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Effects of Self-Regulated Strategy Development Instruction on the Writing Performance of Students with Emotional and Behavioral Disorders in Tinsae Birhan Primary School.

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Abstract

The main objective of this study was to examine the effects of Self-Regulated Strategy Development (SRSD) instruction on the writing performance of students with Emotional and Behavioral Disorders (EBD) in Addis Ababa. Both parents' and teachers' versions of Strengths and Difficulties Questionnaires (SDQ) were used to identify students with EBD. Six students with EBD were identified and taught the SRSD story writing strategy genre as well as self-regulation strategies, in a group of two. Multiple baselines across participants' designs were implemented to record the behavior changes over time: at baseline, intervention, post-intervention, and maintenance phases. Stories were assessed for the number of essential story elements, story quality, and total written words. Visual analysis methods and Percentage of Non-Overlapping Data (PND) were used to examine the extent of the effect in each student. The findings of the study indicated that all six participants wrote stories that had, a better quality, and a greater number of words, and maintained long. Besides, the students' story writing also generalized to the personal narrative genre. Moreover, the social validity scales revealed that teachers and students found the intervention to be highly acceptable. In light of the findings, limitations, recommendations for future research are discussed.

Key Words: emotional and behavioral disorders, self-regulated strategy development, multiple baseline design, writing performance.

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Introduction

Students identified with EBD often display behaviors that can be challenging in the classroom and require social and academic support to be successful in school (Bowers, 2018). Hecker, Young, and Caldrella (2014) indicated that these students present behaviors in the classroom that are challenging and difficult to manage. Lane, Carter, Common, and Jordan (2012) also noted that because of their behavior disorder, students with EBD manifested socially aberrant externalizing and/ or internalizing behavioral patterns, which can hinder their ability to attend and participate in academic instruction. Students with EBD are the most difficult group of students to educate in today's schools and experience some of the most prevalent indicators (Mason, Kubina, Valasa, & Cramer, 2010).

According to Landrum and Sweigartn (2014) students with EBD frequently manifest disobedience, impulsivity, distraction, disorganization, acting out, and aggression. These inappropriate behaviors commonly impede academic achievements and skills attainment in the regular education setting (Harrison, Bunford, Evans, & Owens, 2013). The severe, chronic, unsuitable behaviors those students with EBD experience, hamper their academic improvement in the classroom (Kauffman & Landrum, 2018). A study by Torres, Wailehua, and Cook (2012) also reported that students with EBD are regularly challenged with twofold social-emotional and academic problems that endeavor together to have a gloomy influence on educational performance.

A study by Gage, Adamson, MacSuga-Gage and Lewis (2017) revealed that students with EBD achieved at or under the 25th percentile in general academic performance. The target students obtained significantly lower than their peers without disabilities across all subject areas and are behind their same-age general education peers in reading, writing, and mathematics (Benner, Nelson, & Epstein, 2002). Among the three subject areas, writing is the most difficult for students with EBD (Lane, 2004). A plethora of research findings revealed that students with EBD have complexity focusing and carrying out the several errands linked with writing (Cramer & Mason, 2014; Nelson, Benner, Lane, & Smith, 2004; Gage, Wilson, & Mac Suga-Gage, 2014). While reading, mathematics, and writing are all indispensable in promoting accomplishment for students in all grade levels, writing is often used to demonstrate learning across all content areas. Accordingly, students with EBD fail to learn to write sound and are at a remarkable weakness (Graham &Perin, 2007).

When we see the Ethiopian scenario, an early effort was made by Tirussew, Savolaien, Agdew and Daniel (1995) who reported that the vast majority of school-age children with disabilities in Ethiopia did not have access to education or any sort of rehabilitation services and are left out of the school system. The authors also described that even worse is the situation of children with undetected or hidden disabilities (including EBDs) who are attending classes in regular schools without any assessment and special educational support. In addition, Kumar (2011) revealed that students with EBDs in Ethiopia are generally "un-served" or "underserved". The author further suggests that educating students with EBD nowadays is not only a matter of social and political concern. It has been mandated legally through different instruments i.e. various national and international legal documents mandate educating students with this disability is a national obligation for Ethiopia also. To wind up this, so far, in Ethiopia, less attention has been dedicated to learning how to improve these students' academic skills, particularly in the area of writing. Inadequate writing skills place students with EBDs at a substantial shortcoming.

To address the academic and behavioral needs of students with EBD, many evidence-based practices have been researched. One evidence-based practice shown to be effective on the academic and behavioral intervention for students with EBD is self-regulated strategy development instruction (SRSD), (Harris & Graham, 1996; Ennis &Jolivette, 2012; Cramer & Mason, 2014).

Self-Regulated Strategy Development Instruction. Self-regulated strategy development instruction was originally developed by Graham and Harris in 1982 as an approach for students who would frequently face devastating complications with writing tasks. The underlying foundation of SRSD is to teach students a cognitive and self-regulation strategy to provide academic support to students' multiple needs and can be applied across a broad range of subjects (Harris & Graham, 1996). Besides, the instruction has helped to improve student's quality of writing, knowledge of writing, approach to writing, and self-efficacy.

The strategy has six recursive instructional stages that are devoted to addressing the affective, behavioral, and cognitive strengths and needs in each stage. The stages are: (1), Develop background knowledge; (2), Discuss it; (3), Model it; (4), Memorize it; (5), Support it; and (6), Independent performance (Harris& Graham, 1996). Recently, Harris and Graham (2016) also described that SRSD instruction for writing contains

collaborative dialogue-based, scaffold, clear and explicit genre knowledge learning, and strategies for genre-specific and general writing. The writing knowledge, for example, vocabulary and background knowledge are required to use these techniques and approaches for self-regulating method. Besides, writing behavior such as goal-setting, self-assessment, self-instruction, and self-reinforcement are inevitable features of the instruction.

The current study aimed to examine the effects of the SRSD instruction *was to examine the effects of Self-Regulated Strategy Development (SRSD) instruction on the writing performance of students with Emotional and Behavioral Disorders (EBD) in Addis Ababa.* The researcher hypothesized that (a) SRSD instruction would improve the writing performance of students with EBD in their essential story elements, quality of the story, and total words written. (b) The SRSD instruction story writing genre would generalize to the personal narrative genre and improve the personal narrative writing skills of students with EBD. And (c) teachers and students would consider the SRSD instruction to be a usable and socially valid intervention for children with EBDs.

Method

Study Design

A single-subject experimental design, particularly multiple baselines across participants design was used to assess the overall effectiveness of the intervention. A single-subject experimental design was selected since the design is better to establish and test new evidence-based practices for children with special educational needs (Horner, Carr, Halle, McGee, &Wolery, 2005). The writing performances of each participating student with EBD were measured before the intervention (baseline phase), while at the last stage of the intervention (independent performance phase), three weeks after the completion of the intervention (post-intervention phase), and the assessments were again conducted 3 weeks after the end of the post-intervention phase (maintenance phase).

Study Area

The study took place in TinsaeBirhan primary school in Addis Ababa. The school is a governmental school which is located in Kirkos sub-city of Addis Ababa. It was purposefully selected for the study because of the researcher's previous information about the school and familiarity with teachers and principals. It was easier to communicate with students' parents with the help of the teachers in addition to rapport development.

Participants

The participants of the study were six fourth-grade students attending TinsaeBirhan primary school during the 2018/19 academic year. Grade four students were purposefully selected because 9 students with EBD were found in the class., students had to meet the following criteria in order to be included in the study: (a) students are in fourth grade 2018/19 school year; (b), a current diagnosis of EBD by using SDQ; who scored between 17 and 40; (c), Children identified with EBD and scored one standard deviation below the average on total written words (TWW; Hosp, Hosp, & Howell, 2016) and the test of quality written (Harris, Graham, Mason & Friedlander, 2008) and essential story elements; (d), parental consent to participate; and (e), the student assented to participate. Finally, out of nine students with EBD the researcher selected six students with EBD their behavioral problems were high and scored low in writing performance tests.

Study Ethics:-Written informed consent was obtained from all of the participated teachers, students, and parents of the students included in this study. Besides, to maintainconfidentiality, each student was assigned a pseudonym instead of using their real name.

Table 1. *Demographic Characteristics of Participating Students with EBD*

	Student Pseudo Name	Gender	Age	Teacher's SDQ Result	Parent's SDQ Result	SDQ Mean Score	Story Writing Performances
1	Kebe	M	10	36	31	33.5	2=ESE; 1.5= QS; &26= TWW
2	Pola	M	11	30	28	29	2.5=ESE; 2=QS; &34=TWW
3	Baby	M	10	31	25	28	3= ESE; 2=QS; & 37= TWW
4	Kuki	F	10	29	25	27	2= ESE; 1=QS; & 23=TWW
5	Mimi	F	9	25	23	24	2.2=ESE;1.2=QS;22=TWW
6	Dave	M	10	32	27	29.5	2= ESE; 1=QS; 27=TWW

(ESE= Essential Story Element, QS= Quality of the Story, and TWW= Total Words Written)

General Procedures

Three school's Amharic language teachers carried out the SRSD instruction. To exercise safeguard thorough execution, each teacher used a checklist for each lesson. Students received SRSD instruction in a group of two, 4times per week for 35-40 minutes in the school's resource center. In the present study, a total of three multiple baseline design

dyads were randomly created. Thus, the presence of three multiple baseline designs endorsed another level of explanation regarding the repetition of the effects made by SRSD instruction. The present study pursued the SRSD instruction in the Amharic language.

In multiple baselines design, there is no withdrawal of the intervention; the researcher replicates the A- B comparison with several participants (Kazdin, 2011). Once the baseline score of all groups has reached a stable rate, the instruction was started for the first group whereas baseline phases were sustained for the other two groups. Explicitly, participants in groups 2 and 3 continued to react to baseline probes until participants in group 1 accomplished the criterion performance. After criterion performance was established for the participants in the first dyad, they moved into the post-instruction and maintenance phases. These procedures were repeated with each group of students.

Teachers Training: First the researcher received 6-hour training about SRSD and its implementation online. Then, the researcher trained a group of Amharic teachers at the school for 10 hours to implement the SRSD model of instruction for consecutive Saturdays. During the training, the researcher clarified the underpinning of the SRSD model and its contemporary pertinent study demonstrating its usefulness. The training was offered in Amharic language. Each trainer was provided with a notepad that included comprehensive procedures for executing all tasks and lessons. Besides, teacher trainers received training and role-play implementing SRSD until they could establish the criterion. The researcher also delivered an outline of the intervention processes for teachers. To ensure the trainees' understanding of the training, the researcher discussed with each teacher independently to ask any question about the execution of SRSD. Besides, teachers got an opportunity to exercise applying important components of the intervention whereas the researcher observed and provided feedback. Accordingly, both teachers employed the key parts of the instruction with 92 % accuracy by using a treatment fidelity checklist after the training. The teachers also obtained the treatment fidelity checklist and they followed a planned program for instruction.

Baseline Phase: The study baseline assessment was employed for five days for the first group, ten days for the second group, and fourteen days for the third group. In these phases, the students' pre-intervention response rate was conducted for writing stories (essential story elements, story quality, and total written words). The pre-intervention score for story writing was collected until stability was confirmed. During this phase,

students received as considerable time as they want to finish their story writing and they wrote a single story a day. Students were told that they would do their best independently and thus teachers would not help them.

Intervention Phase: The SRSD model of instruction particularly explicit to the execution of the POW (pick my idea, organize my notes, write and say more) +WWW, What=2, How = 2 techniques (Who is the main character? Who are the other characters? When does the story take place? Where does the story take place? What does the main character do or want to do? What do the other characters do? What happens next? What happens with the other characters? How does the story end? How does the main character feel? How do the other characters feel?).

Group one was implemented from February to March 2018 for 38 days. Group two was also implemented from March to May 2018 for 35 days and Group three was implemented from May to June 2018 for 31 days. During the intervention phase, the purpose and importance of SRSD for story writing, and self-regulation strategies were discussed with each group. Thus, the students were trained to use the model while cooperation, scaffolding, and feedback were provided. The supports were faded as participants could apply and accomplish the story writing and self-regulation techniques that were necessary to write self-sufficiently. Overall, the SRSD model of instruction had six stages; each stage took a minimum of one and a maximum of four intervention sessions to accomplish. An overview and activities of each stage were stated below.

Table 2

Stage	Action	Description
1	Develop Background Knowledge	The teacher explained the strategy and how it will help the students The teacher introduced POW and its consistent procedures The teacher also introduced the WWW+ What= 2, How= 2 mnemonic and its steps to remembering the seven-story parts
2	Discuss It	Students continued to remember the mnemonics The teacher explored student's current attitudes and beliefs All students received a folder
3	Model It	The teacher modeled using all the components of the strategy including self-regulatory behaviors The teachers introduced the self-instruction techniques including problem description, planning to write, self-evaluation and self-reinforcement
4	Memorize It	Students also applied the mnemonics that making fun activities by using flashcards and songs Students recorded the sample of self-instruction statements in their folders.
5	Support It	the teachers and students established a goal to contain all seven essential Teacher faded support as appropriate
6	Independent Performance	Students have got the opportunity to engage in using the strategy independently Students autonomously wrote stories with all seven essential parts of the story

Post- Instructional Phase:-Three weeks after the intervention phase was completed, four post- instructional story probes were conducted to assess each participant's performance on the writing strategy. Tawny and Gast (1984) recommended that at least three data points were required to establish a level of stability or trend data. Thus, in this study, four post-instructional story probes were conducted to establish stability.

Maintenance Phase:-Four maintenance story probes were administered to each participant three weeks after the completion of post-instructional probes for the first two groups, and one week after the completion of post-instructional probes for the third group to evaluate if participants sustained the intervention effect.

Independent Variable: the independent variable of this study was self-regulated strategy development instruction that contains six simple stages.

Dependent Measures

Writing Performance

In this study, writing performances are defined as the students' ability to write a story. Students' writing responses (performance) were scored for the three writing measures that incorporated the number of essential story elements, the overall holistic quality of the story, and total written words. Two MA language students unfamiliar with the design and the purpose of the study recorded all compositions. Before scoring, all identified data were removed. Then, the scores of the two examiners were averaged. The three writing measures were: -

The number of essential elements of the story:-The submitted stories were scored in ierms of 7 basic story elements. The elements comprised character (s), setting, time, what the main character needs to do (objectives), finale, and lastly character's feeling. For every story element, if the element was given a score of 1 was given; not present a score of 0 was given. Thus, the scores ranged from 0-7. Inter-rater reliability was computed by dividing the number of agreements between raters by the number of total elements. Next, to compute the percentage of agreement the amount was multiplied by 100. This study's inter-rater reliability for essential story elements was very high (.97).

Holistic Quality: - The second writing measure, quality of stories, was assessed using a holistic 7-point rating scale prepared by Harris and Graham (1996). A score of one indicated the lowest possible mark for story quality whereas a score of seven implied the maximum credible rating for story quality. The first raters, who was unfamiliar with the goals and procedure of the study, scored each baseline, intervention, post-intervention, and maintenance phase. Besides, anchor stories were acquired from a fourth-grade classroom that did not involve in this study but are from the same class. Amharic teachers nominated the best, average, and poorest quality stories depending on the scoring criteria. To confirm the inter-rater reliability of story quality scores, MA language students were trained using eight stories unconnected to the present study. First, the quality scale was clarified and discussed, and then raters practiced scoring stories while arguing changes in scores. Finally, raters discussed variances in scores and fixed encounters if the score varied by more than one point. Inter-rater reliability

was also calculated. In the current study, the inter-rater reliability of story quality was 0.81.

Total written words (TWW):-This was also calculated according to the number of words written in the story. During rating TWW, students were not punished for mistakes in context and spelling. Hosp, Hosp, and Howell (2016) defined a word as a letter or group of letters with space before and after. The general length of all stories was scored using word count. Language students scored students' TWW scores. Inter-rater reliability was calculated and changed to percentage. In this study, the inter-rater reliability of TWW was very high, 0.99.

Other Measures

Strength and Difficulties Questionnaire (SDQ; Goodman, 1997)

SDQ is a 25-item screening instrumentthat yields a total difficulty score. It has two versions (parent and teacher versions). The instrument provides scores in the following five domains: (1) Emotional symptom scale, (2) conduct problems, (3) hyperactive/ inattention, (4) peer relationship problems, and (5) pro-social behavior scale. Each can be answered as true, partially true, or not true. The score ranges from 0 to 2 points each. The total score is obtained by summing the score of all questions in all subscales except for pro-social behavior (items 01, 04, 09, 17, and 20). The SDQ score ranged from 0 to 40. The answer "not true" was given 0; "somewhat true" was given 1 and "certainly true" was given 2 except for questions 07, 11, 14, 21, and 25, which were reverse scored.

As recommended by the author, results ranged from 17-40 (inclusive) were reflected abnormal and selected. According to Servili (2014), the SDQ is validated for use at Ethiopian schools and has good reliability. In the present study, both parent and teacher versions were used to measure the existence of EBD symptoms in school and home settings. Teachers and parents of each targeted student completed the SDQ to recognize students' problem behavior status. Besides, the researcher completed the reliability of scoring for a minimum of 70 % of student data. In the current study, the reliability of the SDQ was 0.85.

Treatment Fidelity Measure (Harris, Graham, Mason, & Friedlander, 2008)

It has been reported by Harris et al. (2008) this detailed lesson checklist was prepared to measure the treatment fidelity of SRSD instructions. Each checklist included lesson

steps, teacher prompts, and student actions. The teachers completed a checklist for 100% of the lessons. Besides, the researcher completed a lesson checklist on 33% of the sessions. According to Gast and Ledford (2014) treatment fidelity data were computed by taking the number of steps completed, dividing by the total number of steps, and multiplying by 100. In this study, the reliability of the checklist was 0.96. Besides, one-third of the assessment measures used in this study were co-scored by the researcher and a trained undergraduate student.

Social Validity Measures

Children's intervention Rating Profile (CIRP; pre and post, Witt & Elliot, 1985): was used to assess the acceptability of the SRSD intervention. The researcher administered the paper-pencil, seven-question survey to students. The instrument measured the student attitudes on the social validity of an intervention by asking students to rank statements on a 6-point Likert scale (1=I do not agree to 6= agree). Scores on individual items are added for an overall score, ranging from 7 to 42, with higher scores indicating higher acceptability.

Intervention Rating Profile-15 (IRP-15; pre and post, Witt & Elliot, 1985): this is an instrument developed to assess teachers' social validity information about the intervention that holds 15 items on a 6-point Likert scale a score of 1 indicating strongly disagree and a score of 6 indicating strongly agree, scores ranged from 15-90.

In the present study, social validity was managed from two viewpoints before and after the intervention. First, teachers completed the Intervention Rating Profile- 15 (IRP-15; Witt & Elliott, 1985) before the employment of the treatment, but after a clarification of the purpose and the intention of the intervention. Then the students filled the Child Intervention Rating Profile (CIRP; Witt & Elliot, 1985) earlier the implementation of the writing instruction, but after a description of the SRSD with peer support intervention and intention of the study. After the accomplishment of the intervention, teachers and students again filled the IRP-15 and CIRP rating scales, respectively.

Data Analysis Methods

The following data analysis methods were used to assess the effectiveness of the intervention. First, visual inspection techniques were used to analyze the number of words, essential elements of story parts, and quality of the story data. Means and standard deviations were computed to analyze the mean changes between baseline,

intervention, post-intervention, and maintenance phases in all writing measures to determine the level of the data. Second, the Percentage of Non-Overlapping Data (PND; Parker, Hagan-Burke, &Vannest, 2007) was used to calculate the effect size. PND is determined from the minimum number of data points that need to be removed from a baseline and/or treatment phase to eliminate overlap.

Results

Number of Essential Story Elements

The first writing performance, numbers of essential story elements, showed an overall increase after the intervention. Before the intervention, Kebe and Pola, who were in group 1, completed five baseline story elements. Kebe wrote a mean of 2.4 (SD=0.49) the score ranging from 2 to 3. Pola included a mean of 2.6 (SD=0.49) essential elements in his stories that ranged from 2 to 3 at the baseline phase. The result of the first group showed a stable and low level of performance at this phase. Whereas, Baby and Kuki (who were in group 2), completed 10 baseline story elements with low variability of data points. Baby scored a mean of 3.4 (SD= 0.8) the score ranging from 3 to 4 while Kuki wrote a mean of 2.4 (SD= 0.8). Kuki's baseline elements ranged from 2 to 3.

Table 3 Number of Essential Story Elements across Phases

	Baseline		**Intervention**		**Post-Intervention**		**Maintenance**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Kebe	2.4	.49	5.4	.8	5.25	.43	5	.7
Pola	2.6	.49	6.6	.49	5.75	.43	5.5	.5
Baby	3.4	.8	6.75	.33	6	0	5.75	.43
Kuki	2.4	.8	5	1	4.75	.82	4.5	.5
Mimi	2.4	.49	6.6	.48	6.5	.5	6.25	.43
Dave	2/5	.73	6	.63	5.75	.43	5.5	.5

Mimi and Dave, who were in group three, completed 14 baseline story elements. Mimi wrote a mean of 2.4 (SD= 0.49). Mimi baseline score ranging from 2 to 3. The result indicated that her baseline score remained low and stable. While Dave wrote a mean of 2.5 (SD=0.73) with the score ranging from 2 to 4. Overall, the baseline score of all students indicated that their score is low and minimum variability and very low magnitude (flat trend) which is recommendable to start the intervention. The pattern

was stable within this range. It indicates that the data points were very close to the trend line, so the data pattern demonstrated low variability. Generally, the baseline data patterns showed that there was no change in trend, so treatment implementation was recommended.

During the intervention phase, Kebe scored a mean of 5.4 (SD= 0.8) the score ranged from 4 to 6 with a level change. Compared to the baseline phase Kebe increased his essential story element result by 125% at the intervention phase. Pola also gained a mean of 6.6 (SD=0.49) ranging from 6 to 7. Pola improved his number of essential story element scores by 154% at the intervention phase over the baseline phase. Both Kebe and Pola had a 100% percentage of non-overlap data, which demonstrates a large intervention effect. There is no overlap between the phases (baseline and intervention), meaning that the lowest data point from the intervention phase is still higher than the highest data point from the baseline phase.

Baby scored an average of 6.75 (SD=0.33) the score ranging from 6 to 7. This showed a 98% increase rate compared to the baseline phase. Kuki gained a mean of 5 (SD= 1) ranging from 3 to 6. Kuki also increased her number of essential story element scores by 108% at the intervention phase compared to the baseline score. Similar to group 1, Baby had 100% PND story elements from intervention to baseline and this is considered a strong effect. Kuki had a 75% PND result at the intervention phase.

At this phase, Mimi also gained a mean of 6.6 (SD= 0.48) the score ranged from 6 to 7. That was considered a 175% increase rate compared to the baseline score. Dave also included more essential story elements in his story at this phase than the baseline. He scored an average of 6 (SD= 0.63) that has a 150% increase level compared to the baseline. Besides, the PND analysis between the baseline and intervention phase of both students in group three scored as PND=100%. The 100% PND indicated there was no overlap between the two phases and the maximum possible effect of the intervention.

SRSD instruction in story writing had a positive effect on included story elements in students' post-intervention stories. Kebe scored a mean of 5.25 (SD=0.43) the score ranging from 5 to 6. Pola also gained a mean of 5.75 (SD=0.43) ranging from 5 to 6 (range = 1). Kebe and Pola exhibited an average increase of 119% and 112% respectively at the post-intervention phase compared to the baseline. Baby scored a mean of 6 (SD=0) with 0 variabilities. It has also a 76.5% increased level of the number of essential story elements at the post-intervention phase compared to the baseline phase. Kuki also

included more essential story elements a mean of 4.75(SD=0.82) her score ranged from 4 to 6 (range = 2). . She increased her number of essential story elements by 98% at the post-intervention phase compared to the baseline condition.

In the same vein, Mimi's essential story elements average score during post-intervention was 6.5 (SD= 0. 5) the score ranging from 6 to 7, which was considered a 170% increase rate compared to the baseline phase. Dave also included more essential story elements in his story in the post-intervention than baseline phase. He scored 5.75 (SD=0.43) with low variability. Compared to the baseline Dave increased his number of essential elements by130% at this phase. Overall, the result showed that all six students included more essential story elements in the post-intervention phase than the baseline phase. All six students gained 100% PND. This indicated that the intervention effect was maintained after the completion of the intervention with no overlap between the two phases.

During the maintenance phase, Kebe obtained an average score of 5 (SD=0.7) ranging from4 to 6, which was considered a 108% increase level compared to the baseline phase. Pola earned an average score of 5.5 (SD= 0.5) the scores ranging from5 to 6. Compared to the baseline phase Pola increased his number of essential story elements score by 112% at the maintenance phase. Baby included more essential story elements in the maintenance phase than the baseline phase. He earned a mean of 5.75(SD= 0.43) ranging from 5 to 6; this showed a 69% increase level compared to his baseline score. Kuki also scored an average of 4.5 (SD=0.5) the score ranged from 4 to 5. She increased her number of essential story elementsby88% at the maintenance phase compared to the baseline phase score.

Both students in group 3 also maintained their number of essential story element performances during the maintenance phase. For example, Mimi scored an average score of 6.25 (SD= 0.43) scores ranging from 6 to 7. Compared to the baseline condition she increased her essential story element by 160%. Dave also reached a mean of 5.5 (SD= 0.5) with ranged from 5 to 6 with low variability. That has also a 120 % increasing level over the baseline phase.

Overall, the result of the essential story elements of all six students showed high. That indicated the intervention effect maintained long. Besides, the PND analysis between the baseline and maintenance phase of all six students showed there was no overlap between the two phases (PND=100%). This means the lowest data point from the

maintenance data point still higher than the highest data point from the baseline phase.

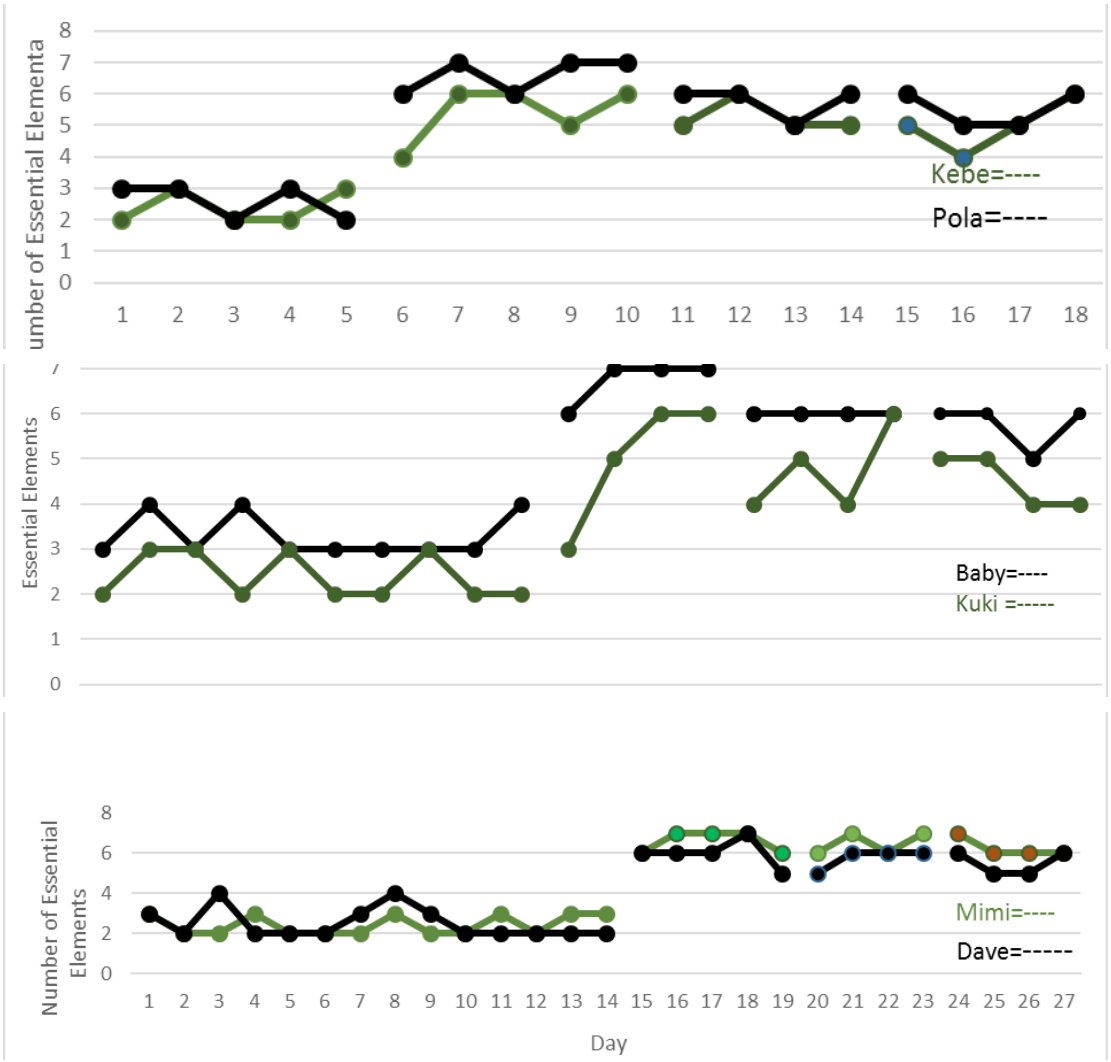


Figure 1: Participants' Essential Story Elements

Quality of the Story

Table 4: Students Quality of the Story across Phases

	Baseline		Intervention		Post-Intervention		Maintenance	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Kebe	1.6	.49	4.6	1	4.5	.5	4.5	.5
Pola	2.2	.4	5.4	.8	5.25	.43	5	0
Baby	3	.57	6.75	.43	5.25	.43	5	.5
Kuki	1.8	.32	4.75	.43	4.25	.33	4	0
Mimi	2	.59	5.4	.8	5.4	.7	5.25	.43
Dave	1.2	.45	5.2	.4	4.25	1.25	4.25	.43

During the baseline phase, all six students wrote lower-quality stories out of 7 possible points. Kebegainedan average score of 1.6 (SD = 0.49) ranging from 1 to 2. Pola reached a mean of 2.2 (SD= 0.4) the scores ranged from 2 to 3. Baby scored a mean of 3 (SD=0.57) ranging2 to 4. Whereas, Kuki obtained an average score of 1.8 (SD=0.32) ranging from 1 to 2. Similarly, Mimi earned a mean of 2 (SD= 0.59) ranging from 1 to 3. Dave also gained a low and stable data point at this stage. He obtained a mean of 1.2 (SD= 0.45) with a score ranging from 1 to 2. Overall, the visual analysis result of the quality of story writing for all six students showed low variability of writing performance. This indicated that the data points were very closer to the trend line.

During the intervention phase, the overall quality of the stories radically improved compared to the baseline phase. Kebe reached a mean of 4.6 (SD= 1) the score ranging from 3 to 6. Compared to the baseline phase Kebe increased his story quality by 187% at the intervention phase. Pola gained an average score of 5.4 (SD=0.8) ranging from 5 to 6, this was considered a 164% increase level compared to the baseline phase. Both Kebe and Pola gained 100% PND at this phase. This demonstrated a large intervention effect.

Similarly, Baby and Kuki also enhanced their quality of story writing at the intervention phase. Baby gained an average of 6.75 (SD=0.43) quality story score ranging from 6 to 7. This was a 113.3% increase level at the intervention phase compared to the baseline phase. Kuki also wrote a mean 4.75 (SD=0.43) quality story at the intervention phase. This has also a 155% improved rate compared to the baseline phase. Both Baby and Kuki also had 100% PND. Mimi she was in group 3 gained an average of 5.4 (SD=0.8) quality story score, the score ranging from 4 to 6. That has also a 150% increasing level compared to the baseline phase. Dave earned a mean quality story score of 5.2

(SD= 0.4) with a score ranging from 5 to 6. Compared to the baseline phase Dave demonstrated a 333% increase rate at the intervention phase. Besides, both students gained a PND of 100%, this PND result indicated the maximum possible effect of the intervention.

The overall quality of all students' achievements remained at the post-intervention phase. But it declined slightly quality in the intervention phase. However, all of the stories wrote in the post-intervention phase were higher in quality than the baseline phase. Kebe earned a mean of 4.5 (SD= 0.5) ranging from 4 to 5 with variability of 1, this is considered a 181% improved level compared to the baseline phase. Pola obtained a mean of 5.25 (SD=0.43) a score ranging from5 6 at the post-intervention phase. This also a 139% improved level compared to the baseline condition. In the same vein, Baby earned a mean of 5.25 (SD=0.43) ranging from 5 to 6. Thus, Baby gained a 75% increased rate at the post-intervention phase compared to the baseline phase. Kuki also improved her quality of story writing during the post-intervention phase by reached a mean of 4.25 (SD=0.33) a score ranging from 3 to 4. This showed a 136 % increase level at the intervention phase over the baseline phase.

Mimi obtained a mean quality score of 5.4 (SD = 0.70) the score ranging from 4 to 6 at this phase, which has a 150% improved rate compared to the baseline phase. Dave also displayed a low variability of score and average of 4.25 (SD= 1.25) the score ranging from 4 to 5. The mean level of Dave's quality story result post-intervention was 254% higher than the baseline phase. All six participants had 100% PND at the post-intervention phase, which showed a strong intervention effect after the intervention effect.

During the maintenance phase, all six students highly maintained their quality story score. Kebe earned an average score of 4.5(SD=0.5) ranging from 4 to 5. Compared to the baseline phase Kebe increased his maintenance phase story quality by 181%. Pola also gained a mean score of 5 (SD=0). This showed a 127% increase level compared to his baseline quality story. Baby scored an average of 5 (SD=0.5) and this is a 66% increase compared to his baseline phase. Kuki also got a mean of 4 (SD= 0). Compared to the baseline phase quality score Kuki increased by 122% at the maintenance phase. In the same truck, Mimi scored an average of 5.25 (SD= 0.43). That showed a 162% increase rate compared to the baseline condition. Dave also gained a mean of 4.25 (SD= 0.43) ranging from 4 to 5. Compared to the baseline phase this has a 254% increase. All participants had 100% PND which indicated a large intervention effect that was maintained long.

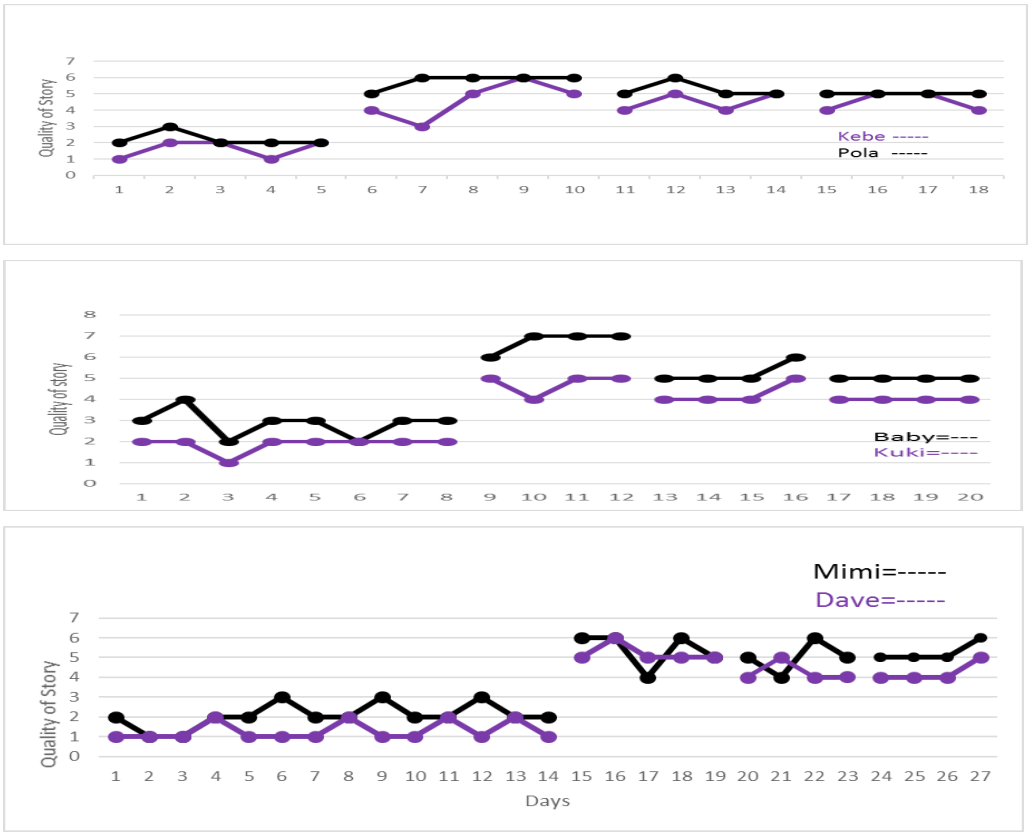


Figure 2: Participants' quality of the story

Total Written Words (TWW)

Table 5: Students' Total Written Words across Phases

	Baseline		**Intervention**		**Post-Intervention**		**Maintenance**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Kebe	32.8	2.78	60	7.12	55	7.64	54.5	3.83
Pola	41.2	2.13	79.2	6.14	72.5	4	67.7	4.16
Baby	41	2	76	9.3	70.2	2.1	70	3.3
Kuki	34	1.63	47.6	7.44	46	2.2	43.7	2.1
Mimi	32.7	2.7	69.6	9.2	65.2	9.2	59.2	5.9
Dave	26.7	3.4	57	5.2	51.2	3.4	49.5	7.3

All participants ended gain in the total number of written words from baseline to intervention, post-intervention, and maintenance phases. Before the intervention, none

of the participants wrote a long story. No one exceeded 44 words. Kebe wrote a mean of 32.8 (SD=2.78) ranging from 29 to 36 words at the baseline with variability of 7. The result showed a stable and small level of performance at the baseline phase. Pola also wrote a mean of 41.2 (SD=2.13) the score ranged from 38 to 44 words. Similarly, Baby and Kuki also wrote a short story at baseline. Baby wrote a mean of 41 (SD=2) the score ranged from 38 to 44 words at the baseline phase. Kuki wrote a mean of 34 (SD=1.63) ranging from 32 to 36 words at the baseline phase. Likewise, Mimi wrote a mean of 32.7 (SD= 2.7) words ranging from 28 to 37 with a low magnitude slope. Dave also wrote an average of 26.7 (SD= 3.4) words long which ranging from 19 to 32 at the baseline phase. The visual analysis indicated that all six students displayed low performance of TWW and low variability before the intervention.

During the intervention phase, all six students' performance on TWW increased compared to the baseline phase. Kebe wrote a mean of 60 (SD=7.12) ranging from 49 to 69 with a range of 20 words. This was 83% words long compared to the baseline phase. Pola also wrote a mean of 79.2 (SD=6.14) the score ranged from 70 to 86 words and this is considered 92.2% words long at the intervention phase compared to the baseline condition. Both Kebe and Pola had 100% non-overlapping data for TWW. Correspondingly, Baby, and Kukis' performance on TWW increased from to baseline phase to the intervention phase. Baby wrote a mean of 76 (SD=9.3) ranging from 61 to 86 words. Compared to the baseline phase, Baby wrote stories that showed 85.3% words long at the maintenance phase. While Kuki wrote a mean of 47.6 (SD=7.44) the score ranging from 36 to 56 words. This is also considered 40% words long at the intervention phase compared to the baseline phase. Both Baby and Kuki had 100% non-overlapping data for TWW.

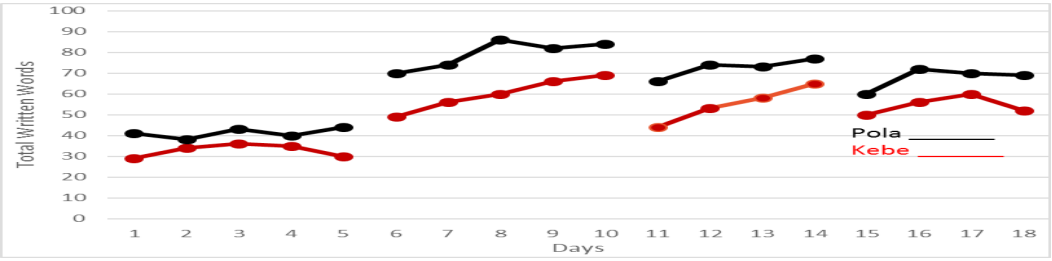
In the same vein, Mimi wrote a mean of 69.6 (SD= 9.2) the score ranging from 54 to 80 words with a variability of 26. This showed a 113% increase level over the baseline phase. Finally, Dave wrote a mean of 57 (SD= 5.2) ranging from 49 to 64 (range = 15). This has also 112% words long at the intervention phase compared to the baseline phase. Besides, the PND result between the baseline and intervention phase showed there was no overlap between the two phases, both students in group three also gained a PND of 100%. This indicated a maximum intervention effect.

During the post-intervention phase, Kebe wrote a mean of 55(SD=7.64) the score ranged from 44 to 65. Compared to the baseline condition, Kebe wrote 68% words long

in the post-intervention phase. Polaalso scored a mean of 72.5 (SD=4) ranging from 66 to77 words. The intervention score of Pola showed 87.3% words long compared to the baseline phase. In the same vein, Baby and Kuki who were in group 2 also showed increased performance on TWW from baseline to post-intervention phase. Baby wrote a mean of 70.25(SD= 2.1) the score ranging from 67 to 73 words; this showed 71% words long compared to the baseline phase. Kuki also wrote a mean of 46(SD=2.23) ranging from 43 to 49 words. This also exhibited 35% words long at the post-intervention phase compared to the baseline phase.Mimi wrote a mean of 65.2 (SD= 9.2) words ranging from 53 to 69. This has also 91% words long over the baseline phase. Dave also wrote a mean of 51.2 (SD= 3.4) the score ranged from 48 to 55 words. This also showed 99% words long compared to the baseline phase. All six students gained a PND of 100%.

During the maintenance stage, all six participants maintained meaningful gains on their total word written. Kebe wrote a mean of 54.5 (SD=3.83) the score ranged from 50 to 60 words at the maintenance phase. Kebe's maintenance result showed 66% words long compared to the baseline condition. Pola also wrote a mean of 67.75 (SD=4.16) ranging from 60 to 72 words at this phase. This was also 64.5% words long as compared to the baseline phase. Whereas, Baby wrote a mean of 70 (SD=3.39) with the score ranging from 65 to 74 words. Compared to the baseline phase, Baby's maintenance phase showed a 70.3% words long. Kuki also reached a mean of 43.75 (SD=2.1) ranging from 41 to 47 words at the maintenance phase. Kuki's maintenance result showed 29% words long compared to the baseline phase.

Mimi wrote an average of 59.2 (SD= 5.97) words ranging from 52 to 68. When compared to the baseline phase she increased an 85% words long. Lastly, Dave wrote a mean of 49.5 (SD= 7.3) words ranging from 39 to 59. When compared to the baseline phase Dave's maintenance phase showed 81 % words long. The PND analysis of all six students (PND=100%) revealed the intervention effect was maintained long.



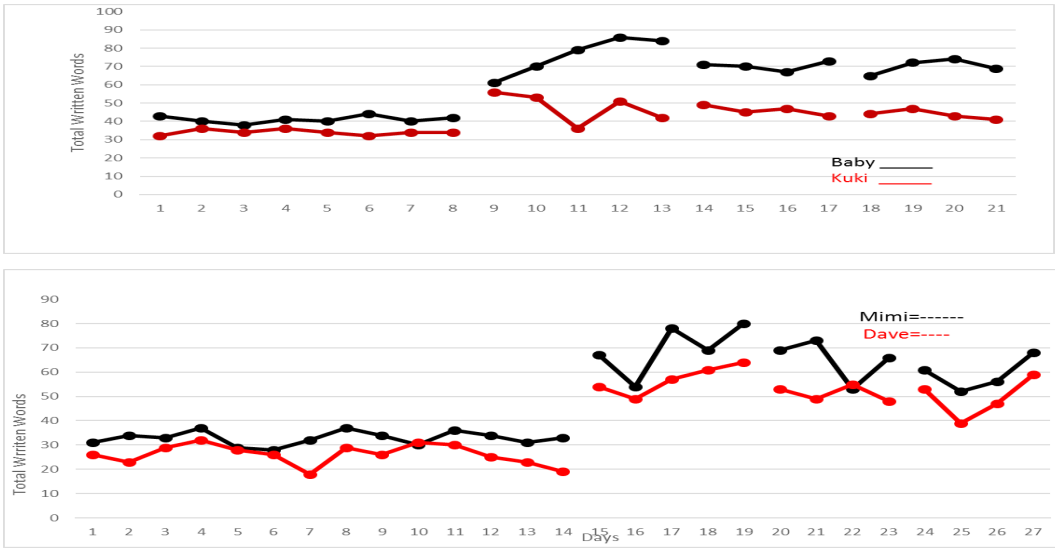


Figure 3: Participants' total words written

Generalization (Personal Narratives)

To evaluate the effects of SRSD story-writing instruction generalized to another genre, the students wrote a personal narrative genre before and after the intervention.

Essential Elements

The first personal narrative writing performance number of essential elements had a positive effect on participants' inclusion of elements in personal narratives during the post-intervention. During the baseline, both Kebe and Pola scored three, with seven as the highest possible score. While Baby and Kuki, who were in-group 2 scored 3 and 2 respectively. Similarly, Mimi and Dave scored 2 before the intervention. Compared to the baseline all six students increased the number of essential elements during post-intervention. Kebe, Pola, and Baby improved the number of essential elements of their narratives from 3 at baseline to 6 at post-intervention. Mimi increased her narrative essential elements from 2 at the baseline to 6 at post-intervention. Meanwhile, Kuki increased her personal narratives 2 at baseline to 4 at post-intervention. Finally, Dave scored 2 before the intervention and scored 5 after the intervention.

Quality

All participants' overall quality of personal narratives increased post-instruction. Kebe improved his quality score from 2 at the baseline to 4during the post-intervention. Pola increased his quality of personal narratives from 3 at baseline to 5 at post-intervention.

Baby increased his quality of personal narratives from 3 at baseline to 6 at post-intervention. Kuki obtained the lowest quality of her personal narratives 1 at baseline to 3 at post-intervention. Mimi also improved her narratives by scored 2 at baseline to 5 at post-intervention. Dave scored 1 personal narrative quality score at baseline to 4 at the post-intervention phase.

Total Written Words

All six participants improved in the TWW from baseline to post-intervention on the generalization probe (personal narratives). During baseline Kebe and Polawrote 15 and 21words long respectively. Baby's personal narratives reached 19 words long before the intervention. Kuki wrote 12 words long at the baseline phase. Mimi and Dave wrote their narratives 23 and 15 words long before the intervention. During post-intervention, Kebe's performance on TWW increased compared to the baseline. Kebe wrote 15 words in the baseline to 31 words post-intervention, which had 106.6% words longer. While Pola's narratives at post-intervention were 36 words long, it was also 71.4% words longer than the baseline. Besides, Baby's narrative at post-intervention was 35 words long. Compared to the baseline Baby increased his number of words by 94.4 percentages. Kuki also increased her number of words written 12 at baseline to 21 at post-intervention phase, which also 75% words long compared to the baseline. Mimi's narrative score at post-intervention was 41, this is considered 78% words long over the baseline result. Finally, Dave's personal narrative reached 29 during the post-intervention phase. This is also 93% words long compared to the baseline phase. Overall, all six participants gained remained at post-intervention on TWW.

Social Validity

Students rated the SRSD intervention before the intervention (after understanding the intervention goals, procedures, and expected outcomes) and after the intervention. Prior to the intervention, the six participants' scores were ranging from a low of 24 to a high of 32, with 42 as the highest possible score. Kebe scored 25 before the intervention and his score reached 33 after the SRSD instruction. Pola also earned 28 at the baseline phase to 35 at the post-intervention phase. Baby obtained 32 (the highest point) before the intervention to 37 after the completion of the intervention. Kuki scored 26 at the baseline to her social validity score reached 33 at the post-intervention phase. Similarly, Mimi obtained 29 before the intervention and her score reached 38(the highest point) at the post-intervention phase. Dave also scored 24 at the baseline phase to 33 at the post-

intervention phase. Overall, the intervention exceeded all students' initial expectations on SRSD instruction.

Teachers also rated the IRP.15. All of the teachers T1 (who taught group1) and T2 (who taught group2) and T3 (who taught group 3) indicated that the intervention exceeded their expectations. Before the intervention, T1 scored 63, T2 scored 64, and T3 67, with 90 as the highest possible score. After the intervention, the three teachers (T1, T2 &T3) reported higher social validity scores.T2 post-intervention rating was very high (86) the score was higher than the pre-intervention total score of 64. TheT2 rating increased by 22 points while T1 post-intervention rating was also high (80) and the rating increased by 17 compared to the pre-intervention rating score. T3 also scored 82 and compared to the baseline result it increased by 15 points. Generally, all students and teachers found the SRSD procedures to be helpful and socially valid.

Discussion

All the six participants wrote stories independently during baseline, intervention, post-intervention, and maintenance phases. To evaluate changes in students' writing performance, stories were assessed for completeness (essential story element) length (total number of words written), overall quality (quality of the story). The findings indicated a functional relation between SRSD instruction and improvement in students' ability to write a story. The result produced positive effects on students' writing skills across multiple measures. The length of the stories, as well as the quality of the stories, increased after the instruction. The results of the present study are consistent with those of previous researches reflecting the benefit of SRSD instruction for students with EBD writing performance. For example, a study conducted by Adkins (2005) assessed both the quality and quantity of story writing among second and third-grade students with EBD. The results from the study revealed that the essential elements of the story, the total number of written words, and the overall quality of the stories did improve after receiving instruction using the SRSD instruction for the story writing genre. Another study by Zumbrunn (2010) investigated the effects of SRSD instruction for students with EBD. The result revealed that students with EBD included more essential story elements, longer stories, and qualitatively better stories after the instruction. Besides, all students maintained their writing performance at the follow-up phase.

Harris et al. (2008) confirmed that SRSD instruction can be generalized to other settings and genres as well as sustained a long time once taught to mastery. All six students were

administered a generalization writing probe, personal narratives, at the baseline phase and after the post-intervention phase was completed. The current study generalization probe result demonstrated SRSD instruction for story writing has a positive effect to generalize personal narratives genre. Hence, all students wrote their personal narratives which included additional essential elements, better quality, and more words from baseline to after the post-intervention phase.

Overall, students and teachers rated the goals, processes, and results usefully before the intervention and following intervention completion. The intervention surpassed students' and teachers' preliminary expectations. While previous research by, Gast and Ledford (2014) suggest that if an intervention is considered acceptable, a person is more likely to use, be motivated, and continue to use an intervention. Therefore, the current study demonstrated that social validity scores were high, demonstrating overall students' and teachers' satisfaction with the SRSD instruction.

Conclusion

The study examined the effect of the SRSD instruction *on the writing performance of students with Emotional and Behavioral Disorders (EBD) in Addis Ababa.* . The result suggests that students with EBD learned SRSD story writing genre and self-regulation strategies and applied them. The result of this study demonstrated that SRSD intervention was found to be effective and suitable for the writing performance of fourth-grade students with EBD.

Limitations and Recommendation for Future Research

Although this study shows promise in that it was the first to empirically test the effectiveness of SRSD instruction *on the writing performance of students with Emotional and Behavioral Disorders (EBD)* in Ethiopia and produced encouraging effects in that group, some limitations should be acknowledged. First, only students identified as EBDs were included as participants. The effects of SRSD on the writing performance of students with other types of disability should be considered. The small sample size is another limitation. In this current study, only six students with EBD were selected as participants. Because of the time constrictions of the study, it was not possible to include more than 6 students. Future research is needed to determine the effectiveness of SRSD instruction for students with EBD in a large sample which is not addressed in this study.

In addition, maintenance data were not collected consistently across the three groups. As mentioned earlier, the maintenance data were collected at (6 weeks for the first group, and 5 weeks for the second group, and 4 weeks for the third group) after the completion of the intervention. Due to the school year ending, it was not possible to collect equal periods of maintenance probe for both groups. It is not questionable that a long-term maintenance probe is beneficial in investigating the sustainability of SRSD instruction with peer support intervention results. To examine the long-term effects of the intervention for students with EBD, future researches should include more maintenance probes over an extended period. Moreover, we recommend other researchers analyze the effects of SRSD on different behaviors (reading and math skills) with grade four students.

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