COMPARING EFFICACY IN ENGLISH LANGUAGE SPELLING ACCURACY COVER, COPY, AND COMPARE VERSUS THE ASSIGN-AND-TEST METHOD

NOURA SHABAK ALRWELE*

ABSTRACT _ *The purpose of the current study is to compare the accuracy achieved by using the cover, copy, and compare (CCC) method as a class-wide spelling strategy with that achieved using the assign-and-test method. Four eighth–grade classrooms consisting of 122 total students participated in the study. The quasi-experimental 2-group pretest/posttest design was used .The following materials were utilized: CCC worksheet, students' training script, procedural integrity checklist, and inter-scorer agreement data collection form. The intervention lasted for 12 sessions that were each 15 minutes in duration. Data were collected through an investigator-prepared spelling test used as a pre- and posttest. Results revealed significant differences between the research groups' mean scores on the spelling posttest in favor of the CCC group. Discussion focuses on the applicability of CCC as a class-wide strategy to teach spelling to students learning EFL and the positive features of CCC. Limitations, future directions for research, and implications for practice are offered.*
KEYWORDS: *cover, copy and compare; self-evaluation; self-correction; spelling accuracy.*

***** **Assistant Professor, Department of curriculum, Imam Mohammad Bin Saud University , KSA**

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I. INTRODUCTION

Spelling is an important skill for individuals to have when they are learning languages. A student's "ability to spell words correctly shows a clear understanding of the letters, sounds, and syllable patterns that make up the English language and other languages" [1].

Studies have indicated that spelling and reading are similar skills [2]. Students who have poor spelling ability typically have trouble reading words [3]. Spelling also contributes to vocabulary growth, reading comprehension [4], and writing, which is an important aspect of nearly every academic discipline.

Despite the importance of spelling for learning, studies have revealed that students show significant weaknesses in spelling [5]. In Saudi Arabia, the English language is the primary "foreign language encountered in schools, colleges, and universities" [6]. In schools, English is taught as a compulsory subject in grades 4 through 12. The average instructional time for English is 4 classes per week, with each class lasting 45 minutes. English is also a compulsory university requirement in preparatory college, which is "the pre-university college that every student is required to attend for a bachelor's degree" [7]. English is also a language of instruction for various majors at universities, including medicine, pharmacy, engineering, and medical and technological sciences.

According to our review of the EFL literature in Saudi Arabia, studies have revealed that, similar to native English speakers, students in Saudi Arabia exhibit severe weaknesses in spelling. [8] conducted a study to investigate the spelling errors that Saudi EFL freshmen students are prone to make and found that the participants exhibited severe spelling difficulties. Al Jarf concluded that many Saudi college students are poor spellers [8]. In a similar study that was conducted in 2012 by Khan and Itoo, who attempted to classify the spelling problems of students in their preparatory year of college at Najran University; the results replicated those of Al-Jarf and showed that Saudi EFL students have different types of spelling problems. Khan and Itoo suggested that a spelling course should be developed and integrated into the English language program.

El-Dakhs and Mitchell [9] conducted a study to investigate spelling errors among EFL high school graduates and concluded that Saudi EFL learners suffer from serious difficulties with their English spelling despite the earlier introduction of English in schools.

Studies addressing the learning and teaching of spelling among EFL Arab learners in general and Saudi students in particular are relatively scarce. Most available studies have addressed teaching outcomes rather than inputs or processes; that is, they have aimed to diagnose spelling errors and their causes. Little if any research has been conducted to address strategies for learning and teaching spelling. The current state of spelling instruction in Saudi schools and colleges is unsatisfactory; spelling has become a low priority in schools and an "ignored" skill in colleges [8].

Khan and Itoo stated that the language programs of schools and universities do not provide sufficient opportunities for the study of spelling. Formal spelling instruction ends during the middle school years, and the English language curriculum in universities does not offer special programs for spelling [7]. Unfortunately, a wide gap exists between current research knowledge of spelling instruction and daily classroom practices. Despite the large number of evidence-based interventions that have been undertaken over the past 20 years, spelling is being taught in Saudi schools using the traditional assign-and-test method. With this method, a list of words is assigned at the beginning of the week, students practice these words during the week (e.g., writing words in sentences, completing crossword puzzles), and a spelling test is held at the end of the week. Numerous studies have evaluated the efficacy of the traditional assign-and-test method in terms of improving spelling and have concluded that it is an ineffective method of teaching spelling [10].

In the last two decades, researchers and educators have developed and empirically validated a variety of interventions designed to improve the learning of spelling. One well-documented research-based intervention is the cover, copy, and compare (CCC) method, which is an efficient self-managed intervention that can be employed with a whole class and requires few resources, little time and little training [11]; [12]. CCC can be employed in subject matter areas involving recognition, memorization, or automatic responding such as spelling, basic skills, mathematics, and geography [13].

Using the CCC method, the student first looks at an academic stimulus (e.g., a written word, a written mathematics problem and its answer, or a map with states labeled). Second, the student copies the stimulus. Third, the student covers both the stimulus provided and his/her copied response and provides an academic response from his/her memory. Fourth, the student uncovers the original stimulus and compares the written response to the original stimulus to evaluate his/her performance. If the student determines that the response and stimulus match, then he/she progresses to the next item using the same procedure. If the response does not match, which means that the student made a mistake, he/she engages in an error correction procedure by writing the correct response either once or multiple times [14;5;16;17;18;19;20;21;22;23;24].

Studies have demonstrated that the CCC method is effective across tasks, participants, and settings [20]. Previous studies have revealed the effectiveness of CCC in improving students' performances in a variety of academic subjects, including spelling [2]. math [25;26], science [27], and reading [14;28]. CCC has improved spelling performance across grade levels. The improvement has been found in both elementary school students [2]. and middle and high school students [11;29]. The CCC method has been successful in a wide variety of settings, ranging from general education classrooms to special education settings and even in the home [30].

II.   STATEMENT OF THE PROBLEM

Findings of previous studies have revealed that students in Saudi Arabia exhibit severe weaknesses in spelling and are considered poor spellers. Despite the large number of evidence-based interventions that have been undertaken over the past 20 years, spelling is being taught in Saudi schools using the traditional assign-and-test method. It seems that there is a wide gap existed between current research knowledge of spelling instruction and daily classroom practices. Furthermore, no data is available regarding the evaluation of the current teaching methods of spelling.

III.   PURPOSE OF THE STUDY

Review of previous literature has shown the effectiveness of the CCC method as a class-wide intervention across tasks, participants, settings, and academic subjects. The current study aimed to compare the effectiveness of the traditional assign-and-test method to that of the CCC method in improving the accuracy of spelling of Saudi 8th graders learning English as a foreign language.

RESEARCH QUESTIONS

The study addressed the following major question:

-Are there statistically significant differences at (p <.0.05) in the total average score of the post-test between the cover, copy, and compare (CCC) group and the assign-and-test group?

SIGNIFICANCE OF THE STUDY

The significance of the study emanated from the following reasons:

First, the study addressed some gaps in the research literature on the methods of teaching English spelling in Saudi schools; no sufficient data exist on the evaluation of current teaching methods.

Second, no data exist regarding the use of the CCC method with Saudi students learning English as a foreign language. At the time of this study's release, little research has been published on the use of the CCC method for students learning foreign languages.

Third, little research has investigated the use of the CCC method as a class-wide intervention strategy to improve the spelling accuracy of general education students.

Fourth, the findings of the study could benefit students, English language teachers, supervisors, and syllabus designers since it offer an effective self- managed strategy which is practical in terms of time and money and could be used either as a learning or a teaching method.

IV.   METHOD

Participants and Setting

Four general education classrooms containing a total of 122 eighth-grade students participated in the study. Each class in the school contained either 30 or 31 students; thus, each research group contained a total of 60 students. The participants were divided into two groups: the control group, which was taught using the traditional assign-and-test method, and the experimental group, which was taught using the CCC method.

All participants were female native speakers of Arabic who had been learning English as a foreign language since the fourth grade, and their ages ranged from 14 to 16.

The study took place in a public school located in northern Riyadh. The participants completed tasks in their assigned classrooms. The study was conducted during the fourth and fifth periods of the school day, and the author performed the procedures with some assistance from the classroom instructional staff. During the 45-minute English class, the participants in the experimental group worked on their daily English lesson using their textbooks and then spent the last 15 minutes practicing the CCC method. Twelve class periods, representing a total of approximately 180 minutes, were needed to complete the study.

Materials

The following materials were used in the study:

- A list of 60 spelling words taken from the students' textbooks. The teacher confirmed that these words were intended for spelling instruction (Appendix A).
- Two pieces of blank lined paper per student for the pretest and posttest.
- Twelve CCC worksheets (each worksheet was designated for one session and contained 5 words) with seven columns. The first column presented the intended spelling words. The next column provided a space for the participant to copy the word. The third column provided a space for the participant to write the word from memory. The fourth column was used to check the accuracy of the spelling. The final 3 columns were designated for the participant to write the word 3 times if she misspelled it. A sample CCC worksheet is presented in Appendix A. Additional samples of CCC worksheets can be found in the following research studies: [11;2;24].
- A blank index card was used by each student to cover the stimulus as she wrote words from memory.
- A student training script, which the investigator developed after reviewing previous literature on the CCC method (see Appendix B).
- A procedural integrity checklist (see Appendix C).
- An inter-scorer agreement data collection form that the investigator developed to assess the reliability of measurement (See Appendix D).
- An investigator-prepared spelling test.

Dependent Variable and Measurement Procedures

The dependent variable was the accuracy of spelling. Data for this variable were collected from the number of words spelled correctly on the pre- and posttests.

To determine the accuracy of the spelled word, the spelled word was compared to the original word written on the spelling list. Any alteration or deviation was considered an error.

Experimental Design and Procedures

Because randomly distributing participants into the two research groups was impossible due to administrational constrains, a quasi-experimental 2-group pretest/posttest design was used.

Prior to the intervention sessions, the author investigated the equivalency of the two groups according to three variables: age, achievement in English, and spelling ability. Data regarding the participants' ages and achievement in English were obtained from school files, and the participants' spelling abilities were determined by their performance on the pretest. Data were recorded and analyzed using t-test. The results indicated that there were no significant differences at the p < .05 level between the two groups in terms of age, achievement in English, or spelling ability (see Appendix E).

Pretest

Prior to the intervention, Informed consent was obtained from all individual participants included in the study and from their guardians. Then ,each participant was

administered a spelling test of 30 words. The purpose of the pretest was to determine how much growth the participants would make and to compare the gains in experimental groups to those of the control groups. The pretest was also used to validate the equivalency of the research groups. The resource room was prepared, and desks were arranged with sufficient distance so that the students would not be able to glance at their classmates' papers. The investigator placed blank lined paper with the numbers 1 through 30 printed in the left margin and placed a pencil on every desk. The students were welcomed, asked to enter the classroom, sit quietly, write their names and do their best on the spelling test. The author recited each word aloud twice, paused, and then recited the word again. After the test had been completed, students were thanked and asked to place their papers face down. The tests were collected and scored.

Training Procedures

Training was implemented immediately following the pretest. The investigator trained the CCC group to use the CCC method using demonstration, modeling, and practice. The CCC method was modeled once with the word spelled correctly and once with the word spelled incorrectly to ensure that the participants fully comprehended the procedures. The participants were then handed a CCC worksheet containing 10 lower-level spelling words that were not used during the intervention, and they were asked to practice the CCC method. The participants were provided the time and opportunity to ask questions, and they were provided corrective feedback. The participants were trained as a group in their respective classrooms. The training session lasted for 45 minutes. (The student training script document is presented in Appendix B).

Intervention

After obtaining the essential required permission to conduct the study and validating the equivalency of the research groups, the investigator assigned classes A and C to the traditional assign-and–test method group and classes B and D to the CCC method group. All classes were instructed by the same English language teacher. The allotted time for teaching English in Saudi public schools is 4 classes per week, with each class lasting 45 minutes. The study lasted 3 weeks, and sessions were conducted 4 times per week for all research groups. The implementation of the CCC procedures required 12 classroom sessions. For classes A and C, the teacher continued with her traditional spelling instruction and followed the usual routine, which included activities such as completing crossword puzzles and sentences. The teacher assigned a list of 20 spelling words that would be taught and assessed each week. For classes B and D, the teacher continued her instructional routine in teaching language skills except for spelling. The investigator and the class teacher agreed that the teacher should exclude any spelling activities from the instruction and leave the class 15 minutes earlier than usual so that the investigator could implement the CCC procedures for the last 15 minutes of class. The author used the teacher's 60-word spelling lists for the 3 weeks to develop the CCC worksheets. Twelve CCC worksheets were prepared and photocopied. Each worksheet represented a typical CCC sheet and included 5 words to be practiced in each session; these words were printed in the left-hand column. (A sample CCC worksheet is presented in Appendix F).

Each session began by giving the students a CCC worksheet and directing them to write their names, work independently and as quickly as possible, and work horizontally across the worksheet from left to right. The students were also reminded of the CCC steps: look at the word written in the left-hand column, copy this word in the second column, cover the first two columns with an index card, write the word from memory in the third column, remove the index card to display the first two columns and compare these columns to check for accuracy, place a mark in the "check spelling" column, and rewrite the word 3 times if it was spelled incorrectly. The participants were given 10 minutes to work. Then, the worksheets were collected, and the participants were given a spelling test. This structure was followed for 12 sessions.

Procedural Integrity

Procedural integrity data were collected by an independent observer (the classroom teacher), who attended the training and intervention sessions and recorded her observations using the procedural integrity checklist presented in Appendix C. The procedural integrity checklist included the CCC standard steps to be followed. The independent observer was required to record checkmarks when the CCC steps were correctly implemented by the investigator. The independent observer attended 7 of the 12 intervention sessions (58%). The procedural integrity was calculated by dividing the number of steps checked by the independent observer" by the total number of steps listed in the checklist and multiplying by 100" [15]. Procedural integrity across observed sessions was 100%.

Posttest

During the last day of the intervention, a posttest was administered to the participants in the same manner as the pretest. The spelling words presented on the pretest and posttest were identical. After the students completed their posttest, they were thanked for their participation in the study.

Data were collected from all participants. None of the participants in either group missed more than two sessions; thus, all of the 122 participants were included in the analysis: the traditional method group (N = 61) and the CCC group (N = 61).

Totals, means, and standard deviations (SDs) were calculated, and a t-test was used to determine which method resulted in greater improvement in spelling accuracy.

Inter-scorer Agreement

The author provided a Xerox copy of the inter-scorer data collection form (see Appendix D) and all of the pretest and posttest papers. The investigator and an independent scorer (the classroom teacher) independently scored all assessment sheets that the participants completed and recorded the number of correct and incorrect answers that the participants gave on each spelling test using the inter-scorer data collection form. Agreement was noted if the word was scored in the same manner. Any differences were scored as a disagreement. Data from all of the assessments were used to calculate inter-scorer agreement. The formula used was as follows: divide "the number of agreements by the number of agreements plus disagreements multiplied by 100" [31]. The inter-scorer agreement across tests and participants was 100%.

V. RESULTS

Table 1 displays the means, SDs, and t-value of the traditional and CCC groups' pretest scores.

Table 1
Differences Between the Traditional and CCC Groups' Pretest Scores/

Group	# of cases	Mean	Standard Deviation	t-value	Probability
Traditional	61	10.79	5.50	0.60	0.54
CCC	61	10.18	5.55		

The data in Table 1 show that the traditional group's mean score (M = 10.70) was nearly equal to that of the CCC group (M = 10.18). A perfect score on the posttest was 30; thus, both research groups exhibited low spelling accuracy. No significant differences were found between the two groups prior to treatment. The investigator assumed that the research groups were equivalent in terms of spelling ability.

Answer of the study major question:
- Are there statistically significant differences at (p <.0.05) in the total average score of the post-test between the cover, copy, and compare (CCC) group and the assign-and-test group?

After the end of the intervention, data have been gathered and analyzed using the SPSS statistical package .Mean and standard deviation of the study groups' results were computed. T-Test Independent Sample was used to measure the significance of differences and results were drawn.

Table 2 displays the means, SDs, and t-value for the traditional and CCC groups' posttest scores.

Table 2
Differences Between the Traditional and CCC Groups' Posttest Scores

Group	# of cases	Mean	Standard deviation	t-value	Probability
Traditional	61	13.13	5.66	8.52	.99*
CCC	61	23.33	7.43		

*p <.01.

The CCC group's mean score (M = 23.33) was higher than that of the traditional group (M = 13.13). These data suggest that the participants in the CCC condition exhibited higher levels of spelling accuracy than did those in the traditional condition. The results of t-test showed a significant difference between the means of the two groups (t = -8.52, p = 0.01). These data suggest that the participants in the CCC group demonstrated a statistically significant increase in spelling accuracy.

Each individual's pretest performance was compared with her performance on the posttest (The results for each participant in the CCC group are shown in Appendix G). Overall, each student revealed a higher level of spelling performance. An analysis of individual data showed that all participants in the CCC group made gains, with an increase from pretest to posttest ranging from 7 to 17. The total gains in scores for the CCC group were high (gains = 709). These data suggested that the CCC method enhanced the spelling accuracy scores of the CCC group. The absence of a similar increase in the traditional group's scores suggested that the traditional assign-and-test method of teaching spelling did not help students improve their spelling accuracy (individual gains ranged from 0 to 5, with 11 participants showing no improvement). The traditional group's total gains in scores were relatively flat (gains = 143). The results for each participant in the traditional group are shown in Appendix H.

VI. DISCUSSION

The results of this study indicated the efficacy of the CCC method for enhancing spelling accuracy, as all participants in the CCC group exhibited greater gains in spelling accuracy than did those in the traditional method group. Because the research groups were equivalent in their spelling accuracy prior to the intervention, the significant difference in posttest scores between the research groups could be attributed to the efficacy of the CCC method.

The current results replicate previous research regarding the effectiveness of the CCC method in increasing spelling accuracy [14]; [2]. The outcomes also provide additional evidence of the efficacy of using the CCC method with students in general education classrooms [30]. The current study's findings add to the existing literature regarding the effectiveness of the CCC method as a class-wide intervention [12,17,21,22].

In addition to supporting earlier research, the current study highlights many positive features of the CCC method. First, the CCC method is practical in terms of time and money. The investigator was able to integrate the CCC procedures into classroom instruction with minimal disruption to the ongoing teaching routine, and the CCC method required only 15 minutes per class to implement. The participants quickly developed mastery of the strategy. When the researcher explained the observational checklist (procedural integrity checklist) to the classroom teacher, the teacher showed an interest in the strategy and found it easy to implement. Once students were trained, they were able to carry out the strategy independently. The only materials needed were pencils and CCC worksheets. Preparing the worksheets took approximately 5 minutes and required only printing the 20 words assigned for the week in the pre-made templates and copying them. Thus, the CCC method could be utilized in nearly every English language class, even in settings where spelling is considered a "low priority" skill. In this context, the following comment from Skarr et al. seems appropriate: "the ease of the intervention did not detract from its effectiveness" [2]

Moreover, the CCC method used in the current study employed a variety of effective components that have been shown to enhance spelling performance, including opportunities to practice [32], self-pacing [14]. and immediate self-evaluation and correction [33;10].

The findings of the current study also replicate previous research that has evaluated the efficacy of the traditional assign-and-test method and shown that this method is not effective [10].

Low gains in the traditional group's posttest scores suggested that students lack effective learning strategies. Thus, when students in the CCC group were presented with the CCC method, they adopted it as a learning

strategy to improve their spelling performance. Further research is needed in the field of spelling learning strategies among Saudi students.

The findings of previous research have shown that when students are presented with the CCC method, they adopt it as a learning strategy and even generalize it to other subject matter areas, such as reading and vocabulary development [34]. It would have been a unique achievement if the current study had collected data regarding the generalization of the CCC method to other subject matter areas.

Despite its strengths, the current study has several limitations. First, because the CCC method was implemented by the investigator, other factors (e.g., the demand effect and the Hawthorne effect) could have been responsible for the participants' changes in performance. The participants may have been motivated to please the experimenter, who was working with them for 4 consecutive weeks. The Hawthorne effect, which is also referred to as the "observer effect", indicates that participants may change their behavior and work harder in response to a change in their environment and the attention they receive from the experimenter rather than in response to the independent variable. Such threats to internal validity can be ruled out if one individual manages both treatments (the traditional method and CCC).

Second, the sample size was somewhat small. The study began with 122 participants in only four classrooms in a school located in northern Riyadh . With this sample size, it would be difficult to generalize results across classrooms or school districts.

The study provides a number of directions for future research. Some recommendations for additional research include investigating the generalization of the CCC method to other subject matter areas, investigating the use of the CCC method to improve vocabulary acquisition, and evaluating the effects of the CCC method on other variables, e.g., self-perception, test anxiety, motivation and attitude toward learning spelling.

The current study adds to earlier findings that have suggested the effectiveness of the CCC intervention in improving spelling accuracy. The findings of the current research show that little effort and time are needed to implement this intervention in general education classrooms. The CCC method could be considered an efficient and valuable option available to teachers as a means of teaching spelling and improving their students' performance.

REFERENCES

[1] Weber, B., McLaughlin, T., Cozza. M., & Millersmith, T. (2013). Using and evaluating cover, copy, and compare with a 4th grade student with autism: A case study with brief measures of maintenance of treatment effects over time. International Journal of English and Education, 2, 221-230.

[2] Skarr, A., McLaughlin, T. F., Derby, K. M., Meade, K., & Williams, R. L. (2012). A comparison of direct instruction flashcards and cover, copy compare to teach spelling to elementary school students. Academic Research International, 2, 247-263.

[3] Graham, S., Harris, K. R., & Chorzempa, B. F. (2002). Contribution of spelling instruction to the spelling, writing, and reading of poor spellers. Journal of Educational Psychology, 94, 669-686. doi:10.1037/0022-0663.94.4.669

[4] Moats, L. C. (2006). How spelling supports reading: And why it is more regular and predictable than you think. American Educator, 29, 12-22.

[5] Nies, K. A., & Belfiore, P. J. (2006). Enhancing spelling performance in students with learning disabilities. Journal of Behavioral Education, 15, 162-169. doi:10.1007/s10864-006-9017-7

[6] Liton, H. (2012). Developing EFL teaching and learning practices in Saudi Colleges: A review. International Journal of Instruction, 5(2), 129-152.

[7] Khan, I., & Itoo, B. (2012). Problems of spelling in common English learners of Saudi Arabia and strategies for improvement: A case study in preparatory year college, Najran University, KSA. Language in India, 12(11), 297-326.

[8] Al-Jarf, R. (2010). Spelling error corpora in EFL. Sino-US English Teaching, 7(1), 6-15.

[9] El-Dakhs, D., & Mitchell, A. (2011). Spelling errors among EFL high-school graduates. In The proceedings of the 4th annual KSAALT conference. Al Khobar: Prince Mohammed Bin Fahd University.

[10] Viel-Ruma, K., Houchins, D., & Fredrick, L. (2007). Error self-correction and spelling: Improving the spelling accuracy of secondary students with disabilities in written expression. Journal of Behavioral Education, 16, 291-301. doi:10.1007/s10864-007-9041-2

[11] Carter, M., McLaughlin, T. F., Derby, K. M., Schuler, H., & Everman, J. (2011). Differential effects of cover, copy, and compare in spelling with four high school students with severe behavior disorders. Academic Research International, 1, 43-51.

[12] McDonald, L. M. (2008). Comparing mathematics interventions: Cover copy compare versus an alternative intervention to increase accuracy and fluency in elementary students (Master's thesis). University of South Carolina, Columbia, SC. Available at: http://search.proquest.com/docview/304458463

[13] Poindexter, S., McLaughlin, T., McLaughlin, K., Derby, M., & Johnson, G. (2012). The effects of cover, copy, and compare on spelling accuracy with a middle school student with learning disabilities: A case report. International Journal of Basic and Applied Science, 1, 415-422.

[14] Cates, G. L., Dunne, M., Erkfritz, K. N., Kivisto, A., Lee, N., & Wierzbicki, J. (2007). Differential effects of two spelling procedures on acquisition, maintenance and adaption to reading. Journal of Behavioral Education, 16, 70-81. doi:10.1007/s10864-006-9019-5

[15] Codding, R. S., Eckert, T. L., Fanning, E., Shiyko, M., & Solomon, E. (2007). Comparing mathematics interventions: The effects of cover-copy-compare alone and combined with performance feedback on digits correct and incorrect. Journal of Behavioral Education, 16, 125-141. doi:10.1007/s10864-006-9006-x

[16] Erion, J., Davenport, C., Rodax, N., Scholl, B., & Hardy, J. (2009). Cover-copy-compare and spelling: One versus three repetitions. Journal of Behavioral

Education, 18, 319-330. doi:10.1007/s10864-009-9095-4

[17] Fazzari, D., McLaughlin, T. F., Neyman, J., & Everson, M. (2013). The differential, delayed and moderate effects of cover, copy, compare on spelling second grade core words for two elementary students with specific learning disabilities. International Journal of English and Education, 2, 307-316.

[18] Hoenike, R., McLaughlin, T. F., Derby, K. M., & Wilson, K. (2012). The effects of cover, copy, and compare spelling employing rereading, sounding out, and student selected rewards for two students with mild intellectual disabilities. Academic Research International, 2, 375-382.

[19] Hollingsworth, E., Keith, M., McLaughlin, T. F., & Derby, K. M. (2012). The use of cover, copy, and compare to improve spelling with a middle school student in a behavior intervention classroom. Academic Research International, 2, 302-307.

[20] Joseph, L. M., Konrad, M., Cates, G., Vajcner, T., Eveleigh, E., & Fishley, K. M. (2012). A meta-analytic review of the cover-copy-compare and variations of this self-management procedure. Psychology in the Schools, 49, 122-136. doi:10.1002/pits.20622

[21] Kosmac, A. M. (2010). Cover, copy, and compare: The analysis of a self-managed intervention to increase spelling accuracy across task and time (Doctoral dissertation). University of Cincinnati, Cincinnati, OH. Available at: http://rave.ohiolink.edu/etdc/view?acc_num=ucin1258476327

[22] Orcholski, C. (2009). Cover, copy, and compare: The effect of interspersal and a peer tutoring model on reading and spelling skills (Doctoral dissertation). University of Cincinnati, Cincinnati, OH. Available at: http://rave.ohiolink.edu/etdc/view?acc_num=ucin1248367544

[23] Poncy, B. C., Skinner, C. H., & Jaspers, K. E. (2007). Evaluating and comparing interventions designed to enhance math fact accuracy and fluency: Cover, copy, and compare versus taped problems. Journal of Behavioral Education, 16, 27-37. doi:10.1007/s10864-006-9025-7

[24] Zielinski, K., McLaughlin, T. F., & Derby, K. M. (2012). The effect of "cover, copy, and compare" on spelling accuracy of high school students with learning disabilities. American Secondary Education, 41, 78-95.

[25] Becker, A., McLaughlin, T., Weber, K. P., & Gower, J. (2009). The effects of copy, cover and compare with and without additional error drill on multiplication fact fluency and accuracy. Electronic Journal of Research in Educational Psychology, 7, 747-760.

[26] Poff, B., McLaughlin, T. F., Derby, K. M., & King, K. (2012). The effects of cover, copy, and compare with free time in math for elementary students with severe behavior disorders. Academic Research International, 2, 217-228.

[27] Smith, T. J., Dittmer, K. I., & Skinner, C. H. (2002). Enhancing science performance in students with learning disabilities using cover, copy, and compare: A student shows the way. Psychology in the School, 39, 417- 426. doi:10.1002/pits.10037

[28] Kaufman, L., McLaughlin, T. F., Derby, K. M., & Waco, T. (2011). Employing reading racetracks and DI flashcards with and without cover, copy, and compare and rewards to teach of sight words to three students with learning disabilities in reading. Educational Research Quarterly, 34, 27-50.

[29] Cieslar, W., McLaughlin, T. F., & Derby, K. M. (2008). Effects of the copy, cover, and compare procedure on the math and spelling performance of a high school student with behavioral disorder: A case report. Preventing School Failure: Alternative Education for Children and Youth, 52, 45-51. doi:10.3200/PSFL.52.4.45-52

[30] Manfred, A., McLaughlin, T., Derby, K., & Everson, M. (2015).The effects of a modified cover, copy, compare on spelling tests and in written compositions for three students with specific learning disabilities. Educational Research Quarterly, 38, 3-31.

[31] Berler, E., & Edelstein, B. A. (2013). Evaluation and accountability in clinical training. Berlin, Germany: Springer Verlag Science & Business Media.

[32] Wanzek, J., Vaughn, S., Wexler, J., Swanson, E., Edmonds, M., & Kimm, A. (2006). A synthesis of spelling and reading interventions and their effects on the spelling outcomes of students with LD. Journal of Learning Disabilities, 39, 528-543. doi:10.1177/00222194060390060501

[33] Alber, S. R., & Walshe, S. E. (2004). When to self-correct spelling words: A systematic replication. Journal of Behavioral Education, 13, 51-66. doi:10.1023/B:JOBE.0000011260.12674.a3

[34] Jaspers, K. E., Williams, R. L., Skinner, C. H., Cihak, D., McCallum, R. S., & Ciancio, D. J. (2012). How and to what extent do two cover, copy, and compare spelling interventions contribute to spelling, word recognition, and vocabulary development? Journal of Behavioral Education, 21, 80-98. doi:10.1007/s10864-011-9137-6

[35] Clements, K., & Gormley, K. (2012). Wonderful world 4. Hampshire, UK: Cengage Learning.