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Effectiveness of teaching story-writing strategy to students with intellectual disabilities and their non-disabled peers

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ABSTRACT

Background: This study aimed to be the first to assess the effectiveness of teaching a particular peer revision strategy (POW + WWW, What = 2, How = 2 + RPRS), on the story-writing abilities of students with intellectual disabilities (ID) and their non-disabled peers.

Method: A multiple-probe technique was used. Participants included three students with mild ID and 61 non-disabled peers enrolled in inclusive classrooms. The instruction for all subjects occurred in the classroom. Maintenance probes were conducted for 3–19 weeks after the study.

Results: The length, elements, and quality of all participants' stories improved. Students maintained the skills acquired and transferred them to personal narrative-writing. Participants' feedback confirmed that they found the strategy effective.

Conclusion: The strategies improved the writing skills of both students with ID and their non-disabled peers. This significant finding indicated that students with ID can benefit from strategy instruction for skillsets with complex cognitive processes, such as writing.

KEYWORDS

Intellectual disability; POW + WWW, What=2, How=2; reciprocal peer revision; self-regulated strategy development; story-writing

In Turkey, after students acquire reading and writing skills, the first type of text that they are taught to write is a story. However, research has shown that students often have difficulty with story-writing and cannot always accomplish curriculum objectives (e.g., Ari, 2010). Therefore, after deciding that Self-Regulation Strategy Development (SRSD) was the most effective model for writing instruction, we chose the story as the type of text to be the focus of our study. Finally, to incorporate editing and revising sub-processes and teach writing skills using a holistic approach, we combined a particular peer revision strategy: POW + WWW, What = 2, How = 2 strategy, with reciprocal peer revision strategy (RPRS), which is usually used for writing persuasive essays (MacArthur, Graham, & Harris, 2004).

Self-regulation strategy development (SRSD)

Self-Regulation Strategy Development (SRSD) includes instruction in cognitive and metacognitive strategies and is one of the most effective approaches for teaching written expression. This model has been used in more than 100 studies on writing and reading instruction since 1985 (cf. Harris & Graham, 2017). Initially developed by Harris and Graham (1992) for students with learning disabilities (LD), SRSD combines strategy instruction with self-regulation skills to improve

students' academic performances. The stages of SRSD instruction outlined by Harris and Graham are: "Develop background knowledge," "Discuss it," "Model it," "Memorise it," "Support it," and "Independent performance" (ibid., 1992). In the SRSD model, the instruction stages are criterion-based (Harris & Graham, 2013), and a student is expected to fulfil pre-determined criteria before passing to the next stage of instruction.

POW + WWW, What = 2, How = 2

When we examined the literature on story-writing instruction using the SRSD approach, we saw that the POW + WWW, What = 2, How = 2 strategy was the most frequently studied. For example, Lushen, Kim, and Reid (2012) instructed this strategy to three struggling writers in a 4th grade class using a multiple-baseline design across participants. After instruction, on average, the struggling writers' stories became more complete, qualitatively better, and longer. The stages of the POW strategy are represented in the letters of the mnemonic as follows: (1) **P**ick my ideas (i.e., find a subject), (2) **O**rganise my notes (i.e., use a "planning paper" to take and organise notes while brainstorming), and (3) **W**rite and say more (i.e., write a story using the planning paper). The second mnemonic "WWW, What = 2, How = 2" stands for: **W**ho are the main characters? **W**hen

does the story take place? Where does the story take place? What do the main characters want to do? What happens when the main characters try to do it? How does the story end? How do the main characters feel? The WWW, What = 2, How = 2 strategy includes story elements and aims to enable students to plan their stories during the second stage of POW (“Organise my notes”). Many studies have taught this strategy to students to improve their story-writing skills and have found that students were able to apply them to writing personal narratives (i.e., Saddler, Moran, Graham, & Harris, 2004).

Although many studies have demonstrated the effectiveness of the POW + WWW, What = 2, How = 2 story-writing strategy for students who struggle with writing (e.g., Graham, Harris, & Mason, 2005), the implications of this strategy’s effectiveness in improving the writing skills of students with intellectual disabilities (ID) have not been assessed. Previous research has focused largely on the improvement of the mechanics of writing for students with ID (Katims, 2001). For the present study, we chose to use the POW + WWW, What = 2, How = 2 strategy for two reasons. Firstly, since students with ID have difficulties in the recalling, planning, and organising stages (Meltzer & Krishnan, 2007), we theorised that mnemonics could help them overcome these difficulties. Secondly, the SRSD approach has been demonstrated as effective in previous studies involving students with ID.

Reciprocal peer revision strategy (RPRS)

In the SRSD approach, either planning and writing or revising strategies are usually taught (e.g., Saddler & Asaro, 2007). In two previous studies on writing strategy instruction conducted with secondary school students with ID, planning, organising, writing, editing, and revising were instructed in a holistic manner based on the stages of SRSD (Guzel-Ozmen, 2006; Ozmen, Gurel-Selimoglu, & Simsek, 2015). Their results showed that this procedure can be effective for instructing writing skills to students with ID for two distinct kinds of texts: stories (Ozmen et al., 2015) and expository texts (Guzel-Ozmen, 2006). By the end of the instruction sessions in these two studies, students gained knowledge of the writing strategy and their writing improved.

Putting it all together: POW + WWW, What = 2, How = 2 + RPRS

To incorporate editing and revising sub-processes and teach story-writing skills (rather than expository writing) using a holistic approach, we combined the POW + WWW, What = 2, How = 2 strategy with RPRS. We

applied this modification for two reasons: first, to provide support for students with ID who experience difficulty with metacognitive strategies, like self-recording and self-assessment, especially during the revising and editing sub-processes (Arabsolghar & Elkins, 2000); and second, because peer support is an instructional arrangement in which a student with ID and his or her peers study together in inclusive classrooms (Nagro, Hooks, Fraser, & Cornelius, 2016).

This study aimed to be the first to assess the effectiveness of teaching POW + WWW, What = 2, How = 2 + RPRS on the story-writing abilities of students with ID and their non-disabled peers. The authors also focused on evaluating the maintenance of these abilities and applied them to personal narratives.

Methods

Participants and setting

Three female students with ID from three separate classes and their non-disabled classmates struggling with writing were selected as participants. All three participants with ID were receiving supplementary education from a private school for special education four hours per week. One student was a 10-year-old 5th grader, while the other two were 10-year-old 4th graders. The students’ WISC-R Turkish version full scale IQ scores were 62, 61, and 63, respectively (for the “Turkish version” of the WISC-R, see Savasir & Sahin [1994]). This test has verbal and performance intelligence subtests. Guidance and research centres tested and graded the participants of this study on these subtests.

Research was conducted in two public schools in Ankara, the capital city of Turkey, with students enrolled in 4th (primary school) and 5th grade (secondary school) inclusive programs in class after obtaining consent from parents, classroom teachers, and school administration. This study adhered to ethical guidelines for the use of human participants.

Selection criteria

The following criteria were used to select candidates from among the students with ID: (a) minimum and maximum score of 3 and 6 on the story elements rubric (Ozmen et al., 2015) – see scoring procedures for details; and (b) ability to read stories in the 4th or 5th grade Turkish lecture books fluently (90–95% accuracy). Reading fluency was assessed by calculating the correctly read words in a minute (Mercer & Mercer, 2005). We applied these criteria to the 53 students with ID who had been following the 4th and 5th grades of the inclusive

program, and 20 fulfilled the reading criterion. We then assessed their writing performance. Sixteen students met the writing criteria; however, either their classroom teachers or the school's administration refused participation for 12 of these students. Therefore, three of the remaining four students were randomly selected to participate in the study. The oldest student selected read 95% of the criterion texts fluently, and the story she wrote scored 4 on the story elements rubric. The younger two selected students read 90% of the criterion texts fluently, and both their stories scored 3 on the story elements rubric. The fourth student served as a substitute.

The non-disabled participants struggling with writing were classmates of the students with ID and were selected using the following criteria: (a) having no disability and (b) having written stories that scored a minimum of 3 and a maximum of 8 on the story elements rubric. The classes of the three participants with ID contained 30, 28, and 31 students. In these classes, 19, 20, and 22 non-disabled students met the study's selection criteria. Students who exceeded the reading and writing criteria were also present during all instructional sessions. They participated; however, they were not included in our scoring.

Experimental design

To ensure that the results of this research would be more applicable for students with ID – the minority of the study's participants – we applied a multiple-probe technique across subjects/classrooms within the context of a single-subject experimental design (Tawney & Gast, 1984). The process took seven months to complete. Maintenance sessions during the summer break could only be conducted with the students with ID.

The dependent variables of this research are writing time, length, elements, and quality of the stories written by the students, and length, elements, and quality of the personal narratives written by the students. The independent variable is the POW + WWW, What = 2, How = 2 + RPRS strategy.

Study conditions

The study conditions are: baseline, strategy instruction, strategy assessment, and maintenance. Data were collected in all stages, except the strategy instruction stage. These data were collected before and after instruction, and during maintenance sessions. Following strategy instruction, student views about it were gathered. Study condition sessions did not have a time limit.

Baseline

To identify the elements, quality, writing time, and word count of the stories written by the students, we collected baseline data until the students' scores (according to the story elements rubric) stabilised. During baseline data collection, the researcher wrote three pre-determined themes on the board, read them aloud, and instructed students, "Choose one of the story themes written on the board and write a story about it."

Strategy instruction

The entire instructional process was conducted by the researcher, who had already completed a pilot implementation of this study with a non-participant student group to better determine whether there were any issues that might undermine its internal validity and identify any problems in the implementation process. Following this pilot procedure, some revisions were made. In the present study, with the classroom teachers' consent, the researcher then implemented the SRSD instructional procedures three days per week, for maximum two consequent lectures a day. All stages completed in two sessions except for the memorising stage, which took one session. A 15 min break was given for every 40 min instruction time. The stages are explained below:

Develop background knowledge. This stage lasted 120 min. The researcher presented the WWW, What = 2, How = 2 story elements mnemonic to the students and gave them cards representing the different story elements of the mnemonic. Then, these elements were highlighted for the students within an example story. Lastly, the students were read a different story and asked to raise the story element card that corresponded to each of the story elements that they heard. Following these procedures, the strategy panel that depicts the stages of POW + WWW, What = 2, How = 2 + RPRS was introduced to the students. When all the students were able to correctly identify all story elements and mnemonics, the researcher moved on to the next stage.

Discuss it. This stage lasted 80 min. Three stories were discussed. The first was incomplete, the second contained seven underdeveloped elements, and the third featured seven developed elements. First, the students were asked to count the number of story elements that they had identified in the stories and mark their count on a "Rocket Chart," which featured seven sections for the seven story elements (Asaro-Saddler & Saddler, 2010). At the end of this exercise, it was stressed to the students that the objective was to write stories that included all seven story elements. A discussion was also initiated

about how these writing elements could have been better executed. The next stage began when all the students correctly identified all seven story elements.

Model it. This stage lasted 160 min. The researcher modelled the use of story-writing and self-regulation strategies by thinking aloud while writing out two stories on the board in two separate sessions. Using self-instruction expressions, she modelled the usage of *problem identification* (e.g., “What am I supposed to do?”), *planning and focusing* (e.g., “First, I need to remember the steps of the strategy that I learned and then follow these steps one by one”), *strategy* (e.g., “What were my story element mnemonics? I should first write them down”), *self-assessment* (e.g., “Does this make sense? I can explain this better. What is next?”), *self-reinforcement* (e.g., “I really like this part”), and *dealing with difficulties* (e.g., “When I rewrite my story, it is going to be better. I can manage this!”). Then, the importance of self-instruction expressions was explained to the students using the “Self-Statement Sheet.” The students used this sheet to note down the self-statement strategies they used in their writing. During a demonstration of RPRS in the second stage, the researcher edited her story according to the students’ suggestions. The students were told that, during the peer-revising stage, they would be reading their stories to their peers and be given listening cards describing how they were supposed to listen to their peers, as well as a reader assessment sheet (used to assess the story elements and determine whether they were written in the correct order) to mark and rewrite their stories in light of feedback. To move from this stage to the “support it” stage, all the students’ memorisation of the strategy stages and ability to correctly explain what needed to be done within each stage were set as the “passing” criteria. By the end of two sessions, some students could not fulfil these criteria, so an additional “memorise it” stage was introduced.

Memorise it. To help the students memorise the implementation stages of the story-writing strategy, a memorising sheet for the mnemonics mentioned in the story and implementation stages was distributed and then explained. This stage continued until all the students were able to write out the various stages of the strategy as well as the processes entailed for each. This stage lasted 40 min.

Support it. The “support it” stage was conducted as peer support practice. Practice groups comprised of two students each, who were asked to write stories using the scaffoldings. The researcher supported the students’

progress and self-regulation behaviour by supervising the peer groups throughout the process, checking the extent to which they were using the strategy and providing corrective feedback as necessary. This process continued until all the students were able to prepare their planning sheets (used to help plan the story) independently and follow all the steps of the strategy. In this step, the students studied independently; however, they were able to request peer assistance for any step with which they had difficulty. This stage lasted 160 min.

Independent performance. In the independent performance stage, planning sheets were not distributed to the students. Instead, they were asked to prepare them on their own. At this point in the process, the students were expected to select one of three given themes and write a story using the scaffoldings with minimal support. Three or four students read their stories to the class at the end of each session. This stage was considered complete when all the students were able to apply all the steps of the strategy independently and write stories using all seven elements. This stage lasted 160 min.

Then, all three groups had a session for generalisation tips instruction (Adkins & Gavins, 2012). This was an explanation session, not a regular detailed instruction session. During the sessions, the researcher wrote a personal narrative on the board and explained its narrative elements – their similarities to the story elements – to the students. The students were told to pay attention to these elements when writing their personal narratives. This session lasted 40 min.

Post-instruction assessment

Post-instruction assessments were made after the instruction sessions, 3 times for the story, and once for the personal narrative. The data collection method was the same used in the baseline condition.

Maintenance

Maintenance probes were collected between the 3rd and 19th weeks after instruction. Three sets of maintenance data were collected from each of the three students with ID, two sets from the first non-disabled peer group, and one set each from the second and third non-disabled groups.

Treatment validity

Two procedures were used to assess treatment validity. First, the instructional procedures were converted into a checklist. The researcher brought this list to class and marked items that were completed for every step.

Second, video recordings from each phase of the study, which corresponded to more than 30% of the entire process (18 videos), were submitted to two observers together with the treatment validity checklists. There were two checklists. One listed the implementation steps of baseline, post-instruction assessment, and maintenance sessions. The other covered the strategy instruction stages. Observers were chosen from a group of Ph.D. students in the special education field who had studied cognitive strategy education. Treatment validity was identified as 100% for all experiment stages and instruction steps.

Scoring procedures

Two clusters of dependent measures were collected for this study: a) elements of texts (story and personal narratives) scores, and b) quality of texts scores. In addition, the students' texts were scored in terms of their writing time and story length. For every group, the scores of the students with ID were written on three separate data sheets, while the non-disabled participants' average score was calculated for each group separately. The average scores were calculated by dividing the total scores of the non-disabled peers by the number of non-disabled peers in each group.

Elements

The story elements rubric developed by Ozmen et al. (2015) was used to score the narrative elements of participants' stories and personal narratives. These elements are based on Stein and Glenn's (1979) story structure. To aid scorers, the scale provided examples of how to score each element. Points were assigned for the presence and development of the following story elements: character, place, time, problem, initiating event, outcome, reaction, and heading. Zero points were given when an element was missing, 1 point when an element was present but limited in its development, and 2 points when an element was fully developed. Using this rubric, 16 points was the highest total score possible.

Quality

The "holistic scale" (Graham et al., 2005) was used to assess the quality of the stories and personal narratives written by the students during the baseline, post-instruction, and monitoring sessions. In the holistic assessment, stories and personal narratives were analysed in terms of ideation, organisation, grammar, sentence structure, and suitability of word choice. The scale ranged from 1 to 7 points. The stories and personal narratives written by 4th and 5th-grade students were taken as the basis for scoring. These texts were scored by the present authors,

and those stories and personal narratives that were agreed upon, and received 2, 4, or 6 points were chosen for holistic scaling. The stories and personal narratives written by the participant students were scored using these texts as the scoring key.

Moreover, additional data were collected by measuring the text length and planning and writing times. A starting time for every student could not be accurately observed from the security footage because the classrooms were crowded. After giving the writing instruction, the researcher told the students what time it was and asked them to note it on their paper. The period in between was considered "planning time." The students were also asked to note what time it was when they finished writing so that the total writing time for each student could be calculated. Writing times were determined by checking the times noted on the texts and using a calculator to calculate the durations.

Narratives' length was assessed by calculating the written words. Word count data were gathered by computerising the hand-written texts, including headings, and using the word processor software to do a word count.

Percentage of nonoverlapping data (PND)

The PND was calculated for the element and quality findings. The averages of data points from the post-instruction and maintenance sessions that did not overlap but were above the baseline were calculated. A PND of 70–90% was considered a *very effective*, 50–70% an *effective*, and below 50% an *ineffective treatment* (Campbell, 2013). PND – as used in this research – is used in studies in which the group average score is compared graphically with a single subject's score (i.e., Losinski, Ennis, Sanders, & Wiseman, 2019).

Inter-rater reliability (IRR)

Inter-rater reliability (IRR) for the elements and overall quality in both the stories and personal narratives written by the students was assessed for 30% of the stories and 30% of the personal narratives. IRR was calculated for the two doctoral students in special education who assisted in this study, and the researcher. The two raters were given 30 min of one-to-one training on how to score the elements and quality of a story or personal narrative. This training process was conducted using stories and personal narratives written by non-participating 4th and 5th grade students. Once 85% consensus was reached among raters for three successive texts, the training ended. Inter-rater reliability was calculated as total

points assigned for story/personal narrative elements. Separate reliability scores for individual elements were not noted. To determine IRR, coefficients for the Pearson product-moment reliability were calculated. IRR was calculated as 93% (85–100%) for story elements, 92% (87–100%) for personal narrative elements, 95% (90–100%) for story quality, and 97% (90–100%) for personal narrative quality.

Because of the gathering methods used, no inter-rater reliability was sought for the word count and writing time (cf. Asaro-Saddler & Saddler, 2010; Saddler & Asaro, 2007).

Social validity

After the instruction sessions ended, to determine social validity, a form containing six closed-ended questions was distributed to the students (cf. Table 3). The responses to the closed-ended questions were then quantitatively analysed. The percentage of each item was calculated by dividing the number of ticks for the item by the number of participants and multiplying the result by 100.

Results

Story and personal narrative elements

Figures 1 and 2 present the story elements rubric scores for the stories and personal narratives written by the students with ID and their non-disabled struggling writer peers during the baseline, post-instruction, and maintenance sessions.

As shown in Figures 1 and 2, the scores of the post-instruction stage improved substantially compared to the baseline. The post-instruction scores of the three students with ID increased by 8, 12, and 10 points on average. Similar improvement was seen in the average scores of their three non-disabled peer groups, which increased by 7, 8, and 8 points. Similar results were also seen when the personal narrative scores were compared. These results show that all participants developed their ability to write stories and personal narratives. In addition, the progress of the students with ID was similar to that of their non-disabled peers.

In the maintenance sessions, the first and second groups maintained their post-instruction gains in terms of story elements. There was a decrease of 1–3.6 points in the maintenance data for the students with ID in the second and third participant groups compared to post-instruction data averages. A significant point in Figure 1 is that, in group 1, the

student with ID scored 16 points with her story during the 19-week-long maintaining session. Non-disabled peers scored an average of 14 points (lowest 12, highest 16) in the same session. All participants also achieved higher scores in the maintenance sessions, compared to their baseline measurements, and retained the levels of their post-instruction performance for personal narrative elements during the maintenance sessions.

Story and personal narrative quality

Figures 3 and 4 demonstrate the quality scores calculated using the holistic scale of the stories and personal narratives written by participants with ID and their non-disabled peers during the baseline, post-instruction, and maintenance sessions.

As shown in Figures 3 and 4, both students with ID and their non-disabled peers struggling with writing wrote low-quality stories and personal narratives, scoring 1–2 points at the baseline. Compared to the baseline, both students with ID and their non-disabled peers demonstrated clear progress at the post-instruction stage. The quality scores of the stories of the students with ID were 5.3, 5.3, and 4.7, while their non-disabled peers scored 6, 6, and 5.7. A similar pattern was also observed for the quality scores of the personal narratives. While the quality scores of the personal narratives written by the students with ID increased by 2–5 points, those of their non-disabled peers increased by 3 points in all three groups. It was striking that the first and second participants with ID outperformed the average non-disabled group. The maintenance assessments for story quality showed that all participants maintained the quality demonstrated by their post-instruction performances. As seen in Figure 4, the data of the students with ID and their non-disabled peers overlapped in all three groups for all of the maintenance sessions; thus, all participants were assessed to have written the same quality of personal narrative during the maintenance sessions as during the post-instruction sessions.

Calculation of percentage of nonoverlapping data (PND)

In addition to visual analysis, the findings presented in Figures 1–4 were also analysed by calculating the PND. Compared to the baseline, the PND for the post-instruction and maintenance assessments was 100% for all three participants and groups.

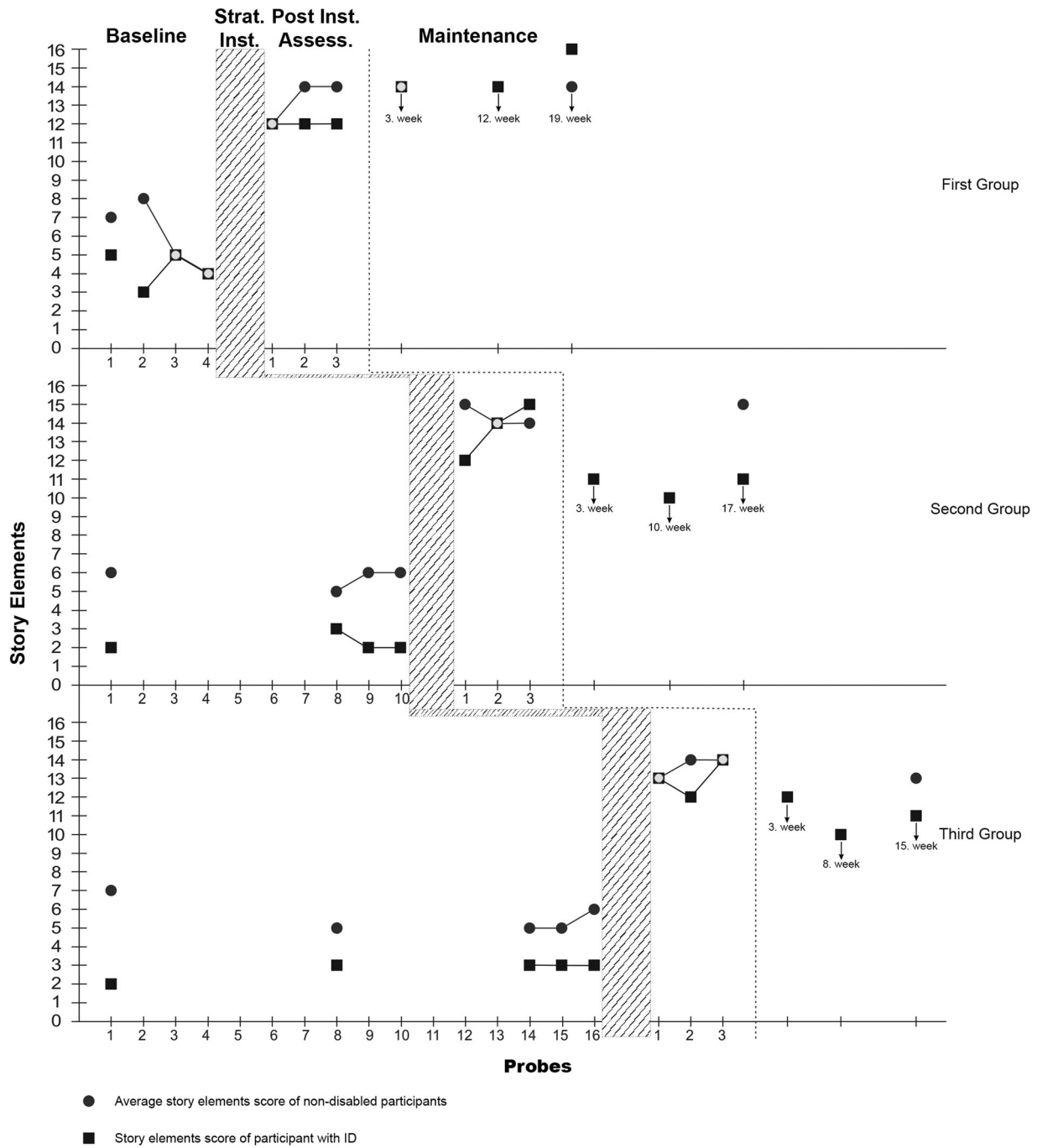


Figure 1. Story elements scores of participants.

Story and personal narrative lengths

Table 1 shows the length of the stories and personal narratives written by participants with ID and their non-disabled peers in the baseline, post-instruction, and maintenance sessions.

As seen in Table 1, the subjects’ stories and personal narratives lengthened from the baseline measurement. In the post-instruction sessions, the non-disabled students struggling with writing in all three groups wrote longer stories and personal narratives than

their peers with ID. In contrast, during the maintenance sessions, the non-disabled writers’ stories were shorter than those of their peers with ID in all three groups for the post-instruction sessions; however, word count did not decrease to the levels measured at the baseline.

Writing time

Table 2 shows the amount of time that participants with ID and their non-disabled peers struggling with

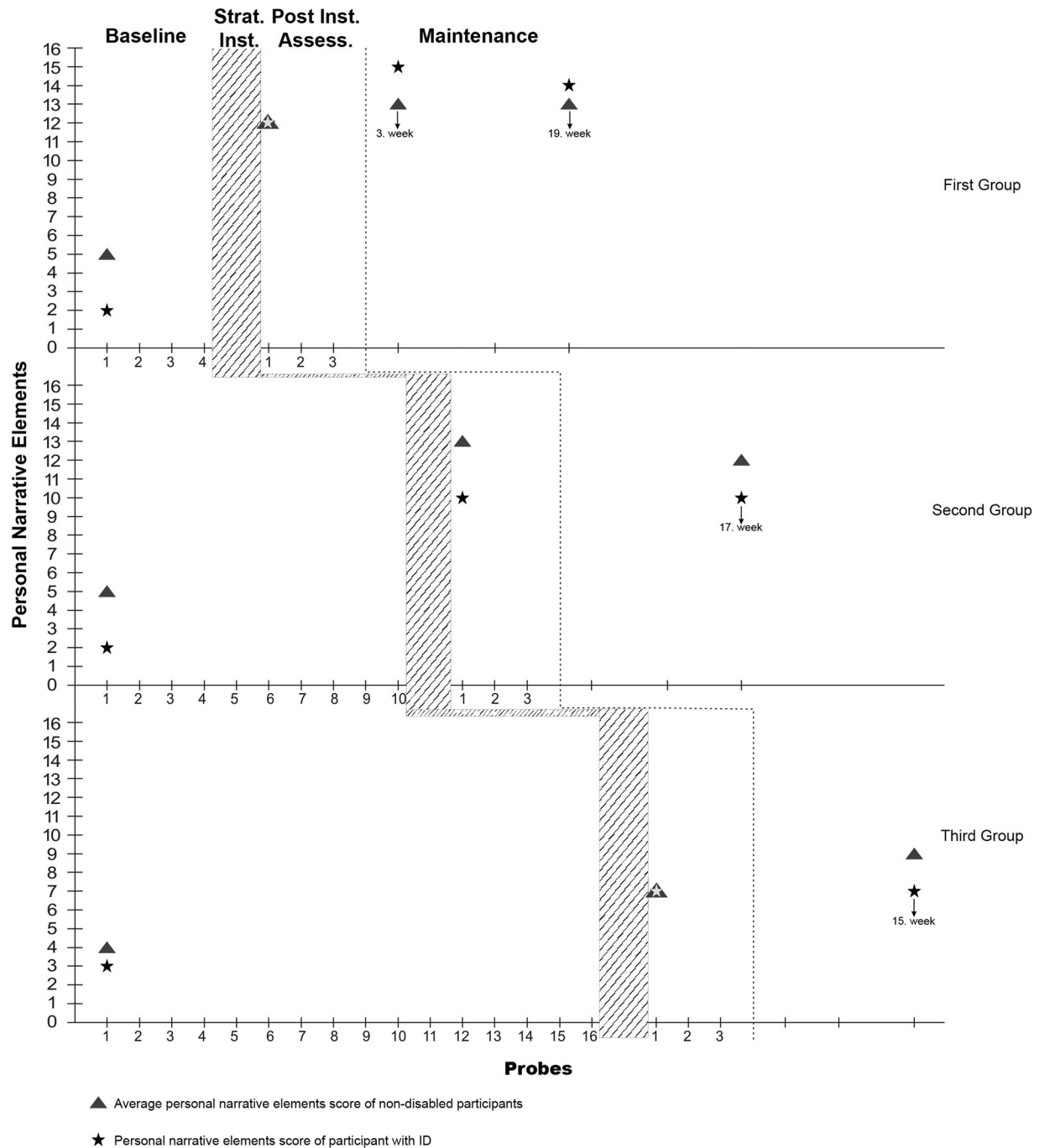


Figure 2. Personal narrative elements scores of participants.

writing spent planning and writing their stories during the baseline, post-instruction, and maintenance sessions.

At the baseline stage, participants spent almost no time planning. At the post-instruction stage, all participants allocated considerable time to planning. The non-disabled students spent less time planning during the maintenance sessions than they did in the post-instruction sessions. The students with ID, however, allocated similar or longer

durations of time to planning during the maintenance sessions.

Social validity

Student views on strategy instruction are highly positive. Table 3 shows the response percentages for each question. All of them stated that they thought that the strategy was useful for writing stories and other texts. Moreover, they all liked the strategy and believed that it would be helpful in their coursework and homework.

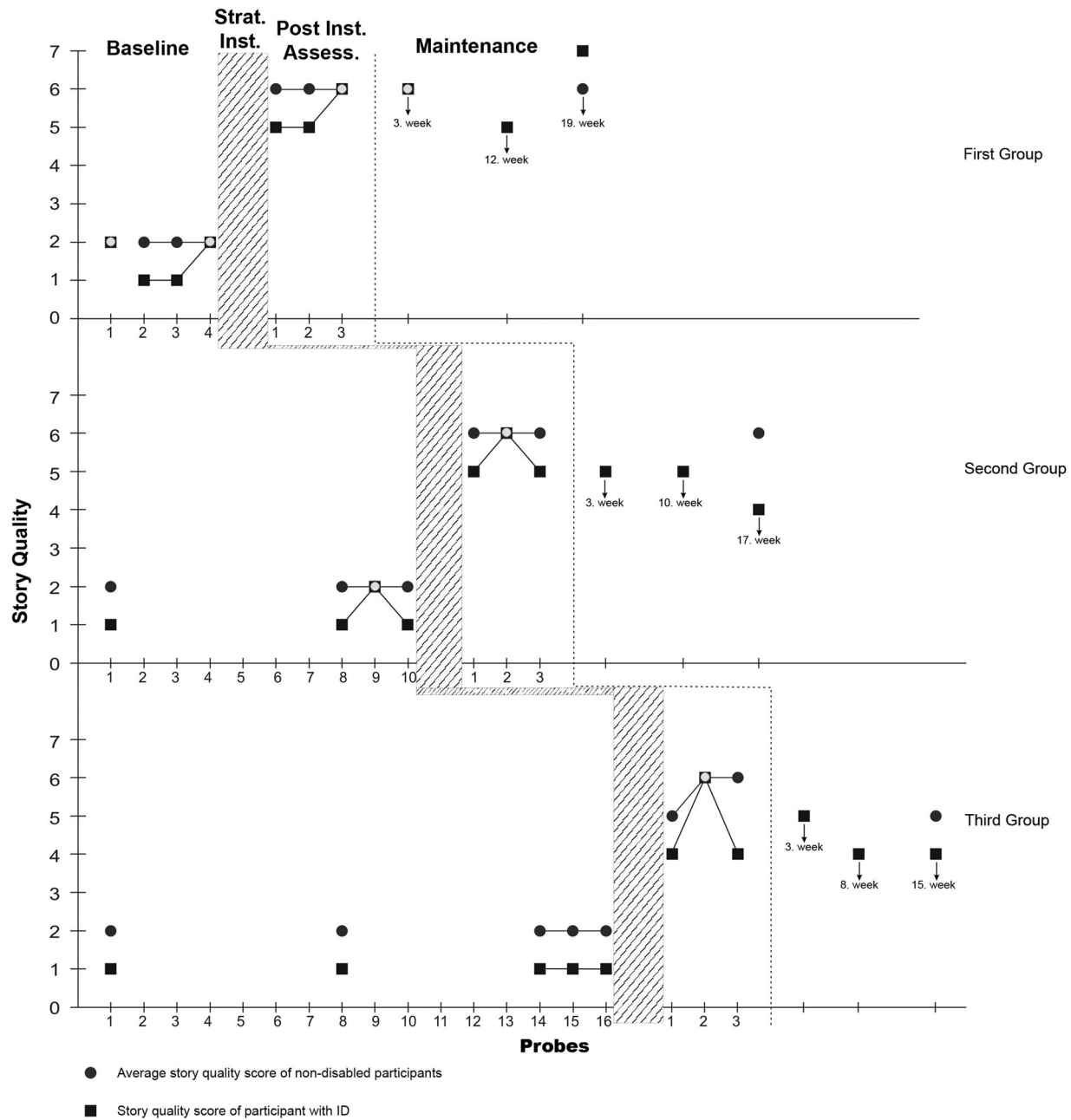


Figure 3. Story quality scores of participants.

Discussion

Summary of findings

Eight variables were analysed in this study, and substantial increases were observed for all of them. Any increase in one variable affected the others. For instance, “completion and detailing of story elements” and “following a logical order” affected overall story quality, and participants who improved these elements wrote better quality stories when compared to their baseline measurements. Moreover, at the end of the study, all participating students wrote longer stories compared to the baseline. All

participants allocated more time to planning and writing while implementing the stages of the strategy.

Lastly, the strategy instruction implemented in this study also continued to be effective for helping both students with ID and their non-disabled peers transfer the skills acquired in relation to writing stories to better developing the writing elements of personal narratives. This finding supports similar results from previous studies in which story-writing instruction was delivered according to the SRSD model and where generalisation data were also collected for writing personal narratives (i.e., Asaro-Saddler & Saddler, 2010). This generalisation

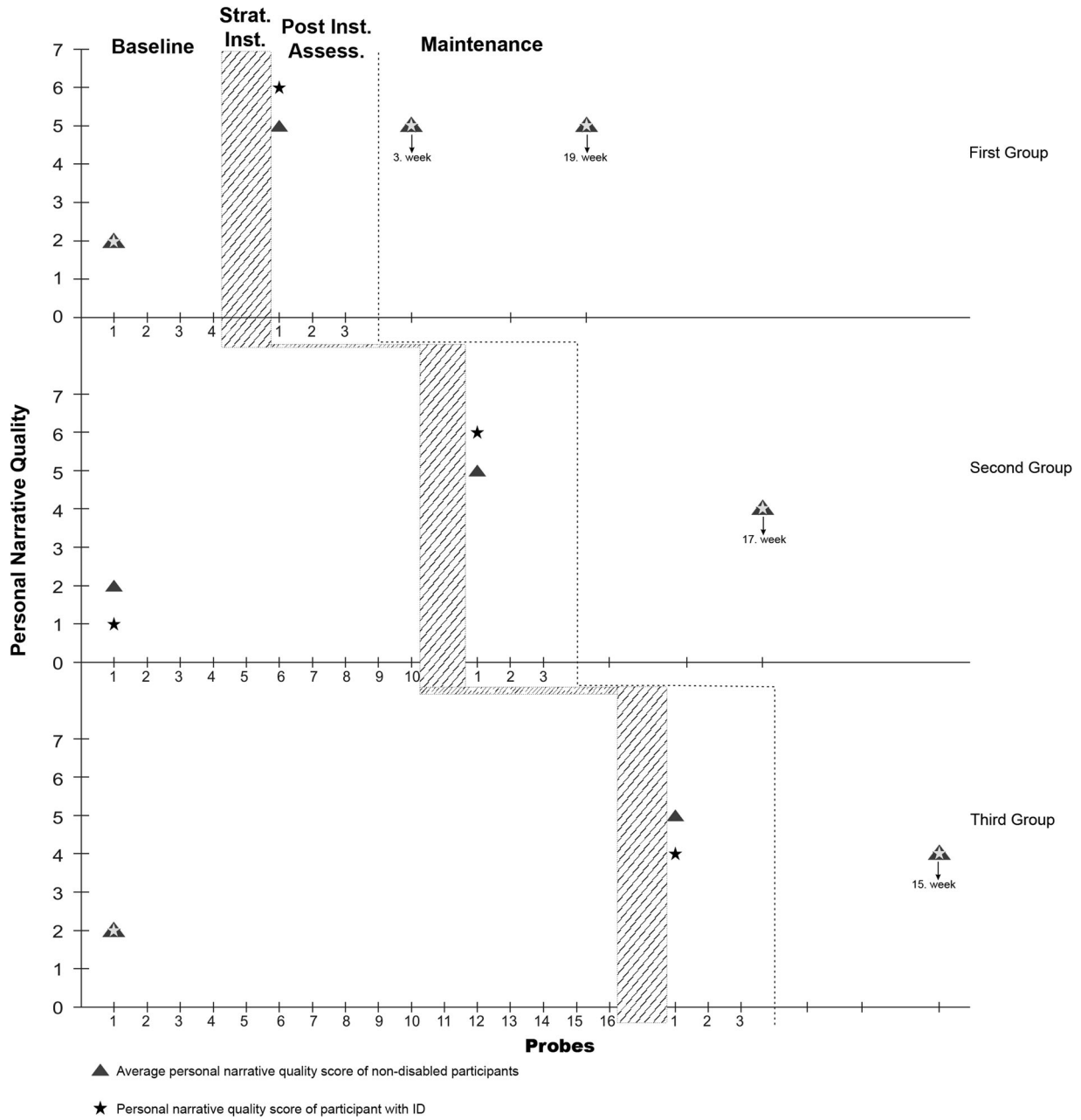


Figure 4. Personal narrative quality scores of participants.

Table 1. Narratives lengths*.

Sessions	1 st Part. With ID		1 st Non-disabled group		2 nd Part. With ID		2 nd Non-disabled group		3 rd Part. With ID		3 rd Non-disabled group	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
B	31	20	88	56	34	15	83	58	43	13	79	34
PI	99	68	226	85	169	71	176	75	104	48	186	56
M 3. Week	142	102	188	109	150	-	-	-	117	-	-	-
M 8. Week	-	-	-	-	-	-	-	-	120	-	-	-
M 10. Week	-	-	-	-	115	-	-	-	-	-	-	-
M 12. Week	182	-	-	-	-	-	-	-	-	-	-	-
M 15. Week	-	-	-	-	-	-	-	-	115	60	151	61
M 17. Week	-	-	-	-	120	88	155	84	-	-	-	-
M 19. Week	257	97	207	122	-	-	-	-	-	-	-	-

* Word count.

Note: L1 = Length of the stories, L2 = Length of the personal narratives, B = Baseline, PI = Post Instruction, M = Maintenance.

Table 2. Story-writing times*.

Sessions	1 st Part. With ID			1 st Non-disabled group			2 nd Part. With ID			2 nd Non-disabled group			3rd Part. With ID			3rd Non-disabled group		
	P	W	Total	P	W	Total	P	W	Total	P	W	Total	P	W	Total	P	W	Total
B	0.1	7	7.1	0.7	15.7	16.4	0	5.1	5.1	1.1	15.4	16.5	0.4	10.7	11.4	1	13.8	14.8
PI	3.8	37	40.8	7.6	51.2	58.8	2.5	19.5	22	3.1	31	34.1	3.2	28.3	31.5	3.6	35.2	38.8
M 3. Week	3.9	35.1	39	2.8	36.5	39.3	2.5	30.1	32.6	–	–	–	3.5	25.5	29	–	–	–
M 8. Week	–	–	–	–	–	–	–	–	–	–	–	–	3.2	25.3	28.5	–	–	–
M 10. Week	–	–	–	–	–	–	2	28.2	30.2	–	–	–	–	–	–	–	–	–
M 12. Week	5.0	32.2	37.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M 15. Week	–	–	–	–	–	–	–	–	–	–	–	–	2.3	28.6	30.9	2.4	30.3	32.7
M 17. Week	–	–	–	–	–	–	2.3	29.4	31.7	2.7	31.2	33.9	–	–	–	–	–	–
M 19. Week	4.2	38.3	42.5	3.9	40.6	44.5	–	–	–	–	–	–	–	–	–	–	–	–

*Minutes.

Note: P = Story-planning time, W = Story-writing time, B = Baseline, PI = Post-Instruction, M = Maintenance

demonstrates that the students learned about the writing process as a whole.

Effectiveness of scaffoldings

In previous studies, the POW + WWW, What = 2, How = 2 strategy was only used for the planning and writing sub-processes; however, in the present study, it was used together with RPRS to provide support for all writing processes in a holistic manner. In this study, presenting the POW + WWW, What = 2, How = 2 strategy together with RPRS as well as modelling all the writing stages for the students with ID and their non-disabled peers proved effective for achieving these results.

As already recognised in the literature, students with ID can experience limitations with their writing due to their deficiencies in comprehending cognitive strategies, such as organising, combining, repeating, detailing, and linking information (cf. Arabsolghar & Elkins, 2000). Our findings suggest that the scaffoldings used in this study provided the support that these students needed to successfully implement these strategies. Therefore, we posit that the use of such scaffoldings can play a

positive role in students' development of their writing abilities because it increases their independence, which then helps them create better-quality, well-developed stories. Additionally, they generalise this ability. All of the teaching elements implemented in this study provided long-lasting learning effects to the students; they were able to maintain their improved performance for as long as 3–19 weeks. This result supports other findings that have aimed to develop writing instruction using an SRSD model (e.g., Saddler & Asaro, 2007).

Insufficient strategy instruction in primary language classes

We found that, in every class in which there was a student with ID, there were also dozens of non-disabled students also struggling with story-writing. An insufficient quality of education in these classes may partially explain this. Furthermore, the fact that students have such limited experience with strategy instruction in their primary language classes could also be another contributing factor to this widespread difficulty that Turkish students experience with writing. In Turkey, instruction concerning how to write various kinds of texts is covered more widely by the primary language curriculum, which was revised during the 2004–2005 academic year. A 2009 revision further set goals pertaining to the use of writing strategies. However, the curriculum in Turkey does not provide teachers with clear explanations regarding best practices for teaching writing strategies, which could likely account for why the number of students struggling with story-writing was so high in the classes that took part in this study. We think writing strategies, such as the one presented in this study, should be explained to teachers in detail; furthermore, we recommend an update to national primary language curriculum with detailed guidelines for teachers regarding a holistic approach to writing strategy instruction.

Table 3. Social validity findings.

Questions	Responses	%
1. Do you recommend me to teach POW WWW What = 2, How = 2 + RPRS to other students too?	Yes	96.4
	No	–
	Not sure	3.5
2. Do you recommend me to teach WWW What = 2, How = 2 mnemonic to other students too?	Yes	94.7
	No	–
	Not sure	5.2
3. Was the strategy you learned helpful for you in writing stories?	Yes	100
	No	–
	Not sure	–
4. Do POW WWW What = 2, How = 2 + RPRS help you in writing other types of texts?	Yes	100
	No	–
	Not sure	–
5. Is the strategy you learned useable at home, in other courses or while doing homework?	Yes	100
	No	–
	Not sure	–
6. Did you like the strategy you learned?	Yes	100
	No	–
	Not sure	–

Student feedback

The student feedback collected at the end of the instruction stage was quantitatively analysed. According to the analysis, participants expressed positive opinions about the strategy. These results support the findings of previous studies that used the SRSD model and also collected feedback from students at the end of the strategy instruction (e.g., Adkins & Gavins, 2012).

Furthermore, when the students in this study revised each other's stories, they made suggestions for improvement, which created a positive atmosphere in the classroom. In all three classrooms, peer-supported learning also eased classroom management for the teachers. Control was gradually transferred from the teachers to the students as they began supervising their own academic activities.

Conclusion

Benefits of classroom environment and peer-supported revision

Most studies that have used the SRSD model to instruct story-writing strategies were conducted in learning environments other than classrooms (e.g., Saddler et al., 2004). In this study, the students with ID and their non-disabled peers struggling with writing were not taken out of their classroom environment, and they received strategy instruction in the same location as their nonparticipant peers. To better organise instructional activities in inclusion classrooms as well as to provide strategy instructions to large groups, the significance of this implementation aspect merits further discussion. In the inclusion classrooms, it is important that students with ID and non-disabled students participate in instructional activities together in the same classroom.

This study's use of peer-supported learning also had positive mutual effects on the students with ID and their non-disabled peers. During the peer-revising stage, the students took turns acting as "editors," using the listening cards and reader assessment sheets. Thanks to the implementation of peer-supported revisions, the students who had previously turned to their teacher to supervise their lesson progress instead supported one another in developing their written expression skills; they helped make each other more successful writers.

Limitations and implementation recommendations

There were some limitations in this study. First, all three of the students with ID who participated were female; we could not find male students with ID suitable for the

study in the classes that we pre-evaluated. Second, we could not satisfactorily determine the precise amount of time that participants spent revising and editing. Third, as in similar studies, we did not seek inter-rater reliability for writing time and word count data because of the gathering methods used.

Our recommendations for future implementation are as follows: (1) we recommend the use of peer-support in writing strategy instruction; (2) instruction sessions should be planned in a way that allows responsibility to gradually shift from teachers to students (Harris & Graham, 2013); (3) scaffoldings, such as think sheets, graphic organisers, transactional dialogues, diagrams, and thinking aloud should be utilised in strategy instruction (Englert, 1990). Self-regulation instruction should also be embedded within writing strategy instruction. To help students maintain the skills acquired, we recommend reviewing the strategy steps and repeating the practices in the weeks following instruction.

Concluding remarks

In conclusion, the instruction of POW + WWW, What = 2, How = 2 + RPRS was effective for improving the writing skills of both students with ID and their non-disabled peers who also struggle with writing. The realisation that this strategy instruction can be applied to students with ID without separating them from their peers is one of this study's substantial findings. In addition, another striking result of this study is that the first and second participants with ID outperformed the non-disabled group's average personal narrative quality score during the post-instruction session. Lastly, all the students generalised the strategy they learned in story-writing to personal narratives. This study, therefore, hopes to guide future research on disability groups by showing that students with ID can benefit from strategy instruction for skillsets that entail complex cognitive processes, such as writing.

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