Teaching How to Study Expository Texts: A Programmed Instruction

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ABSTRACT – The objective of this study was to develop and evaluate the application of computerized programming to teach how to study expository texts. Principles of programmed instruction were used, and different target behaviors were focused on: inspecting the text, locating and highlighting important information, paraphrasing, building schemes, and conceptual maps, and elaborating questions on the topic. The activities were designed and carried out using Google Forms, Socrative, and Wordwall applications. Nine students from the 3rd to the 6th year of elementary school, from public and private schools, participated in this study. Participation was online and remote. The results showed an improvement in the performance of the participants in seven of the ten selected objectives for evaluation. In conclusion, it is possible to teach how to study expository texts through programmed instruction based on a clear description of the objectives involved in this repertoire.

KEYWORDS: computerized teaching, expository text, how to study, elementary school, Behavior Analysis, programmed instruction

Ensinar a Estudar Textos Didáticos: Uma Programação de Ensino

RESUMO – O objetivo do estudo foi elaborar e avaliar a aplicação de uma programação informatizada para ensinar a estudar textos didáticos. Utilizando princípios para a elaboração do ensino programado, teve-se como foco diferentes comportamentos-alvo: inspecionar o texto, localizar e grifar informações importantes, parafrasear, construir esquemas e mapas conceituais, e elaborar questões sobre o tema. As atividades foram elaboradas e realizadas utilizando os aplicativos *Google Forms*, *Socrative* e *Wordwall*. Participaram desse estudo nove estudantes do 3º ao 6º ano do ensino fundamental, de escolas públicas e privadas. A participação foi online e remota. Os resultados apontaram melhora no desempenho dos participantes em sete dos dez comportamentos selecionados para avaliação. Conclui-se que é possível ensinar comportamentos de estudo de textos didáticos por meio de uma programação de ensino a partir da descrição clara dos objetivos envolvidos neste repertório.

PALAVRAS-CHAVE: ensino informatizado, texto didático, aprender a estudar, ensino fundamental, Análise do Comportamento, programação de ensino

Although the behavior of studying is essential for the student's school trajectory, teaching this repertoire has been neglected in formal education, since most teachers are limited to teaching classes based on expository presentations and checking, usually by testing, what was learned by the student (Velasco, 2016).

There are many advantages to teaching behaviors that allow the student to learn better, such as the behavior of studying. First, studying enables learning, promoting positive results in the student's trajectory (Figueiral, 2015). Second,

because the student gradually becomes autonomous, that is, he will not depend only on the teacher to learn, which is beneficial for himself, in the present and the future, and for society itself (Skinner, 1972/1968) since "teaching is not transferring knowledge, but creating the possibilities for its production or construction." (Freire, 2014, p.24).

According to Skinner (1972/1968 p.121), studying is "reading in a special way" to increase the probability of remembering what was studied, in the absence of the material used. Teaching the student how to study is, for the author,

teaching techniques of intellectual self-governance, as the student, independent of others, manipulate contingencies to enhance the probability of their learning and, consequently, their success.

Studying is a complex class of behaviors (Kienen et al., 2017) that involves several academic responses that can be observed and measured (Regra, 2004; Rodrigues, 2005) and, therefore, can be an object of teaching. In this context, it is possible to systematize teaching objectives related to the behavior of studying. Velasco and Angelo (2022), based on activities that the student must perform, focus on different domains of studying: (1) organization and planning; (2) solving exercises and questions; (3) researching to clarify doubts, and (4) studying of the expository text.

Colombini (2022) conducted a review of Brazilian scientific production on studying between 1993 and 2015, analyzing 82 abstracts published on the SciELO and PePSIC platforms. It was found that nearly all the studies focused on teaching participants to plan/organize their available time, school materials, and study environment. Only a few studies addressed reading and writing repertoires, without providing a clear description of study behaviors. Additionally, it was observed that there was a growth in publications from 2004 onwards, and there are few research groups dedicated to this subject. Most of the research conducted is descriptive and employs standardized instruments. A significant portion of the studies is conducted in higher education settings, often utilizing the classroom as the research environment. Out of the studies that described interventions, 16 were identified, with a majority stemming from Cognitive Psychology and Behavior Analysis. These interventions were primarily conducted in group settings, with the researcher taking on the role of intervention facilitator.

The author asserts that most intervention studies have focused on teaching participants to plan their study time and environment, primarily conducted with higher education students (Colombini, 2022). Thus, it underscores the need to expand the scope of research targeting specific study behaviors. In contrast to the analyzed articles, the present study aims to teach elementary school students how to study expository texts – a pertinent behavior that allows students, even in the early years of their education, to cultivate autonomy and strategies for learning to learn (Figueiral, 2015).

Part of the reflections on specific study behaviors refers to reading material (Cortegoso & Ramos, 2004; Bilimonária & Almeida, 2008; Gurgueira & Cortegoso, 2008; Costa & Boruchovitch, 2009; Basso et al., 2013; Teixeira & Alliprandini, 2013; Dantas et al., 2015; García, 2015; Oliveira Ferreira et al., 2015), one of them involves the evaluation of intervention effects (Rosário et al., 2010). In this present study, these behaviors related to reading are referred to as "reading in a special way" (Skinner, 1972/1968 p. 121). In some of these works, there is mention of different repertoires: identifying extratextual elements; underlining, highlighting relevant information; asking questions about the text and answering them orally; rereading and orally presenting what was read; speaking or writing in one's own words/paraphrasing.

The "reading in a special way" (Skinner, 1972/1968 p. 121), or reading to learn, can be included in the "study of expository text" domain (Velasco & Angelo, 2022). The expository text is a textual genre with pedagogical objectives; it is prepared to facilitate student learning and arranged in a way that all readers will reach similar conclusions. This type of text is less argumentative and more descriptive, containing explanations. In addition, the language is designed to make reading accessible to non-specialists and the images have an illustrative and informative function (Martins et al., 2011).

In what regards studying expository texts, Góes and Boruchovitch (2020) mention some actions: reading slowly and repeatedly, doing a general reading and then going deeper into each idea, questioning yourself and establishing relationships with what you know, reviewing concepts, paraphrasing, synthesizing, underlining, taking notes, preparing summaries and outlines of what was read and writing down doubts. According to Velasco and Angelo (2022), a step-by-step guide to studying expository texts involves: (1) inspecting the text before reading and asking yourself what you already know about the subject; (2) underlining central ideas; (3) titling the paragraphs (define keywords); (4) making marginal notes; (5) constructing schemes or concept maps, and; (6) writing summaries using your own words.

Although in the literature there are indications of what a student should do to study texts, no proposal was found that carried out the teaching of this repertoire step by step, so that the student learns how to study and manages to do it autonomously. Thus, considering that studying expository texts is an essential repertoire for student autonomy, the present work evaluated the effectiveness of programmed instruction, using gamified applications, to teach how to study expository texts.

METHOD

Participants

Nine students from the 3rd to 6th year of elementary school, between eight and eleven years old, participated in this study, five from a public school and four from a private school (Table 1). After explaining to the participants and parents how the study would be carried out, all participants consented, and the parents signed the Informed Consent Form. The research was approved by the Research Ethics Committee of the PUCSP, CAAE 34698720.0.0000.5482 number 4.269.912.

Table 1
Information about the research participants.

Participants	Age	School Year	Institution
P1	8	3rd grade	Private
P2	9	3rd grade	Private
P3	9	4th grade	Public
P4	10	4th grade	Public
P5	10	4th grade	Public
P6	10	5th grade	Public
P8	11	6th grade	Private
P9	11	6th grade	Private
P10	12	6th grade	Public

Note: 1) Participant P7 withdrew from the study, hence their data is not included in the table.

Outline

The proposed study consisted of a Prerequisite Assessment, Initial Assessment, Application of the Planned Teaching, Partial Assessment, Final Assessment and Generalization Assessment.

Materials

Prerequisite assessment. The Prosody Assessment Instrument (Puliezi, 2015) and the Reading Comprehension Assessment (Saraiva et al., 2006) were used to identify reading and text comprehension prerequisites for each participant. It was established, as a criterion for participation, that it should be obtained at least 40% correct answers to the questions on the Reading Comprehension Assessment.

Initial, Final, and Generalization Assessments. The Pro-Academic Behavior Assessment Checklist Expository Text Study was used (Lima, 2020). Also, expository texts from elementary school were used for each of the evaluations, as follows: "Uso do solo" (Land use) (Rodrigues & Mendonça, 2015a) for the Initial Assessment; "A água na natureza" (Water in Nature) (Rodrigues & Mendonça, 2015b) for the Final Assessment. In the Generalization Assessment, an expository text provided by the participant and referring to content that he was learning at his school was applied.

Programmed Instruction. The program created to teach the study repertoire of expository texts was based on the steps proposed by Velasco and Angelo (2022). Each step contained information and activities to be carried out by the participant within the gamified applications, where responses were provided with indicative feedback on correct and incorrect answers, along with guidance toward the resolution of the subsequent question. There were six steps, adding up to 118 activities, referring to I. Inspecting title, subtitles, and items (22 activities); II. Inspecting images – pictures, graphs, and tables (20 activities); III. Finding important information (30 activities); IV. Making marginal paraphrases (19 activities);

V. Constructing schematic/concept maps (14 activities); VI. Creating questions about the theme (13 activities).

Below is an example of a screen from Step I, in which the student needed to match the answer to the image in the text (Figure 1).

Google Forms, Wordwall, and Socrative. These were the platforms used to allocate the programmed instruction. These freely accessible platforms served to structure the program, interact with the material, carry out activities, and release immediate feedback. All activities are available at (Lima, 2020).

Checklist for Assessment of Pro-Academic Behaviors: How to Study Expository Texts. This material (Figure 2) was utilized to assess the initial repertoire of the participants (Initial Assessment) and the repertoire after the implementation of the program (Final Assessment and Generalization). It consists of a description of observable actions for each step of the text study, along with their corresponding scores.

Procedure

The sessions were conducted online in a researcher-participant format; they took place during the COVID-19 pandemic period (2020). In total, there were 10 weekly sessions with each participant, lasting approximately 30 minutes each. Before the remote meetings, the researcher delivered all the materials that would be used throughout the study to the participants' homes. The sessions occurred via video call and were recorded; before starting the activities, the participants were trained by the researcher online to navigate the applications. The complete program description can be found in Lima (2020).

Prerequisite Assessment. It was done to identify whether the participant was able to read and understand texts since following the instructions of the program was necessary for him to read them. Oral reading was requested, and nine questions related to the text were asked; then, six questions were applied, still about the text read, in a quiz format. All participants met the prerequisite assessment criteria.
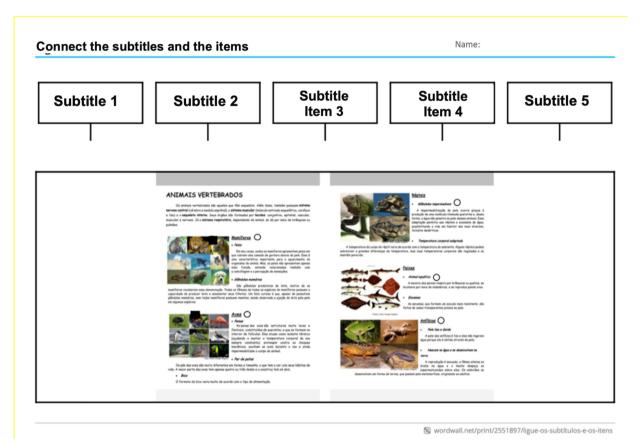
Figure 1. Exercise about titles and items

Initial Assessment. The participant was instructed to take the expository text and study it as he usually studies school texts, also asking him to describe his actions while carrying out the activities. The researcher observed the participant's behaviors when studying the text and identified them according to the Checklist. When the participant claimed to have finished, the researcher asked: "1) How do you usually study? 2) Do you usually inspect the text before reading it? 3) Do you usually identify important information to highlight? 4) Do you usually build summaries, schematics, or concept maps? 5) Do you usually ask questions about the topic you studied?".

Teaching. During the computer-aided teaching activities, the researcher presented Google Forms templates with each step of the program and asked each participant to read the examples and continue with the activities. The activities were interactive, and the platform itself provided feedback on correct and incorrect answers, allowing the students to redo the activity when needed. The programmed instruction included the following steps: (I) Inspection of title, subtitle, and item; (II) Inspection of images (figures, graphs, and tables); (III) Locating important information; (IV) Creating marginal paraphrases; (V) Constructing schemas/concept maps; and (VI) Developing questions about the topic.

For participants with minimal performance in the prerequisites (40% of correct answers), the researcher helped them to read the words that were not read by them. Besides, to keep them engaged, in addition to the feedback released by the application, the researcher also said "Congratulations, you were right" (when it was right), "You can try again" (when it was wrong); in the latter case, she also answered questions or responded to participants' comments.

Partial Assessments. They were composed of questions referring to each step applied, without releasing feedback and without interference from the researcher. The participant was instructed to perform the activities. Regardless of the result obtained, he went on with the teaching steps. The collected data included: (1) observation of behaviors and scoring based on a checklist; and (2) questions about the topic of each step in the program.

Final Assessment. The same procedure as the Initial Assessment was performed. After the questioning, as described above, the participant had a new opportunity to perform the activities he wanted. The product of the activity was also assessed – the concept map constructed by the participant.

Generalization Assessment. The participant was instructed to study the expository text as he learned with the program. The product of the activity was also assessed – the concept map constructed by the participant. There was no questioning, nor new opportunity for execution. The researcher observed the participant's behaviors when studying the text and identified them according to the Checklist.

PRO-ACADEMIC BEHAVIOR ASSESSMENT CHECKLIST EXPOSITORY TEXT STUDY

Student:

Professional:

Supervisor:

ASSESSMENT

Date

Total

		3	**2**	**1**	**0**	**AVALIAÇÃO**
EXPOSITORY TEXT STUDY						
ET01	**Inspect the text before reading**	Read titles, subtitles, highlighted words, figures, tables, maps, and charts before reading the text	Skims through the pages of the text, looking at tables, maps, and charts	Reads the title of the text	Does not inspect the text before reading	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET02	**Discuss the general topic of the text before reading**	Ask spontaneous questions and/or make comments about the text based on the elements inspected	Asks questions and makes comments about the text, but without relating them to prior repertoire and inspected items	Attempts to deduce the content without relating it to the inspected items	Does not ask questions or make comments about the text before reading	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET03	**Locate and infer information from the text**	Deduce implicit information from the text based on the explicitly provided information	Describes explicit information in the text without identifying implicit relationships	Describes the central theme of each paragraph and the overall subject of the text	Does not identify explicit information in the text	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET04	**Paraphrase the read text**	Explains correctly what was read in one's own words	Answers questions about the text read	Repeats what was read in the author's words	Does not explain what was read	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET05	**Highlight graphically the central ideas of the text**	Graphically highlights the central ideas of the text (underlines, circles, marks, signals, draws arrows, and constructs schemas)	Highlights central ideas without underlining	Highlights information arbitrarily	Does not highlight central information in the text	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET06	**Provide titles for the paragraphs**	Gives a title under the control of the central idea of the paragraph	Gives a title under the control of ideas that are not central	Copies part of the paragraph to give a title	Does not give a title to the paragraph	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET07	**Make marginal notes in the text**	Makes notes synthesizing important parts, answering previous questions, formulating questions, and establishing relationships	Makes notes about synthesizing important parts	Makes irrelevant notes or copies part of the text	Does not make marginal notes in the text	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET08	**Construct schemas or concept maps of the text**	Elaborates schemas or mind maps with central ideas using main ideas from the text, establishing relationships between them, efficiently and with visually organized elements	Elaborates schemas or mind maps with central ideas, but without being visually organized	Elaborates schemas or mind maps without central ideas or with an excess of information	Does not elaborate schemas or mind maps	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA
ET09	**Write a summary in one's own words**	Elaborates summaries by paraphrasing central ideas, making analogies, and contrasting ideas	Makes summaries with own words of central ideas	Makes summaries by copying central ideas	Does not make summaries	3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA 3 2 1 0 NA

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Figure 2. Evaluation Behavior Checklist

Table 2
Results of the Initial, Final, and Generalization Assessments of each participant based on the behavior of studying the expository text.

	Items Participants	01	02	03	04	05	06	07	08	09	Elaborate questions	Total	%
Initial Assessments	P1	1	0	0	0	0	0	0	0	0	No	**1**	3.7%
	P2	1	3	2	0	0	0	0	0	0	No	**6**	22.2%
	P3	1	0	0	0	0	0	0	0	0	No	**1**	3.7%
	P4	1	0	0	0	0	0	0	0	0	No	**1**	3.7%
	P5	1	0	0	0	0	0	0	0	0	No	**1**	3.7%
	P6	0	0	0	0	0	0	0	0	0	No	**0**	0.0%
	P8	1	3	0	0	0	0	0	0	0	No	**4**	14.8%
	P9	1	3	0	0	0	0	0	0	0	No	**4**	14.8%
	P10	1	2	0	0	0	0	0	0	0	No	**3**	11.1%
Final Assessments	P1	3	3*	1	1*	1	0	0	0*	0	Yes*	**9**	33.3%
	P2	3*	3	3	3	3	1	0	3	0	Yes	**19**	70.3%
	P3	3*	3	2	3	1	1	0	3*	0	Yes *	**16**	59.2%
	P4	3	3	1	1	1	0	0	0*	2	Yes *	**11**	40.7%
	P5	2*	1*	1	1*	1*	0	0	0*	0	Yes	**6**	22.2%
	P6	2	1*	2	1*	3	0	0	3*	0	Yes	**12**	44.4%
	P8	3*	3*	3	3	3	0	0	3	0	Yes *	**21**	77.7%
	P9	3	3	3	3	3	3	0	3*	0	Yes *	**21**	77.7%
	P10	2*	2*	1	1*	2*	0	0	3*	0	Yes *	**11**	40.7%
Generalization Assessment	P1	3	2	1	0	1	0	0	0	0	No	**7**	25.9%
	P2	3	3	3	3	3	0	0	0	3	Yes	**18**	66.6%
	P3	2	2	3	1	3	0	0	3	0	Yes	**14**	51.8%
	P4	3	3	1	0	3	0	0	0	0	Yes	**10**	37.0%
	P5	3	3	1	0	3	0	0	0	0	Yes	**10**	37.0%
	P6	3	3	3	3	3	0	0	3	0	Yes	**18**	66.6%
	P8	3	3	3	3	3	0	0	3	0	Yes	**18**	66.6%
	P9	1	3	3	3	3	0	3	3	0	No	**19**	70.3%
	P10	2	3	1	1	2	0	0	0	0	No	**9**	33.3%

Notes: 1) The * indicates that the behavior was emitted after the researcher questioned about it.
2) Participant P7 withdrew from the study, hence their data is not included in the table.

RESULTS

In the present paper, it was decided not to present the results of the partial evaluations, focusing specifically on the results obtained, per participant, in the Initial, Final, and Generalization evaluations. Table 2 shows the points obtained for each item evaluated by the checklist, the total points achieved, and the percentage of correct answers obtained by each participant. The percentage data refers to the scores of the items analyzed in the checklist, excluding the "elaborate questions" step.

Observing the evaluation before teaching, it is verified that the best performance was 6 points, that is 22% of correct answers, by only one participant (P2). The others scored 1 to 4 points, that is, a maximum of 14% of correct answers. The average score of correct answers for the group in the Initial Assessment was 2.3, which corresponds to 8% of correct answers concerning the total score.

About the items, before teaching, it appears that the best performance was in item 02. In this item, four participants obtained scores 2 (P10) and 3 (P2, P8, and P9), which correspond, respectively, to "Asking questions and making comments about the text, but without relating them to the previous repertoire and the inspected items" and "Asking

questions and/or making spontaneous comments about the text based on inspected elements".

After teaching, on the other hand, the maximum score was 21 points, that is, 77% of correct answers, a level reached by two participants (P8 and P9). Two other participants had 16 and 19 points, corresponding, respectively, to 59% (P3) and 70% (P2). The other participants (P1, P4, P5, P6, and P10) scored between 6 and 12 points, that is, between 22% and 44% of correct answers. The average score of the group in the Final Assessment was 14 points, which corresponds to 51% of correct answers.

Comparing the Initial Assessment with the Final Assessment, it becomes evident that there was a positive change in the participants' performance after they were subjected to the programmed instruction. However, it should be noted that for some participants, correct responses occurred after the researcher questioned them about whether they had completed the required steps, providing them an opportunity to perform the step if they had not done so.

The positive change is more evident when considering what happened in the Generalization Test, in which new expository texts were used. It was found that the maximum score was 19 points, which means 70% of correct answers, were obtained by one participant (P9); another three participants (P2, P6, and P8) got close results to this index, obtaining 18 points (66% of correct answers). The worst performance (from a single participant, with 25% of correct answers) was slightly higher than the best performance obtained before the teaching. The group's average of correct answers was 13.6 points, which corresponds to 59% of correct answers, when before the teaching it was 2.3 points (8% of correct answers).

There is an increase in the repertoire of most of the behaviors taught, both in the final and in the generalization assessments, as in the items: 01 – Inspecting the text before Reading it; 02 – Discussing the general subject of the text before reading it; 03 – Finding and inferring information from the text; 05 – Graphically highlighting the central ideas of the text and elaborating questions. In two repertoires (04 – Paraphrasing the text after reading it and 08 – Constructing schemes or concept maps of the text), it is observed that there was a positive effect, but at a lower level. In the repertoires 06 – Titling the paragraphs, 07 – Making marginal notes in the text, and 09 – Writing a summary in your own words, there was no positive effect of the program.

Thus, the results showed improvement in participants' performance in seven out of the ten evaluated behaviors. It is important to highlight that, if the change in performance during the Final Assessment was influenced by the hints provided by the researcher, a factor that could potentially weaken the effect of the teaching program, such relativization does not apply to the Generalization Assessment. In the Generalization Assessment, behaviors occurred spontaneously and without prior hints, allowing us to conclude that the proposed program was effective in teaching how to study didactic texts.

DISCUSSION

As pointed out by Colombini (2022), who reviewed the Brazilian scientific production on studying between 1993 and 2015, almost all intervention research focused on teaching the participant to plan the time and the study environment and was carried out with higher education students. Going in a different direction, in the present work, the objective was to teach elementary school students to study expository texts. This behavior is relevant for students, even in the early years of their education, to develop autonomy and strategies for learning to learn (Figueiral, 2015).

The elaborated programmed instruction specified, in behavioral terms, the step by step of studying expository texts (Velasco & Angelo, 2022). Online and interactive activities were developed, with the purpose not only of teaching, but also of motivating the participants to remain engaged, since for the teaching to be effective, it must allow the student to be active, allowing a high opportunity for the emission of the target behaviors, and providing performance feedback (Skinner, 1972/1968).

As defended by Góes and Boruchovitch (2020), the behavior of studying can be a subject of systematic teaching. For this purpose, a complex skill like studying expository texts needs to be broken down into specific objectives. These behaviors, or actions, were mentioned in the present study and described throughout the programmed instruction.

During the implementation of this program, it was observed that clear and direct descriptions of what the participant should do in each step, such as inspecting titles, subtitles, and items, were essential. Immediate consequences following the completion of each activity in the form of gamified games were also crucial. These aspects are described in the literature as necessary for teaching procedures (Moroz & Luna, 2013).

The Prerequisite Assessment was done to identify whether the students understood the information read since it is only possible to study an expository text if this skill is part of the student's behavioral repertoire. It was verified that the proposed reading level (minimum of 40% correct answers) was reached by all participants.

In the Initial Assessment, participants demonstrated that they did not know what to do when someone asked them to study, which means, they did not have a repertoire to study expository texts. It is worth adding that, when the questioning was made, the participants' responses indicated that they did not know how to define the actions related to studying or depended on the description of others to report

what they should do. When asked to study the expository text, most of them started by just reading the text, without any prior inspection or reflection on their actions. Those who did textual inspection only asked questions and comments about the text at the time of inspection, but without relating it to the previous repertoire and inspected items. These results confirm, as highlighted by Cortegoso and Botomé (2002) and Velasco (2016), that the direct and systematic teaching of studying is neglected.

In the Final and Generalization assessments, the programmed contingencies increased the occurrence of text study behaviors and demonstrated the participants' ability to manipulate them to perform the steps of the program – inspecting and discussing the text subject (items 01 and 02), locating, inferring, and highlighting information (items 03 and 05), and preparing questions on the topic. With a lower success rate, yet still significantly higher than that obtained in the pre-test, they were able to paraphrase the text read (item 04) and construct schemes and concept maps (item 08).

Although in the Final Assessment, some behaviors occurred after the researcher questioned what should have been done, in the Generalization Assessment there was an increase in the emission of studying behaviors when compared to the Initial Assessment, even without any type of tip provided by the researcher.

Considering that in the Initial Assessment, the participants practically did not show studying behaviors; in the Final Assessment, a large part of such behaviors was emitted, even with the presence of a hint in the form of questioning; and in the Generalization Assessment they occurred without the need of tips, it can be concluded that there was a positive effect of the programmed instruction in the development of the repertoire of studying expository texts.

Considering that the participants are elementary school students, such positive effects indicate the possibility of applying this programmed instruction in the classroom context, which would favor a greater number of students in acquiring the repertoire to study. Furthermore, it is an illusion to believe that in an unequal country like Brazil, all children have access to computers in their homes, a necessary condition to carry out activities as occurred in the present work (it is worth informing, as a complement, that many of the possible participants, indicated by parents and teachers, were unable to participate due to the lack of a computer at home). Therefore, it is also necessary that the present

programmed instruction be applied in a school context, both in private and public institutions, in future studies.

Focusing on behaviors that were not developed – giving titles to paragraphs (item 06), making marginal notes (item 07), and writing a summary in one's own words (item 09) – some hypotheses can be raised. It is possible that the participants considered that the items mentioned would be replaceable by constructing schemes and conceptual maps, which contained textual production, and therefore those appeared less frequently. It is also possible that the teaching steps of such behaviors have a high level of difficulty – since it is about textual production. Furthermore, teaching conditions were not programmed to promote the development of these repertoires, due to time constraints and the significant number of activities that participants already needed to perform.

In both hypotheses, vulnerability is indicated in these steps of the program, which should be reformulated and tested in new studies. Additionally, it should be noted that text production was not the focus of the program but rather served to identify whether the target behavior was executed, especially those that could be covertly emitted (thinking about the topic, covertly formulating questions). Therefore, a reformulation targeting the repertoire of text formulation could potentially enhance student learning.

It is important to consider the limitations resulting from the historical moment in which we live, with the events resulting from the pandemic and the suspension of classes declared in March 2020 which lasted throughout the school year. This hampered both the selection of participants and the application of the research itself. Despite the limitations of this context, it was possible to apply the online program.

Additionally, we can consider that one limitation was the sole application and data assessment being carried out by the instructor. It is suggested that future studies involve a judge to corroborate the evaluation, aiming to reduce potential data biases. Lastly, a methodological limitation was the absence of teaching conditions programmed to promote the development of repertoires that required written production, such as making marginal notes and writing summaries in one's own words.

The results of this study are significant in demonstrating that it is possible to teach behaviors related to studying didactic texts through an instructional program utilizing computerized resources, thereby opening possibilities for both online and in-person applications.

FINAL CONSIDERATIONS

There are many advantages in teaching, in addition to the content and skills defined by the Base Nacional Curricular Comum – BNCC (Brasil, 2018), behaviors that enable students to learn better, such as the behavior of studying.

This reason is because studying makes learning effective and allows the student to become autonomous, being prepared for the challenges of the educational process and the labor market (World Economic Forum, 2018).

It is argued that the behavior of studying should be taught from the early stages of education, according to each student's repertoire. Schools must teach such behaviors systematically, directly, and consistently throughout the educational journey, whether by utilizing computerized programs or any other teaching resources.

Additionally, there is a suggestion to develop self-instructional material, like what has been previously done with another repertoire, such as essay writing (Botomé and Gonçalves, 1994).

Finally, it is argued that researchers from different approaches whose object of study is "studying" dialogue reach a consensus on this process, to strengthen this area, and demonstrate the importance of the theme as part of the school curriculum.

The present study provides significant contributions to the field, demonstrating the possibility of programming conditions to develop academic repertoires, such as studying expository texts. This is particularly noteworthy in terms of instructional systematization and the target audience (elementary school students). The highlighted repertoire holds great importance as it serves as a prerequisite for cultivating other crucial repertoires, thereby enhancing students' chances of academic success.

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