study and an ethical approval for the study was obtained within the school committee. Teachers and Headmistress involved in this action research were from the United States and the United Kingdom, and the administrators were from Japan.

Procedure

Following Lewin's action research model, teachers, and the author (1) reflected, (2) planned, (3) acted, (4) and observed around the student in the first cycle of intervention. Next, we (5) reflected the outcome of the first cycle, (6) revised plans, (7) actions to improve the outcome, and (8) made overall observation in the end of second cycle. The nature of action research is in a naturalistic setting (Ivankova, 2015). Many variables influence each other as the research moves forward; the reflections, observations and the decisions based on those objective views are open and unpredictable. Therefore, the research method must be qualitative to absorb the complicated data and analyze them inductively.

Reflection

To obtain an adequate reflection of Alen's situation, we identified the problem area and collected data. A licensed psychologist at the child developmental center of Koto-ward in Tokyo had assessed his IQ and development. Given that Alen did not have any mental symptoms that required attention from a medical doctor or a special educational needs setting, the author started to work with the three teachers who taught him at the international school. First, we adopted a classical behaviorist approach. All three of Alen's teachers recorded his target behaviors in a chart with the headings Antecedent, Behavior, Consequence, and analyzed them together with the functional behavior assessments (FBA) approach. FBA is a process within ABA to determine whether there is a relationship between a person's behavior and their environment, and to further describe the nature of this relationship (Cipani & Schock, 2011; Scott & Cooper, 2017). The FBA was redone and continued until consensus was reached by all the parties. See Table 1. According to the meta-review of FBA for emotional and behavior disorders by Kern et al. (2004), the most of effective intervention in naturalistic settings are developed by based on direct observation.

Planning

After FBA, the teachers, headmistress, and the author as the principal and researcher interpreted the data and identified Alen's individual needs. As suggested by the licensed psychologist, we planned an intervention based on a behaviorist approach using praises and consequences. Additionally, we followed the idea that behaviorism is built on cause and effect, where a stimulus is responded to and behaviors can be changed with the right mix of reward and punishment (Bryant et al., 2013).

Action

Acting on the data, we conducted the behaviorist approach intervention from June to August 2020. The specific lists of instructions used were (a) use visual, (b) short commands, (c) specific directions, (d) immediate and constant praise, (e) positive direction, (f) remove the cause, (g) ignore the negative attention-seeking behavior if it is not dangerous, and (h) give quiet time (timeout) to calm down. See Table 2.

Table 2*Advice From the Licensed Psychologist*

- Visuals would help him clearly see what he needs to do. For example, where and how to clean up toys.

- Short, specific, and to the point commands only. Not too many at a time. “I asked you to line up,” instead of “It’s time to wash our hands and I already asked you to line up.”

- Very specific directions are needed. “Sit down crisscross on the green carpet.” instead of “Sit down on the green carpet.”/ “Sit crisscross on the carpet.”

- Immediate and constant BIG praise throughout all activities, even when only 25% of something has been completed, and especially anything to do with writing. “Your first two words are written beautifully. Let’s see if you can write the next two the same way.”

- Always provide positive redirection. Words like “Don’t,” “No!” and “Stop…” are not at all effective. “Put your hands in your lap,” instead of “Stop touching the table.”

- Try to figure out the cause of an incident, as in what was happening right before. Sometimes this may be easier than others, but prevention is key.

- Pick your battles and ignore behaviors that are not dangerous or disruptive. For example: standing at the back of the carpet instead of sitting on the carpet (after the whole class has received instructions and one positive reminder has been given) or sitting quietly in his chair instead of working in his writing folder (after constant praise).

- Separate him from others when he is violent and calm him down to give him time out.

Observation

We observed and recorded Alen’s behavior on charts during the intervention (Table 1). Through the observations, we recognized the need for a minor change in the intervention, and on July 16, 2020, we decided to no longer to give him a timeout.

Reflection

As the new term started in January 2021, Alen’s behaviors were discussed among the teachers, the headmistress, and the author, and a need for different interventions was identified.

Plan

The mindset intervention as a constructivist approach was considered. We incorporated Alen's strength to help his behavior. Character strength interventions have previously demonstrated remarkable increases in well-being and a significant reduction in negative feelings and behaviors (e.g., Duan & Bu, 2017; Haslip & Donaldson, 2021; Schutte & Malouff, 2019; Vuorinen et al., 2019).

Action

The author and the team conducted the growing-and-giving mindset intervention from February to March 2021. To help Alen foster the mindset, we gave him the task of putting jigsaw puzzles together. This activity occurred in one-hour-fifty-minute sessions from 2:00–3:50 pm on Tuesdays, Thursdays, and Fridays, in February and March. After Alen finished making the first 100-piece puzzle, we praised him for his efforts and let him take it home to show it to his parents. After finishing the second, 150-piece puzzle, we suggested that he brought it to the nutritionist who made lunch for everyone at the school because the puzzle's image was about healthy food. For the third, 200-piece puzzle, we told him that one of his friends with whom he often fought liked the image it depicted. The fourth, 300-piece puzzle depicted a character liked by one of the teachers with whom he often misbehaved. At each step, Alen received a more challenging task, and after completing it, he had the option to take it home or give it to someone. This was based on the following constructivist idea: "Teaching set up according to the principles of social constructivism invites students to choose their own cognitive and regulation strategies; to take initiative" (Boekaerts et al., 2006, p. 34). These tasks, suggestions, and options supported the growing-and-giving mindset, and the reactions he received from the environment helped him construct his mindset. The rationale for using this method was to identify whether mindset changes would produce behavioral changes.

Observation

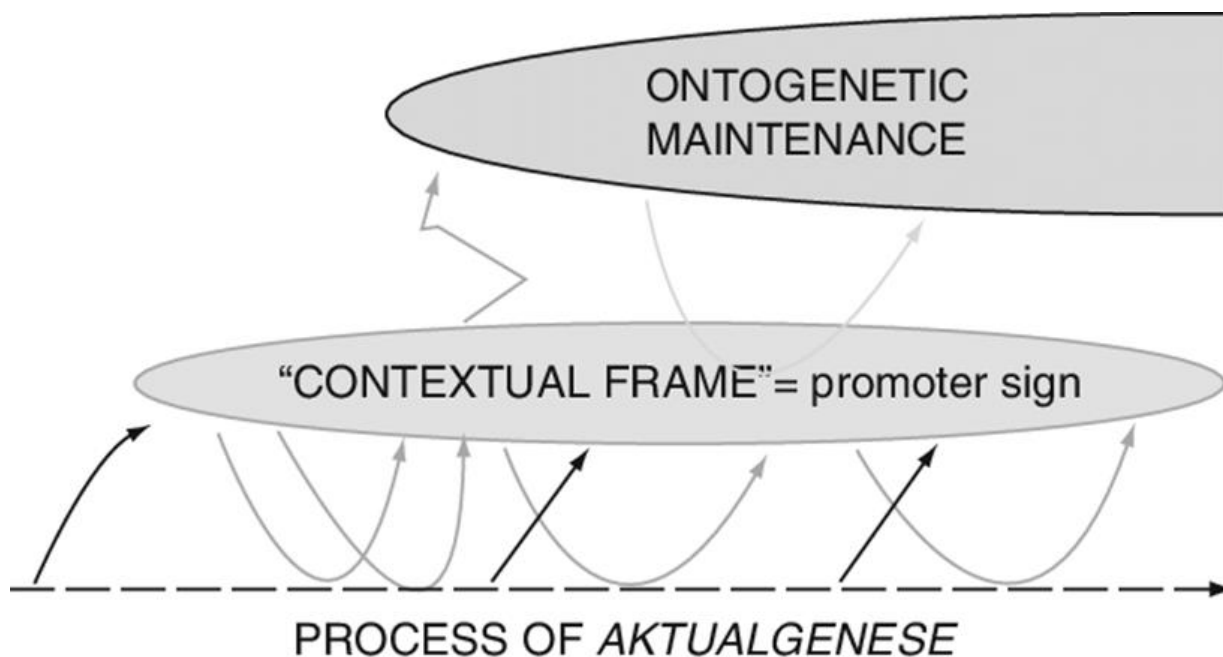
A qualitative approach to data collection was adopted. The 110-minute sessions of Alen making the puzzles were videotaped and daily observations, including dialogues between the student and teachers, were recorded by the teachers and the researcher. In this context, the student's language in conversation and general behavioral observations were more important than counting exactly how many times he hit another student or misbehaved. Qualitative research deems it essential to consider participants' views and natural contexts to obtain a complex picture, while quantitative analysis focuses more on the researcher's view and contrived settings to obtain a narrower picture (Creswell & Creswell Baez, 2020). This study focused on analyzing why the student's target behaviors occurred and how his interactions with the environment could change his behavior, by applying the constructivist problem-solving approach involving reflecting on actions taken, rather than merely reporting the occurrence of target behaviors. The qualitative data were transcribed and analyzed through constant comparison analysis, by the author, the teachers, and the headmistress of the school, and a member-checking procedure was used to verify the process. Constant comparison is a qualitative analysis approach wherein the researcher first reads through the entire set of data, then chunks the data into smaller meaningful parts and labels the chunks. After all the data have been coded, the codes are grouped by similarity, and a theme is identified based on each grouping (Leech & Onwuegbuzie, 2007) In qualitative research, the coding become the evidence for creating themes (Creswell, 2016). Based on the results of this coding, the author made a narrative of the student's growth.

In the second, constructivist cycle, to analyze how the student's mindset changed over time and to illustrate the process and the interaction briefly in a visual display, the author used a relatively new qualitative method, the Trajectory Equifinality Approach (TEA). Developed by Valsiner and Sato to map the growth or development of a person over time, TEA is a qualitative research method used in cross-cultural and developmental psychology (Sato et al., 2016; Sato et al., 2014; Valsiner, 2007). TEA allows researchers to explore how phenomena changed or did not change, why this was so, and in what relations, and to demonstrate it clearly to readers. A primary result of using TEA is the development of the Three-Layer Model of

Genesis (TLMG), which describes an ontogenetic trajectory of a life course, that is, how an individual elaborates the internalization process. According to Valsiner (2007)'s conceptual illustration (Figure 1), the lowest level is micro genetic level, the process of Aktualgenese (microgenesis) is constantly at work, for example, behaviors.

Figure 1

Valsiner Conceptual Illustration



But in the ontogenetic level (macro genetic), stays as nothing need to change regularly, for example, beliefs and mindset. It is in between the two levels, the mesogenetic level, where changes are consolidated to be either taken as novelties to the macrogenetic level or become regulators (promoter signs) of the microgenetic processes. The promoter sign can be derived from a social norm, habit, or any conservative tendency (Sato et al., 2009; Valsiner, 2007). Ontogenetic maintenance can happen through SDs (social direction), the force encouraging the person to proceed along a trajectory that distances him or her from the equifinality point, and SGs (social guidance), the force supporting a trajectory leading towards the equifinality point (Tokito & Terashima, 2020). To draw a TLMG, researchers first analyze the person/object in the time sequence and in the first layer, microgenesis, the process of action and events that occur. Next step is to inspect the social and cultural influence that the person receives and stipulates that on the model with arrows: SD and SG. By drawing the first layer, researchers learn about the relationship of the person with his/her world and the emergence of a conceptual framework in the second layer, and that eventually influence the third layer and changes in beliefs and values, in this study we call it mindset. In this developmental model, the concept of irreversible time means that time moves forward in one direction and never goes backward. (Sato et al., 2016). The TLMG was revised until theoretical saturation was reached and found how the mindset was changed in the third layer.

Results

The First Cycle: Behaviorist Approach

The results from the first cycle following the behaviorist approach demonstrated that Alen's target behaviors occurred mainly for two reasons. First, seeking attention for relatedness, and second, avoidance of self-regulation (see Table 1 the right column). Typical situations in which the target behaviors occurred were: (a) Alen felt jealous seeing other friends being close and having fun, so he interrupted them with violent acts; (b) Alen used violent actions and language to annoy others around him and enjoyed their reactions; and (c) when teachers reminded him to do what he had to do at that moment, he did not want to be controlled by other people, so he became violent. His remarks were aggressive, for example, "When I grow up, I want to be a superhero. I will use a gun and shoot you," with an angry facial expression. His actions were mainly punching, kicking, and spitting. He was not eager to play games in a group or dance along with music. However, he showed a strong interest in building with blocks and handicraft.

Table 1
Functional Behavior Assessments

Antecedent	Behavior	Consequences	Function of the behavior
What was happening before the behavior occurred?	What the student did or said	What happened after behavior occurred?	What the student sought
Friday, June 5 Snack time Shu was going to give his drawing to Keishi as a present.	Alen ripped the drawing as Shu was giving it to Keishi.	Teacher asked Alen why he ripped it, Alen said that he doesn't like presents. Teacher suggested that Alen tape the drawing together and give it back to Shu. He did and apologized to Shu.	Access to Attention He was jealous of his classmates being close together and give it back to Shu. He wanted to get the same attention and relatedness.
Monday, June 8 Reading, Writing, and Discussion While in class, Alen suddenly became angry.	He threw a chair and hit the teacher. While doing this he said his mom doesn't love him and that she hits him on the head and the stomach.	He was removed from the class and talked with another teacher (his main classroom teacher). He told the teacher he was mad at the school and didn't want to do the tasks. Once he calmed down, he apologized before going back to class. He then only wanted to sit in the teacher's lap.	Access to Attention (and affection)
Thursday, June 11 Reading, Writing, and Discussion He did great up until his class sat down and were getting ready to read the book of the day. He ripped the book out of Asuza's hands (because he was excited to read), but the teacher said "No, no Alen. Let's share the book together." He refused to do so until the teacher took the book away from him.	He then made an angry face and refused to do anything. He proceeded to tell the teacher that she was bad because she said "No Alen." He stood up from his chair and walked around the room.	The teacher took him by the hand to guide him back to his chair. He then started to dig his nails into the teacher's hands and by doing so, ripped some skin off the teacher's finger.	Avoidance He doesn't want to be corrected. Sensory input He wants to touch the teacher by hurting her.
Friday, June 12 Reading, Writing, and Discussion At the beginning of class, he would not sit still so the teacher told him to sit crisscross but he refused, so the teacher made him sit crisscross by sitting him down and fixing his legs so they would be crisscross.	He said he didn't like the teacher, her necklace, her shirt, her hair or her black pants. When they started reading, he read with them nicely. Then they moved onto writing where he kept bothering another student by putting his hand in front of her face or punching the air in front of her.	The teacher moved him to sit by himself, then praised him on his writing folder and his behavior changed and said he wanted to try his best and do more. He then proceeded to get six checks and wrote everything that the teacher wrote on the whiteboard down.)	Avoidance He doesn't want to be corrected. Access to Attention He makes negative comments about the teacher to get her attention.
Monday, June 15 Snack time While kids were eating, Alen was punching right behind someone's head.	When the teacher took him aside to talk to him, he started punching the teacher.	He was removed from the room and taken to another room to calm down and to avoid an incident occurring. After a while, a teacher went in to talk to him. He said he didn't know why he was in there. When the teacher reminded him, he acknowledged what he was doing, but thought it was funny. He could not focus on the teacher while she was talking and kept trying to talk about other things. The talk did not seem effective. He returned to class in a happy mood just in time	Access to Attention He is not connected to his classmates, so he tries to get their attention by punching gestures.

		to start the after-school class.	
Monday, June 22 Playtime Some students were singing and dancing to "princess music" during center time.	From across the room, Alen started making angry faces at them, balling his fists, and mock punching towards them. The headmistress asked him what he was doing and he said "I don't like princess music."	The headmistress had a talk with Alen about how it is ok to not like things, but we shouldn't express our dislike with fists. Even though he wasn't actively hitting anyone, it seems like the only way he can display his displeasure with something is to express it in terms of punching and hitting it.	Access to Attention He cannot play nicely with his classmates, so he gets annoyed when others are having fun.
Wednesday, June 24 Reading, Writing, and Discussion Alen came into the classroom in a good mood. The class started off with an ice breaker game.	He came up behind the teacher and bent her fingers backward like he was trying to break them. The teacher sat him down and asked him not to do that because it hurts. He then made an angry face and didn't say anything. For the rest of the class, he kept saying "I don't want to read, I don't want to write, I don't like you, I don't like anyone, I want to make everyone sad." He would also dig his nails into the teacher's hands or arms.	When the class started writing, he wrote one letter and the teacher praised him. He then proceeded to write everything on the board! But while writing he was still saying the negative things and at one point he came up to the teacher, pulled his mask down and sneezed at her. He then said, "I want to make you sick."	Access to Attention He only knows negative attention seeking.
Monday, June 29 Reading, Writing, and Discussion Alen had a decent day in reading, writing, and discussion. He was participating nicely until the writing portion of the class where he started grabbing at his arms. It could be because the teacher told another student to stop hitting herself, and that we needed to love ourselves. Alen then said that he didn't want to do his work, but as soon as the teacher started praising other students, he did his writing.	He did not draw a picture relating to the writing today, and he started crossing his arms and pinched himself gently.	When I got on his level, he crawled into my lap, and I started to ask him questions: "Alen, don't hurt yourself, you shouldn't hurt yourself, I love you, and everyone else loves you, and I want you to love you." "I don't love anyone. I don't love myself. I want to be angry." "It's okay to be angry, but it's not okay to hurt yourself, why do you do that?" "I like to pinch myself." "Why?" "I want to bleed and hurt myself." "I don't want that. That makes me sad. I want you to like yourself." "I don't like myself. I don't like anyone." "I thought you said you liked me?" "I'm nice to you, but that doesn't mean I like you." "Oh, I see, well let's try our best today, okay?" He then agreed and went and got his writing folder and worked quietly for the rest of the class.	Access to Attention He wants the teacher's attention, but he doesn't know how to achieve it positively.
Monday, June 29 Speaking games class When the teacher entered the classroom Alen was being very sweet in his tone and the way he was talking to her. She thought it was going to be a good day for him. That quickly changed. She asked him to put on his mask because she noticed he wasn't wearing one.	The teacher turned her attention to another student and then she heard a spitting noise and she felt something wet on her hand. She asked Alen if he just spit on her. He said he did. She asked him why he did that, and he said because it was funny. She explained to him why that is not okay. He then stayed standing and she asked him to sit like all the other students, so that the class could start their first game. He refused. She asked him nicely many times to please sit. He refused. She then escorted him to the green carpet to sit so they can play the game. He exclaimed that he didn't want to play the game with them. She replied that that was fine but that he still needed to sit and watch. Then he started punching and kicking the air, which he usually does when he gets upset.	The teacher started teaching the game to the other students and then she heard Toka say, "Ouch!" The teacher asked her what happened, and she said Alen hit her in the face. The teacher asked him if he did that, and he quickly said he did. She directed him out of the classroom.	Avoidance He doesn't want to be corrected or have his flaws pointed out.
Friday, July 3 Speaking games class The headmistress went in the room to talk to Alen. The headmistress started positively by specifically praising him for what he was doing well in class right before the incident. Then she asked him what happened.	He hit his chest and said he hit Taichiro on the head. The headmistress asked him why he thought that was a good idea and he immediately said that it was on purpose. She asked why he hit Taichiro. He thought for a moment and then started eating his mask and told me Taichiro was eating his mask and that he didn't like that. He said, "Coronavirus will get everywhere!" with big actions.	She immediately told him she understood how he was feeling that he was worried about spreading germs and getting sick, but that even if you don't like something or are upset, hitting is not a good choice. She asked him if someone was to hit him in the head how he would feel. He said it would hurt. She said that was how Taichiro was feeling. She told him again that she understood how he was feeling, but that there was a better way to handle our feelings. She asked him what he could do instead of hitting, but he couldn't answer. She reminded him he could use his words instead. She asked him what he could have said to Taichiro. His exact response was, "Taichiro wear your mask nicely, please." She immediately praised him for those wonderful words saying those are great words to say and offered a hug in a silly, super proud way, but he refused. She reminded him next time someone was doing the wrong thing he should use his words to help instead.	Access to Attention He wanted to talk to his classmate.
Thursday, July 16 During snack time, Alen hit Keishi	While in the room alone, Alen was: - climbing on chairs to look into the other	We decided that he can no longer be in a room alone for timeout.	Escape He didn't want to be in the

so he was given time out in a separate room.	classroom/went out the door and was banging on the window - banging quite loudly on the door - unlocking and opening the door on his own and leaving the room - throwing things out the (semi-open) window** This was the only new behavior.	When moved to the extended nursery room, he was constantly wandering around, touching people and things and shouting in kids' faces. He was climbing all over the teacher. He did this NON-STOP. Later, while the class was going on, he was pulling art off the wall. When brought out of the room, he could not/would not sit still/stop touching things. He was angry and purposefully did unwanted things.	timeout room, so he became violent and aggressive to get out of the room.
Monday, August 3 Not interested in joining dance activities. Standing in the back of the room just staring at the teacher. Got angry at the teacher when she reminded him to raise his hand if he wanted to speak.	Began punching himself in the face and chest while looking angrily at the teacher.	When the teacher said to be nice to himself, that she was just reminding him what to do, he eventually stopped.	Avoidance He doesn't want to be corrected or controlled.
Tuesday, August 4 Again, not interested in dance activity. Regularly looks at you while doing unwanted behaviors, knowing he should not be doing them.	Turned on a broken sink that had a tape on it. Plays for short bursts of time before going to an adult for attention, craves adult attention and affection.	After the teacher talked to him one on one, he calmed down and enjoyed building blocks and dominoes.	Access to Attention He does the wrong thing knowingly because he wants attention from the teacher.
Wednesday, August 5 Does not enjoy group games (Boom Chicka Boom Dance, Musical Chairs).	He became obsessed with how the paper fell to the ground like a helicopter so that is all he wanted to do.	The teacher gave a lot of redirections to complete his work.	Avoidance He wanted to avoid his work and started to throw the paper.
Thursday, August 6 Circle time talking about our mottos.	Yelling the rules instead of saying them using an inside voice. Purposefully doing the opposite of what is being asked of the class.	The teacher had a talk with him.	Access to Attention He seeks social attention.
Wednesday, August 12 Talking about when we grow up in the theme time.	"When I grow up I want to be a superhero. I will use a gun and shoot you." (Pretends to shoot the teacher.)	The teacher was surprised by his answer and told him it is not a good goal.	Access to Attention He learned how to get negative attention by talking about violence.
Friday, August 14 His block creation broke when he moved the chair it was on.	Got upset and angry and yelled, "I can't fix it!" angrily.	The teacher reminded that he could, and he did.	Sensory Sensitivities He wants to let his frustration out. Access to Attention He wants to get attention from the teacher.
Tuesday, August 18 Play time. Some boys were playing with blocks.	Alen hit someone and said that he wanted the blocks the boys were playing with.	The teacher talked about what he could say instead, then he got angry when he was not allowed to play with them (swinging arms around). The teacher told him it was ok to feel angry and reminded him of what he could play with. With more encouragement, he eventually asked someone else "Can I play with you?" and sat down and built a domino track together for quite a while.	Access to Tangible Items He wants more blocks for his creation.
Thursday, August 20 Alen did not do much writing during theme time (story writing), when the class started to move on.	Alen got upset when he realized he was not done. When the teacher said you have to work hard to see progress, he wrote one word but then got so upset that he could not finish.	He was encouraged to start the next page. He freaked out and started screaming and crying, and was removed from the room to be with the admin. He took a while to calm down.	Avoidance He does not want to be controlled by others' pace.

The author and the team implemented an intervention involving positive and negative reinforcements, that is, praise for good behaviors and timeouts for violent behaviors, in June 2020. Alen did not seem to care too much about what the teachers said, so timeouts were the easiest solution to calm him down for the sake of classroom management. However, after one month, as of July 16, 2020, we decided to stop using the timeout as a negative reinforcement, as Alen became more violent after he came out of the timeout. He yelled at whoever around him "I will kill you!"

In a therapy session with a licensed psychologist at the end of August 2020, Alen showed the same behaviors that we had recorded. The note we received from the psychologist said:

He was easily frustrated and upset when he did not know the answer or how to do something. That was when he acted out or tried to avoid the situation. Writing was his weakest subject area in that he had a hard time completing it

and staying motivated, especially if it was a big task. He had trouble concentrating and sitting still.

From September to December 2020, Alen was receiving all the attention he needed from the teachers but was not given any negative reinforcement. He seemed to behave much better than before. He did not show any major target behaviors at school. Teachers gave him explicit instructions, removed most of the causes that triggered his violence, and gave special care and attention to prevent target behaviors. For example, they listened to him when he wanted to be heard and praised him for his nonviolent behaviors. At the same time, Alen's mother decided to leave work earlier to spend more time with him.

In January 2021, Alen's teachers, the headmistress, and the author discussed Alen's behaviors and agreed that he was a very pleasantly behaved child when he received the attention he wanted. If the teachers could manage him by providing constant attention, he was a friendly energetic boy. However, this realization raised the question of whether Alen was really getting better at self-regulating himself or his teachers were becoming experts at controlling the situations? From a behaviorist perspective, his behaviors were successfully controlled as their antecedents were removed by his teachers' efforts so that he did not have to negatively seek attention. However, the fact that Alen constantly needed attention did not change. His catchphrase was "Do you know?" and he always showed how much he knew. "Do you know? T cells receive information, attach cancer cells, and kill them! They are killers!" When he received constant attention from his teachers, he seemed satisfied and did not pick fights with his classmates.

In February 2021, Alen's classroom teacher called the author about Alen's behavior. He was fine if he was getting all the attention he wanted; however, outside the classroom with different teachers, he acted up again to gain their attention. For example, on Monday, February 15, 2021, he attended his first rugby class with a new teacher. During class, he suddenly ran far away from the group, outside the school boundary, so that the teacher had to chase and catch him. The following day, on Tuesday, February 16th, in a science experiment, Alen's class was combined with another class in the same grade. The experiment involved using the light from the projector to simulate sunlight and create shadow puppets. Alen deliberately blocked the light of the projector while the teacher of the other classroom was explaining the shadow puppet activity, so his own classroom teacher took him aside and reminded him that if he did that, no one would be able to participate, but if he waited his turn, he would get to make a shadow puppet. He was asked to return to his seat; instead, he laid on the floor in front of everyone, punched himself in the head, and banged his head on the floor. The classroom teacher asked him why he was hurting himself and Alen responded, "Because I want to die."

After receiving this report, the author attended the rugby class to observe Alen the following Monday. The author saw the teacher was already giving Alen special treatment to avoid him getting upset or losing focus. For example, when the teacher saw Alen was not enjoying the group training, he said, "Alen, you can come to the front. Everyone, line up after Alen!" Alen looked satisfied by receiving special attention. When he received special attention, he was harmless, but it only lasted approximately 10 minutes. Therefore, every 10 minutes when Alen lost focus, the teacher was giving him attention by calling his name or giving exceptional care. The teacher was managing the situation, but at the same time, Alen was controlling his environment and not himself.

Therefore, the target behaviors were prevented only if the teachers learned to pamper Alen. However, it remained unclear whether this was good for Alen. He had never learned how to regulate his behavior, and his mood was still contingent upon the environment. As the school believes that the goal for students is to be autonomously self-regulated and engaged in learning activities, we decided to pursue a second cycle of intervention to fill the gap.

The Second Cycle: Constructivism

The purpose of the growing-and-giving mindset intervention was to help Alen learn autonomous self-regulation and make connections with others. When faced with a difficult task, Alen could not continue working, and to avoid working, he chatted. Additionally, Alen wanted to interact with others and be close to them but did not know how to build positive relationships. According to Gash (2014), an important feature of constructivism is facilitating reflexivity in children and varying their approaches in the face of difficulty. The constructivist approach would provide Alen with genuine emotions and reactions instead of merely managing the problems. He needed to develop skills (1) to confront difficulties, and (2) to earn positive attention. Through the constructivist intervention, to help him confront difficulties, we gave him a chance to work on what he was good at (jigsaw puzzles) and gradually elevated the difficulty level. When he complained, we encouraged him to continue solving the problems. To enable him to earn positive attention, we gave him contextual suggestions regarding how he could make people happy. The themes found by coding are placed in the title of the paragraphs below.

Work Hard and You Will Achieve It

For the first puzzle that started on February 18, 2021, he was excited about the challenge and completed it by himself on February 28, 2021. We offered genuine praise for his hard work and for achieving his goal. We let him take the completed puzzle home to show it to his parents. His parents were happy to see his efforts and the completion of the work.

My Work Can Make People Happy

He started the second puzzle on March 1 and finished it on March 4th. Because the picture's theme was healthy food, we suggested showing it to the nutritionists who made lunch for everyone at school. He was excited to show his achievement to other people, so he agreed to take the picture to the kitchen. The nutritionists welcomed Alen with big smiles, thanking him for thinking about them. Alen seemed to feel good about himself for making the nutritionists happy. We took a photo of Alen giving the puzzle to the nutritionists. Taking photos of participants gives them empowerment (e.g., Liebenberg, 2018), so we expressed how we felt about his achievement, and showed our happiness and celebration by taking his photos. In addition, the puzzle was hung on a wall outside the kitchen.

I Can Do It! — Competence Fostered

On March 8, Alen started to work on the third puzzle, which was a picture of Rapunzel. When he finished making the puzzle on March 9, we let him know that Rita, a classmate with whom he often argued, liked Rapunzel, and asked if he wanted to give the picture to her or take it home with him. He said, "I want to give this to her," and he did. Again, we took a photo of Alen giving the present to Rita. He looked very proud, and although Rita was a little confused, in the end she was happy to receive the picture from Alen. After Rita received the puzzle, she dropped it and it broke. Before the intervention, Alen responded negatively to any unexpected accidents, but this time, he said, "It's ok. I can fix it. I made it so I can fix it." His perceived competence seemed to be growing, making him generous.

Facing Difficulties

On March 11, he started working on the fourth puzzle with 300 pieces. Alen had worked on the puzzle for about half an hour but had made no progress and looked irritated. He said, “I don’t like puzzles. I don’t want to do it anymore.” The teacher asked him why and he answered, “It’s so difficult. I can’t do it.” This prompted the teacher to call the author. The author talked to Alen on a video call and told him that they were proud that he had been working hard. The puzzle was now 300 pieces and a lot more difficult than the other puzzles he had completed, and that it was normal to find it difficult. The author told him that if he did not give up and continued working, he could solve the puzzle. The picture was of his after-school teacher’s favorite character, Ariel, and the author told him that his after-school teacher would be very happy to receive the puzzle he made. According to the teacher who he was with at that time, Alen became quiet after the video call and started to move some puzzle pieces. However, about half an hour later, he was lying under the table.

Scaffolding Break Through — Competence Strengthened

The next day, March 12, when the author visited him, he seemed happy. One of the teachers advised him to look for the edge pieces and make the frame first; he started to gather the pieces and connect them. He smiled a lot when he made one corner of the picture. He started humming and said, “Look! I found the line! It’s this part!” He asked the teacher, “Can I do the puzzle tomorrow?” On March 15, he continued and showed a positive attitude; “It’s so difficult. But I’m not gonna give up!” On March 16th, he told the teacher who gave him a tip, “Can you help me? I’m frightened. It’s too difficult... but I am not gonna give up.” On March 17, the teacher was sitting with Alen working on the puzzle; he told her, “I love you, I wanna be nice to you.” On March 18th, Alen told the teacher, “I wanna be puzzlist!” The teacher asked him what it meant. He answered, “It’s the person who makes puzzles! I love puzzles. It’s fun!”

I Want the Next Challenge — Growth Mindset Fostered

On March 23, Alen finished the puzzle depicting Ariel. He was very keen to give it to Miss Theresa, with whom he was usually difficult. The teacher suggested writing a letter to go with the picture. He was happy to write the letter, asked how to spell some of the words, and was motivated to write sentences independently using his own words. When Alen saw Miss Theresa’s happy reaction, he said, “I want to try a thousand pieces next! No, no, this was 300 pieces, so next is maybe 500 pieces!”

The Way to a Positive Attention Learned

By working on four puzzles, Alen learned to face difficulties without avoidance and experienced the joy of working hard and achieving his goals. Moreover, he adopted a new strategy of connecting with people. He now wanted to make people happy instead of annoying them. His classroom teacher who observed him in the intervention noted the following:

Alen provided me with updates on his various projects. Every day, he would tell me how far along he was with his puzzle projects. He really looked forward to working on them, and they became the highlight of his day. As a result, his demeanor was more positive overall. I also noticed that he became better at self-regulating from this point. Many classroom behavioral issues with Alen stem from very tiny issues (like sitting nicely or keeping his shoes on his feet) that

he interprets as the teacher disciplining him, so he acts out in response (I think he is used to interactions with adults being negative by default, so he would respond as such.). In the last two months, I noticed that he became more responsive when I pointed out to him that "This is just a small problem we can easily fix. We don't need to make it a big problem." He also controlled his emotions in situations that would previously have led to self-harm. He would ball up his fists, but rather than hitting himself/the floor, after a second, he released them and refocused his attention on the teacher/activity.

Growing-Giving Mindset Fostered

The teachers' observations matched with Alen's remarks. When the author encountered him on the stairs one day in March when Alen was going home, he said, "I made a cherry blossom today, I want to give it to you!" and handed the author the beautiful cherry blossom he had made in his morning class with a toilet roll tube with pink tissue. The author said, "Thank you so much. I'm really happy that you thought about me." This autonomous giving behavior demonstrated that the mindset he fostered during the intervention was transferred to his daily life. His mindset changed, and his behaviors changed alongside it. The observation was analyzed on TLMG which visualized Alen's growth at glance (see Figure 1 & 2).

Continuing the Process – Cycle 3 and Beyond

The new school year started after two weeks of spring break in mid-April, and everyone at school was too busy to start the cycle 3 right away. Alen was in the new classroom with a new teacher and new classmates. It is common for young students to lose routine and target behaviors get worse, and we needed to reassess his situation and reformulate the case. The cycle 2 worked effectively and produced positive results, however, children learn quickly but forget quickly (Atkinson et al., 2019); he could not keep direct attention to the valuable information he had learned in working memory. The collaborative action research will continue.

Discussion

While ABA was only partially effective for some children with target behaviors, this study sought an alternative in a constructivist framework. The growing-and-giving mindset intervention in this study had a positive impact on Alen's behaviors. It did not function using a stimuli and behavioral response approach, but rather enabled Alen to empower himself and acquire the alternative idea of growing and giving to others, without adopting negative attention seeking behaviors. The student demonstrated an autonomous self-regulatory development and overcame difficulties. He learned how to show his interest in others by being nice to and building connections with them.

The aim was to have the student practice his new mindset independently when he came across a challenge. Through the intervention, he formed the idea that challenges were opportunities for personal growth, and his efforts were appreciated. Consistent with Murphy and Gash (2020), his growth mindset comprised the psychological tools he gained within himself, his own language use surrounding learning, his own expectations of a task, and his attitude toward challenges. This is also consistent with Dweck's growth mindset theory in which students' mindsets—how they perceive their abilities—play a key role in their motivation and achievement (Dweck, 2015). The findings support previous research on how a

growth mindset can increase empowerment via students' perceived competence (e.g., Stewart et al., 2019).

The results also showed that the teacher's scaffolding was vital to overcoming difficult challenges. The tip the teacher gave the student helped him break through the wall he was facing. This is consistent with the Zone of Proximal Development, one of the major constructivist theories, defined by Vygotsky as "the distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers" (p. 86). In this study, overcoming challenges enabled the student to perceive his own competence.

In addition, the reactions of the people to whom he gave the puzzles made him realize that he wanted positive responses. His constructions in these interactions supported his mindset change, and the effects of the change continued in his subsequent classroom activities as observed by the teachers. Alen's positive reactions to the giving mindset changed his own expectations of what he could do and how he could do it. This finding is consistent with Wentzel et al.'s (2017) study, which indicated that at the individual level, relations between perceived peer expectations for prosocial behavior and effort and mastery orientation were mediated by internalized value, and the relationship between perceived emotional support from peers and effort was mediated by self-efficacy. Removing antecedents did not internalize any values in Alen but interacting people with good intention towards positive goals internalized a value to work hard to do something good to others. Regarding internalization, Vygotsky (1978, p. 57) said, "Every function in the child's cultural development appears twice: first, on the social level and, later on, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)." Indeed, to help a child internalize values, we have to start in a collaborative group.

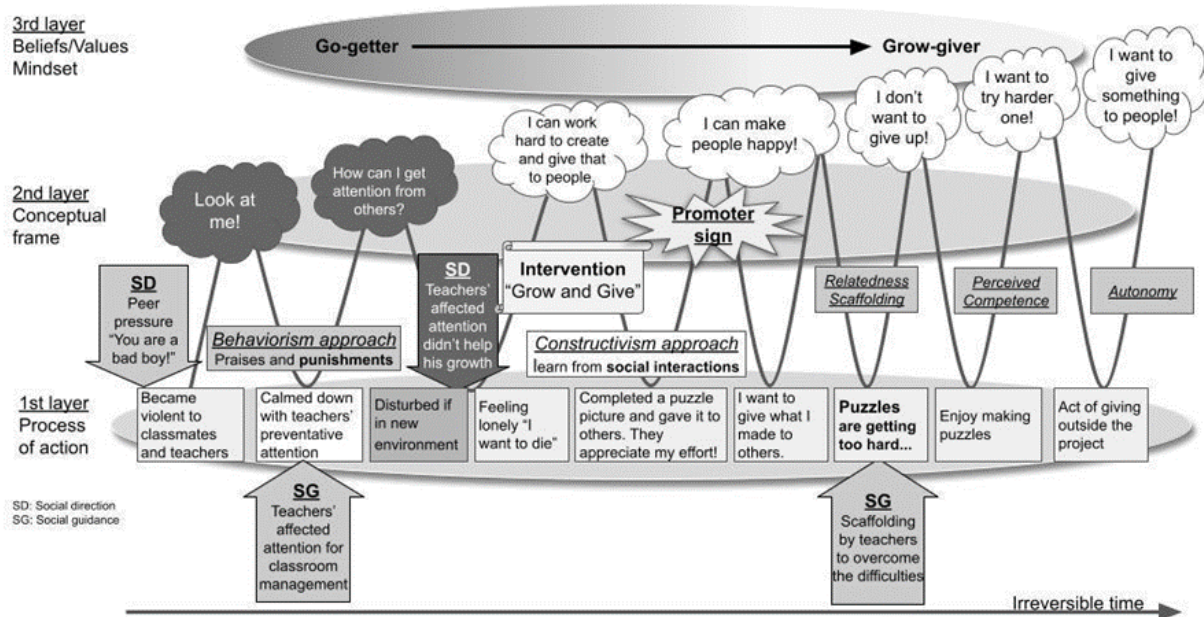
This study suggests generalizing the findings in other settings in early childhood education. To tackle problem behaviors, teachers often use strategies such as praise and punishment, prioritizing classroom management; however, this study's results suggest that when considering a child's development, teachers should first create an environment in which the child can learn from people effectively and then support them internalizing the ideas.

Moreover, the results of the mindset intervention demonstrated that not only Alen's self-regulation and behaviors but also his well-being boosted. The results were consistent with the self-determination theory (Ryan & Deci, 2000), which suggested that humans need to perceive "relatedness," "competence," and "autonomy" for psychological achievement and well-being. The scaffolding Alen received from his teachers provided him relatedness, overcoming difficulties, and achieving his goals enabled him to perceive competence, and finally, his autonomy was fostered as seen in the actions of "giving" outside the intervention and he became positive about his school life. The ultimate purpose of educational interventions is to support students' well-being, and not only decrease the target behaviors. As Figure 2 illustrates, when considering only student's behavior change, teachers' affected attention functioned positively as social guidance (SG), and class management went well. However, considering the student's social emotional learning, soon the same function of SG became social direction (SD), the disturbance. Teachers need to be aware that individual student's needs and the class management strategy could pull them into opposite directions. To balance the two different yet essential elements in the classroom, an intervention as a part of collaborative action research would be beneficial in its flexibility and term support, as this study demonstrated.

There are several limitations to this study that need to be acknowledged. First, the student learns fast but forgets fast, so the positive change does not last forever. However, we should not feel pessimistic, and that is precisely why action research is meaningful. Raising

children, you must keep trying to maintain the effect every day; that is exactly the constructivist approach. Second, mindset, motivation, emotions, and perceived competence are not easily measurable. However, the qualitative lived experience of the child and his authentic responses and actions in the classroom can tell us whether the change was reliable. In this study, one child’s psychological transformation was depicted closely, which can contribute to the larger picture of future mindset studies.

Figure 2
Student’s Mindset Transformed by Constructivism Approach



For implication for future educators in early childhood, the findings indicated that young children’s psychological development depends on social group interactions, so it is necessary to consider training teachers about the constructivist approach in addition to the existing behavioral approach. Further, educators should not forget the influence of parents and guardians, especially in early childhood. To provide an effective educational environment, we are obligated to remind parents and teachers about the power of mindset to impact children’s autonomous self-regulatory development. Hence, future researchers can contribute to this field by investigating adequate strategies for educators and guardians to work together to motivate students by fostering a positive mindset.

To summarize, this study illustrated how the constructivist approach to problem behaviors in early childhood education could be beneficial. A child’s learning in social interactions could be central in providing a way for the child to construct positive representations of their relationships with others and behave in ways that generate positive attention at school. Engaging children in a constructivist framework provides experiences that enable children to adjust their thinking and mindset about their social behaviors. Early childhood education that prepares children with an exploration of different events, cultures, and knowledge would help them actively build their mindset based on their own personal meaning.

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