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Effects of the Reading Practice Platform (Readvise) in Developing Self-Regulated Reading Skills of Tertiary Students in L2 Learning

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Abstract: Reading, as one of the four basic language skills, activates language learning. Tertiary-level students often undermine this opportunity and rarely read anything in addition to their course assignments. Rapid technological developments offer additional possibilities in this domain. The present study aims to define to what extent the specifically designed web-based reading platform (Readvise) can support and improve students' second language reading skills with the intent to transform them into self-regulated reading (SRR) skills. The focus of this design-based research is 39 undergraduate students who study English as a second language (L2). According to the results, through the elimination of the main barriers and uncertainties declared by the students when reading independently in L2, the platform contributes to the advancement of L2 reading skills of the students, encourages changes in their L2 reading behaviour, fosters metacognitive abilities, and reinforces intrinsic reading motivation. When supported consistently through the platform, these features can ensure the development and enhancement of SRR skills in the long run, contributing equally to the improvement of the students' L2 proficiency level.

Keywords: self-regulated reading; Readvise reading platform; motivation; self-regulation; behavior; metacognition

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1. Introduction

In times of globalization and the changing labour market, foreign language proficiency is becoming a natural competence and central necessity. Assessing the general importance, higher education institutions incorporate foreign languages as a separate discipline in almost all study programmes. They design curricula that consistently cover the four basic language skills—speaking, listening, writing, and reading. The latter is deemed to be "one of the most resourceful methods [. . .] to improve [. . .] writing and speaking" [1] (p. 20) but is often undermined by students when mastering languages. As a result, reading in a foreign language on top of any assigned materials gains popularity among a very limited number of students.

Being the "most accessible exposure" to language learning [2] (p. 21), reading, as some scholars claim it, yields more significant dividends when accompanied by metacognition [3,4]. This occurs when students question their reading purpose, select reading materials and strategies, analyse content, or evaluate how well they comprehend. Whenever metacognitive strategies (planning, progress monitoring, and reflection to regulate reading process) are being deployed, we start dealing with self-regulated reading (SRR) [5] (p. 1).

To better grasp it, a broad range of techniques have been adopted, such as questionnaires [6], interviews [7], observations [8], stimulated recalls [9], and think-aloud protocols [10], to name a few. Rapid technological developments within the recent past

have further contributed to the list through reading applications and reading platforms. The focal concern, therefore, lies in the possibilities that technology offers when it comes to empowering SRR skills of those who learn English as a second language (L2).

The current study seeks to support and develop tertiary-level students' L2 reading skills with the help of the specific web-based reading platform (Readvise). The platform aims to empower the metacognitive abilities of the students when reading in L2 with the intent to transform them into SRR skills. To assess the effectiveness, the following questions were addressed:

1. To what extent can the platform and its reading activities improve L2 reading skills of the students?
2. What difference can the Readvise reading platform stimulate in their L2 reading behavior?
3. How would the students appraise changes in their post-intervention L2 reading attitude and motivation?
4. To what extent can the platform support students' SRR skills in L2 learning?

The platform aspires to attain it while accounting for the characteristics of the target group and specific difficulties it faces when reading independently.

2. Literature Review

2.1. Reading in L2 and Motivation

Reading as an individual activity is advantageous in many aspects, especially in L2 learning. Linguistically, reading avails to enhancing comprehension skills of L2 texts, reading rates, spelling, writing fluency, and speaking [11,12]. It contributes to vocabulary acquisition [13], which in turn determines the comprehension level of reading texts making these variables interconnected [14] (p. 323). The metalinguistic approach connects L2 reading comprehension with "the ability to reflect on and manipulate the structural features of language" [15] (p. 2), namely syntax, morphology, semantics, etc. It offers the opportunity to get closer to the target language culture. This fact is rather overlooked, while there is a recent tendency to regard culture as the fifth skill in the present list of four [16,17].

Concurrently, the merits of L2 reading depend much on reading motivation. By definition, it implies the engagement level with the text, persistence, and the amount of time and effort invested in comprehending it, despite possible challenges [18,19]. In line with its essence, reading motivation is differentiated into two types. Extrinsic motivation is set to "nonsignificantly or negatively relate to comprehension performance" [20] (p. 428). The reason comprises the assumption that extrinsic L2 readers rarely enjoy reading to the extent that would encourage them to read in their free time. They practise less and stay neutral to the increase of reading-related outcomes unless it is not required for their academic or work-related reasons [21] (p. 4). Intrinsic readers are, by contrast, enkindled with subjective reasons to read more. This distinction materializes in dissimilar reading amounts, which cannot help but affect language learning progress. The attitude becomes explicit in groups with intermediate proficiency levels where L2 reading is considered "necessary to their study" [22] (p. 50). In groups with low language proficiency, readers' intrinsic motivation is distorted with L2 reading anxiety and attitude in their language learning success [23]. The last two variables also define the choice of L2 reading strategies [24].

The proper selection of reading strategies is substantially important since L2 reading is different from L1. According to Hudson, there is a vast cognitive difference because L2 readers do not habitually speak the language the way they do L1 and often start reading in L2 not "knowing much about the grammar or the vocabulary [25] (p. 60)." In many instances, teachers view L2 texts as mere means to teach reading and "ensure the curriculum coverage of [. . .] set objectives" [26] (p. 60). Applied strategies may come in a rather fragmented way and are not "always [. . .] directed sufficiently at producing enthusiastic, independent readers" [27] (p. 23). However, independence in L2 reading is a prominent feature. It allows moving beyond the conventional limits set by educators tending to comply with academic curricula and entrusts with certain questions, such as what to

read, why to read, how to read, what pace to choose, etc. In this setting, self-regulation becomes important.

2.2. Self-Regulation and Self-Regulated Reading (SRR) in the Context of L2 Learning

In educational settings, self-regulation is predominantly associated with learning. Self-regulated learning (SRL) implies active metacognitive, behavioural, and motivational participation of learners in their learning process [28,29]. In other words, this is the type of learning where learners self-generate "thoughts, feelings, and behaviours that are oriented to attaining goals [30] (p. 65)." Nowadays, existing theories attempt to discuss SRL, seeking to reveal other frames of mind and views. While none of them is dramatically contrasting, they all accentuate some distinctive features in SRL against the entire background.

According to Zimmerman, self-regulation should be viewed from a social cognitive perspective [29] (p. 14). With every novel task or goal, one needs to consider environmental, behavioural, and personal factors which would tailor self-regulation to help achieve goals. One should likewise account for the self-regulatory processes affiliated with three distinct phases, namely forethought, performance, and self-reflection, adherence to which can increase self-regulation [29] (p. 16), (Table 1).

Table 1. Self-regulation: phases and processes.

Forethought	Task analysis	Goal setting Strategic planning
	Self-motivation beliefs	Self-efficacy Outcome expectations Intrinsic interest/value Goal orientation
Performance	Self-control	Self-instruction Imagery Attention focusing Task strategies
	Self-observance	Self-recording Self-experimentation
Self-reflection	Self-judgment	Self-evaluation Causal attribution
	Self-reaction	Self-satisfaction/affect Adaptive-defensive

Zimmerman additionally offers the four-level scheme geared towards developing regulatory skills. The initial level is for observation, implying that learners generate features of the skill when observing task performance or the learning process of some model. The model frequently sets "the performance standards, motivational orientations, and values that observers can use personally [29] (p. 29)." From mere observations, learners move to the emulation level, where they imitate the actions of the model or acquire general patterns of its functioning. Self-control comes into play when "learners master the use of a skill [. . .] outside the presence of models" [29] (p. 30). This final level is attained when learners are able to adjust their performance to diverse conditions, be it personal or contextual.

In learning environments, self-regulation can be dominated by the so-called 'learning episodes.' Boekaerts explains these as a setting "in which a person is invited, coached, or coaxed to display context-specific, goal-directed learning behavior [31] (p. 418)." These learning episodes never occur spontaneously, being rather fragmented, accumulative, and goal-deprived. It becomes difficult to instill self-regulated skills since learners barely know about their needs, goals, and aspirations after being oriented mostly by teachers. Hence robust environment for SRL development arises when "opportunity and felt necessity coincide [31] (p. 421)."

Pintrich observes that in self-regulatory activities, the power mediates "the relationships between individuals and the context, and their overall achievement" [32] (p. 452). The SRL model offered by him encompasses forethought, planning, activation, monitoring, control, reaction, and reflection (phases) on the one side, and cognition, motivation/affect, behavior, and context (areas) on the other side [32] (p. 454). This four-phase and the four-stage compounded SRL process is non-static and covert. Neither has he prompted it to be rigid or linear since the sequence of SRL can go flexible with no strict compliance with the provided order.

Against this background, SRR presents itself as the type of reading when metacognitive strategies, such as planning, progress monitoring, and reflection, are applied to regulate it [5,33]. This definition resembles Zimmerman's social cognitive model of self-regulation. Given that, forethought can be observed at the stage when readers select a text and define reading strategies. Interest and reasons for reading it become influential. The core process of reading, along with the application of reading strategies, enforces performance that requires reading engagement and a certain level of persistence. Self-reflection is ensured with self-assessment of text comprehension and the used reading strategies. Reflections of this phase can be attributed to various causes like invested efforts or complexity level of the chosen text and the need to introduce any changes in the strategy with the next reading material. Consequently, if we attempt describing self-regulated readers in terms of their characteristics, these are the readers who set goals and select reading strategies, empowered with intrinsic motivation and high self-efficacy, who monitor their reading comprehension and pursue strategies to understand better and stay focused, and who reflect on performance by evaluating their previous reading experience.

Researchers also highlight motivational components of reading engagement, namely knowledge building from texts, autonomous behavior and choice in reading activities, real-life interactions on similar topics, provision of interesting reading texts of different levels, collaborative support in reading [34] (pp. 179–182). It has been exercised as a theoretical model for SRR based on corporate functioning of "cognitive strategies, motivational processes, conceptual knowledge, and social interaction among readers" [34] (p. 177). When practising cognitive strategies (summarizing, inferencing, scanning, comprehension monitoring, choosing keywords, and self-testing) as an example, readers exercise their self-regulation. This is notable in L2 learning: it prompts language learners to "take note of their progress towards goals, which conveys to them that they are capable of writing," reading, speaking, and listening, and "enhances their self-efficacy and intrinsic motivation" [35] (p. 3). At the same time, metacognitive experience defines language learning success and serves as "a great mobiliser for students who aspire to be self-regulated or autonomous learners" [36] (p. 11).

3. Materials and Methods

The attempt to observe the possible effects of the Readvise reading platform on the students' reading progress and SRR revealed the need to use a design-based research method [37,38]. Interventions tailored following this method showcased "a commitment to understanding the relationships among theory, designed artifacts, and practice" [39] (p. 5). To confirm a high level of accuracy in data analysis, both qualitative and quantitative research methods were applied. The mixed research method ensured an integrated approach and fostered consistent consideration of all data obtained through the platform and research instruments.

3.1. The Readvise Reading Platform

A thorough analysis of available reading platforms (e.g., Storyworld, Litpick, Bookshare, Skybrary, etc.) showed that they are almost similar, either target children and kids, or offer an electronic collection of books and short stories. Monthly and yearly subscriptions to such platforms secure full access to specific libraries or apply to students and readers from particular countries (e.g., Bookshare is free for US schools and US students only).

These observations encouraged the creation of a special reading platform matching the specificities of the target group and this study. At the outset, an anonymous online survey was initiated to determine the reasons for indifference to reading more in English other than assignments. Fifty-five undergraduate students (Southern Federal University, Russia) volunteered to share their concerns, which were duly considered (Table 2).

Table 2. Reasons for not reading in English other than homework assignments.

Reason	Percentage (%)
I get tired of looking up new words in the dictionary	23
I do not like what I choose for reading	22
I start reading and then I forget	18
I lose my motivation quickly	17
It is difficult	14
I see no means how it can help improve the language	6

The results of the online survey helped to set up the platform (The platform was designed with the Wix template (www.wix.com) and is available at www.readvise.org (accessed on 20 January 2022). The name was generated based on the blending of the verbs to read and to advise') according to the group needs and included three sections: Start, Read, and Discuss (Figure 1).

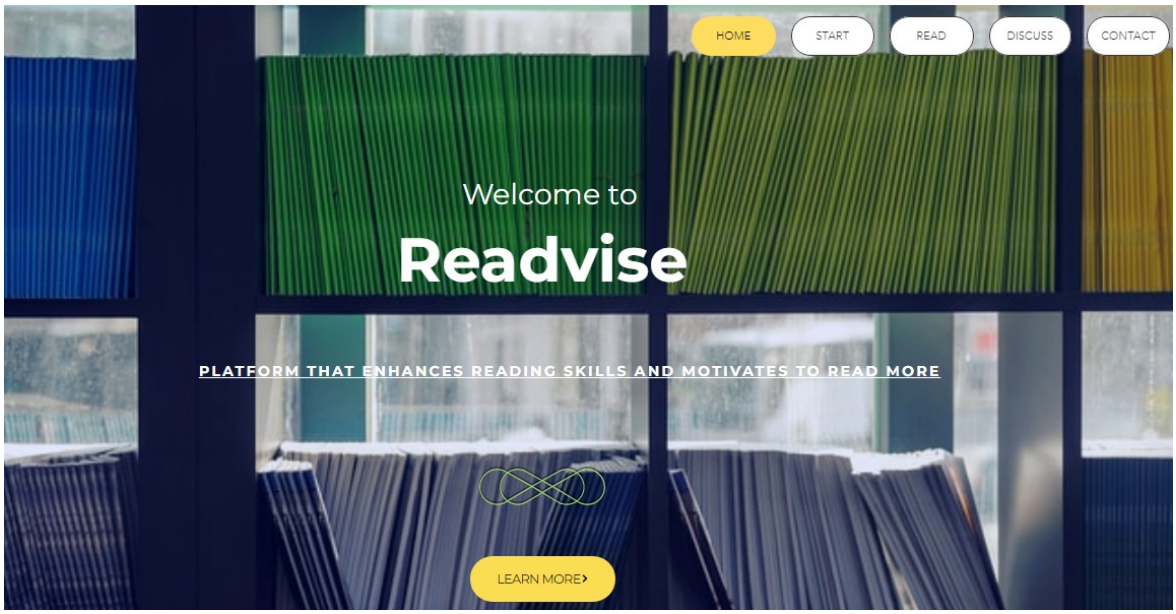

Figure 1. Readvise reading platform: homepage.

Start led to two subpages. 'Test your English' encouraged students to submit an English placement test to determine their level of English to select correct reading materials, fill out a questionnaire on reading preferences to be taken into account when collecting new materials, and to specify what they were reading then to determine the level of their reading engagement before joining the platform. The second subpage—'Empower reading skills'—provided reading strategies and guidance on how to increase reading comprehension, vocabulary learning, and reading rate.

The second section offered the option to fill out Reading Diary A. The students selected articles and started core reading activities by being redirected to the 'Enjoy reading' subpage. After completing the reading, they were urged to articulate their thoughts in Reading Diary B (Section 3.3.3) and pass tests on the articles that were read.

Opportunities to discuss the articles that had been read and tested were presented in the concluding section. Discussions took place three times a week for 45–60 min (Discussions were organised through the Microsoft Teams platform. The University's online classes were conducted operating the same platform which could explain the choice of the software. The introduction of another form of communication could have raised technical uncertainties for the group and affected the quality of its performance). A list of recommended videos and thought-provoking questions were sent in advance for each article. Towards the end, the students completed Reading Diary C (Section 3.3.3) on the same page. This Diary was intended to elicit their general opinion on the platform and asked for any suggestions or ideas.

3.2. Participants

Online and offline presentations on the purpose and functionalities of the Readvise reading platform were given to the students who volunteered to participate in the initial survey. As a result, thirty-nine undergraduate students expressed their desire to practise their reading skills through the platform. Each student completed the English placement test to determine their language proficiency level to select the correct reading materials. The tests were compiled based on the placement test samples circulated by the Department of English for Humanities of the same University. The results were identified according to the CEFR six levels (A1, A2, B1, B2, C1, and C2). Table 3 demonstrates the demographics of the 39 participants (age range: 18~26/Mean 22.2) based on gender and language proficiency.

Table 3. Participants' demographics.

Gender	**Number**
Female	26
Male	13
English proficiency level	
A1	0
A2	6
B1	11
B2	18
C1	4
C2	0

3.3. Data Collection

To secure the reliability of research findings, triangulation was applied as the focal strategy to examine the validity of the derived data by converging them from different sources [40,41].

3.3.1. Interviews

Interview requests were sent to the target group as soon as it was assembled. Questions related to reading habits, reading motivation, general attitudes towards reading in English, and entailing hardships were asked. Nineteen personal interviews were conducted online, while the rest were arranged in person (39 in total). Questions were open-ended, fostering the opportunity to retrieve diversified data in the end. After the intervention, online interviews were arranged with the aforesaid participants again (Supplementary Materials).

3.3.2. Surveys

At the start, students completed an online survey questioning their reading preferences (Supplementary Materials). Data collected through this instrument helped define their preferred volume of L2 reading materials, types of preferred articles, and their reading progress with whatever they were reading other than their assignments. The information

gathered contributed to the comprehensive picture of the students' reading progress and their motivation.

To help empower reading skills, Readvise provided a separate section ('Empower reading skills') sharing essential strategies for reading, better comprehension, and remembering words easier and faster. An online survey (Supplementary Materials) followed to evaluate how well the group had mastered that information. The surveys were produced with the help of MS Forms and circulated online.

3.3.3. Reading Diaries

While progressing through the platform activities, the study participants completed three online diaries: Reading Diary A, Reading Diary B, and Reading Diary C (Supplementary Materials). They were named accordingly for the sake of convenience.

Reading Diary A comprised questions (six in total) revealing their pre-reading determination, such as: How much time can you dedicate to reading English texts per week? How many articles do you plan to read with the help of the Readvise platform? Would you participate in online discussions of the articles you read?

Data derived from Reading Diary B helped to identify how much time a student spent on reading a selected article; whether the available vocabulary lists with potentially unfamiliar words were helpful (Supplementary Materials); how s/he used the Quizlet platform cards to memorize the words. The Diary retained a recurrent nature with every article selected for reading. The reading collection of the Readvise platform included articles exclusively. The choice of articles in favor of books or stories could be explained by a rather intense University schedule of the students, as well as the dynamic nature of articles. The latter allowed students to refer to the content and grasp the vocabulary from various domains within a short period of time.

Reading Diary C was to be completed at the end of the intervention. The questions analysed to what extent students found the reading platform helpful and consistent with their initial expectations, what activity they liked more, etc.

The Diaries were compiled online through MS forms. Questions were provided in English and partially in Russian. Replies for the open-ended questions were accepted in both languages. That linguistic flexibility was applied to eliminate any language barriers in the expression of their opinion, given the varying levels of L2 proficiency of the target group.

3.3.4. Tests

To assess reading comprehension and reading skills, each student completed a pre-reading online test. The test included two sections—the first measured their reading rate [42], and the second checked reading comprehension using text and multiple-choice questions. Post-reading tests organized online aimed to measure any differences in the end.

Tests were a mandatory part of the articles (Supplementary Materials). After reading an article, the students completed a test to check how well they understood the content. Questions were open-ended (e.g., write the summary of the article; define the goal of the article, etc.) to help identify the level of students' engagement with articles and practise writing skills. Two other questions inquired about words that appealed to them more when reading the article and the ones they would use in speech and writing. Tests were arranged online with the help of MS Forms. Motivational quotes about reading were sent as a thank you message—students could see them upon submitting the tests. All submissions were duly checked, corrective comments and feedback was communicated back through direct emails.

3.3.5. Questionnaires

After the intervention, the students filled out the four sections from the Self-regulated Online Learning Questionnaire: time management, environmental setting, persistence, and help-seeking [43]. Questions were adjusted to reading activities, while some were left out, considering that most of the related questions were asked during the interviews before and

after the intervention. Students were also addressed with The Foreign Language Reading Anxiety [44] and The Foreign Language Reading Attitude and Motivation Scales [45]. The last two questionnaires were incorporated into the study with no modifications.

3.3.6. Software Programmes

Another set of data was collected through Google Analytics. In addition to the general data, such as the number of active users per day, time of the day when the students were most active, etc., it also showed the most visited webpages of the platform, visiting time, and duration.

3.4. Data Analysis

Taking note of the design-based research method of the study and the primary sources of data collection, the entire set of data underwent descriptive, inferential, and qualitative analyses. Interviews were transcribed and anonymized using the first letters of the students' names and surnames. Pre- and post-reading test scores were coded and included in tables with the same sequence to identify possible differences in the reading progress. Article tests were correlated with the information indicated in Reading Diary B, and certain observations were made and described below.

4. Results

To provide a systematic overview of the four-week intervention, the generated data are presented within the frames of the following subsections.

4.1. Improvements in Students' L2 Reading Skills Induced by the Reading Platform

The students were asked to complete reading skills online tests before and after the study (Section 3.3.4) to attest to changes in reading rate, comprehension, and L2 in general. Twenty-eight tests were submitted accordingly. Based on the scores, certain progress became evident in the reading rate of the students who read more than three articles (Table 4), e.g., students No. 1–2, 4–5, 7, 8, 19, 24, 25. Conversely, no progress was registered for those who read nothing or read less than planned, e.g., No. 6, 14, 20, 23.

Table 4. Number of articles planned and read before and after the intervention.

Student	Planned (A)	Read (B)	Student	Planned (A)	Read (B)	Student	Planned (A)	Read (B)
No. 1	8	4	**No. 11**	3	3	**No. 21**	3	3
No. 2	5	6	**No. 12**	-	4	**No. 22**	5	5
No. 3	-	5	**No. 13**	-	1	**No. 23**	5	0
No. 4	5	5	**No. 14**	5	1	**No. 24**	5	5
No. 5	3	4	**No. 15**	5	4	**No. 25**	8	5
No. 6	3	2	**No. 16**	5	5	**No. 26**	-	3
No. 7	3	4	**No. 17**	-	0	**No. 27**	-	4
No. 8	3	8	**No. 18**	5	5	**No. 28**	-	7
No. 9	3	4	**No. 19**	5	6	**No. 29 ***	5	3
No. 10	5	11	**No. 20**	3	0	**No. 30 ***	5	5

(Rows were left blank (-) if the students did not fill out Reading Diary A, and we possessed no initial data to compare with. Numbers 29 and 30 are marked with the asterisk (*) since these students passed neither the pre- nor post-Readvise reading skills tests).

According to Tables 5 and 6, the difference in pre-and post-reading rates of the students is 41.1 words: "*218! In a month I learned to read faster! I don't understand how this could have happened! Such achievements motivate me to read further, to reach new levels!..*", S.P.; "*I had 181,*

and now it is 234. I increased the reading rate. I am surprised", M.P. (The citations are direct transcriptions of the replies in English with no correction of either grammar or vocabulary. Interview replies in Russian were translated into English with no change in the content.).

Table 5. Pre-Readvise reading skills performance.

Student	Reading Rate (wpm)	Reading Comprehension (Percentage)	Student	Reading Rate (wpm)	Reading Comprehension (Percentage)	Student	Reading Rate (wpm)	Reading Comprehension (Percentage)
No. 1	130	70	**No. 11**	127	60	**No. 21**	150	60
No. 2	239	40	**No. 12**	303	80	**No. 22**	220	80
No. 3	219	70	**No. 13**	156	50	**No. 23**	170	70
No. 4	173	60	**No. 14**	132	50	**No. 24**	219	10
No. 5	184	90	**No. 15**	129	20	**No. 25**	127	60
No. 6	174	40	**No. 16**	171	60	**No. 26**	250	60
No. 7	107	60	**No. 17**	312	60	**No. 27**	89	70
No. 8	198	70	**No. 18**	141	30	**No. 28**	155	60
No. 9	107	30	**No. 19**	181	70	**No. 29**	-	-
No. 10	240	50	**No. 20**	151	50	**No. 30**	-	-
On average: 176.9 wpm (SD = 55.4) | RC = 56%								

Table 6. Post-Readvise reading skills performance.

Student	Reading Rate (wpm)	Reading Comprehension (Percentage)	Student	Reading Rate (wpm)	Reading Comprehension (Percentage)	Student	Reading Rate (wpm)	Reading Comprehension (Percentage)
No. 1	277	80	**No. 11**	165	65	**No. 21**	175	70
No. 2	253	90	**No. 12**	320	90	**No. 22**	280	82
No. 3	250	75	**No. 13**	176	52	**No. 23**	165	72
No. 4	212	60	**No. 14**	140	55	**No. 24**	327	70
No. 5	213	90	**No. 15**	170	30	**No. 25**	210	90
No. 6	180	50	**No. 16**	175	65	**No. 26**	260	60
No. 7	215	80	**No. 17**	310	70	**No. 27**	95	75
No. 8	263	80	**No. 18**	271	90	**No. 28**	160	70
No. 9	117	50	**No. 19**	234	80	**No. 29**	-	-
No. 10	283	75	**No. 20**	150	55	**No. 30**	-	-
On average: 216 wpm (SD = 61.4) | RC = 70.4%								

Improvement can be registered in reading comprehension, with the pre-and post-difference equaling 14.4%.

In addition, not all students demonstrated equal interest in exploring reading tactics and guidance provided by the platform (Empower reading skills). They appealed to half of the group who explored the information and completed the exercises under each module. Technical information based on multiple-choice questions was collected through a survey (Supplementary Materials) posted in the same section and completed by 20 students out of 39 (Table 7).

Obviously, most of the students were interested in fast reading techniques. However, they accessed the contact page of the platform more often than the section on reading empowerment skills (Figure 2): "*They all look helpful, but I did not have time to read them all*", O. Kh.; "*I tried to use the reading techniques with the second article because I forgot to do with the first one. I also wrote down and saved some of them to study better after my exams when I have more time*", E.Z.; "*It took more time to try to apply the reading tactics and the other tips from section 1. Also when trying to use them, I got more distracted*", I.K.

Table 7. Level of participation in the Empower reading skills section (Readvise).

Students Who . . .	**Reading Skills**	**Number**
. . . expressed interest in	How to read faster	**13**
	How to empower vocabulary	**7**
. . . have used the presented strategy from the section before	How to read faster	**6**
	How to empower vocabulary	**5**
. . . expressed interest in trying to use these two strategies in the future		**16**
. . . expressed interest in these reading tactics	Preview	**8**
	Inferences	**5**
	Understanding	**8**
	Recognizing patterns	**3**
	Skim and summarize	**14**
	Develop critical thinking	**12**
. . . have used any of the tactics before	Preview	**3**
	Inferences	**0**
	Understanding	**0**
	Recognizing patterns	**0**
	Skim and summarize	**6**
	Develop critical thinking	**2**
. . . completed the attached exercises to improve the reading tactics		**8**

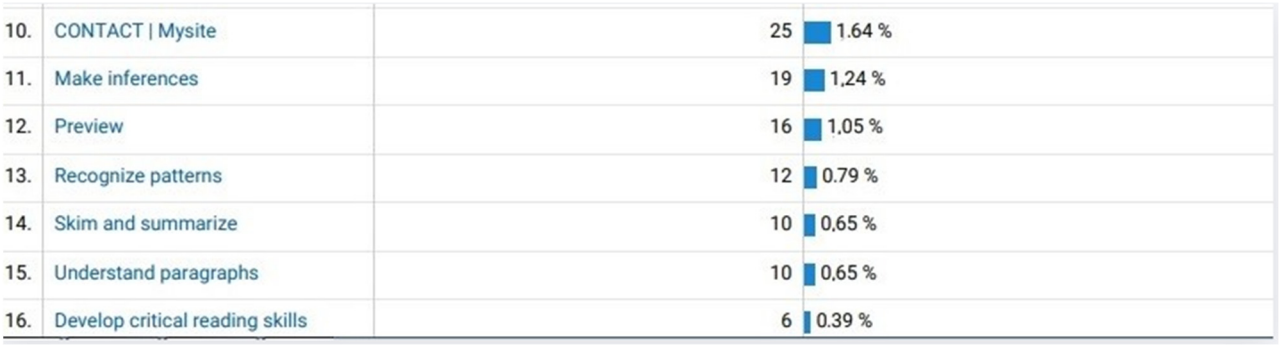

Figure 2. Number of visits to the webpages during the intervention (Google Analytics).

The requirement to fill out Reading Diary B and the test upon reading a new article every time instilled L2 changes as well. The students were supportive of the need to indicate the most interesting words and the ones they would try to use in speech and writing. They noted with appreciation the tasks that asked to define the aim, write a summary of an article, and distinguish facts from assumptions stating: "*When trying to complete the tests, you come back and revise the article, you increase the vocabulary, you start thinking when rereading the texts*", Yu.K.; "*I think that tests helped to summarize everything. When you read for the first time it is possible to miss out some parts. I liked especially the summary part*", V.B.

The platform users needed to be more focused when reading articles since they knew they would need to answer the open-ended questions of the test: "*The test makes you analyze the article. First, I tried writing with Google translator, but then I decided to write it myself despite all my mistakes*", K.U. Vocabulary progress was also traced with most of the students during regular University sessions when they were using the words from the articles they read. "*The first two questions encouraged us to look through the words again [. . .] to analyze which were more suitable and which ones we could use. The summary and the aim definition made me deepen into the content, and not only read some words, but to think over the content as well*", P.M. Some of them marked changes in thinking as well: "*The test questions were helpful. They were not true-false questions, but rather open, and it made my critical point of view stronger,*" H.B. "*I am*

more concentrated now. When reading articles before, I felt lost because I had to look up unfamiliar words every time, and it was difficult for me", M.M.

4.2. Differences in Students' L2 Reading Behaviour Stimulated by the Platform

During the initial interview, 32 students confessed they never used reading platforms for reading in English and barely knew about them. Seven students mentioned applications installed in their phones which they rarely accessed. For the time of using the platform, three students did not participate in any of the activities; six students completed all the steps except reading itself (a total of 30 active students), and the majority asked if they could share the platform with their friends.

According to the final interview, Readvise eliminated the primary obstacles that the group encountered while reading on their own (Table 2). They mentioned the well-designed and compact structure of the platform: "*Everything is thought out in great detail. Articles correspond to your level and cover different areas from science to diplomacy. After each article, a list of new words that you most likely did not know is provided. There are special cards that will help you learn words and a crossword will help you work them out*", An.N.; "*If it were not for the platform, then I would not learn so much new information and would not read any articles*", Z.B.

Regarding the components of the platform, the students commented on vocabulary lists provided with each article. Some confessed they were using machine translation services before to translate unfamiliar words which would not always fit in the context, and they would just stop reading: "*When I was starting reading, I used Google translator. With the words available there, I did not use Google translator at all*", D.B. Another difference was noted in the sequence of actions when working with words: "*I understood that first I need to check the new words and then only start reading. It eased a lot the reading process, and I was able to remember the words better that way*", M.M.

The data provided further indicate participants' level of their L2 reading engagement prior to joining the Readvise platform (Table 8).

Table 8. L2 reading engagement of the students (39 in total) before the intervention.

Students Who Were Reading	Number/Percentage
Books	10 (25.6%)
Articles	9 (23%)
Short stories	0 (0.0%)
Other	0 (0.0%)
Nothing	20 (51.3%)

Hence, books and articles represented the most typical items selected by the students to read. However, the majority of the students (51.3%) read nothing on their own. During the intervention, by contrast, the average number of articles read by the entire group (122 in total) equaled 3.1. Table 9 presents the detailed number of articles read by the students throughout the study.

Table 9. Quantitative indicator of the articles read on the platform.

Number of Articles (122)	Number of Students (39)/Percentage
One	2 (5.1%)
Two	1 (2.6%)
Three	4 (10.2%)
Four	7 (17.9%)
Five	8 (20.5%)
Six	2 (5.1%)
Seven	1 (2.6%)
Eight	1 (2.6%)
Eleven	1 (2.6%)
None	12 (30.7%)

When engaged with the reading activities of the platform, the practical value of articles was mentioned: " . . . *And here I do not see the length in pages. I see visually it is not too much, and then I start reading. I like that articles are short, and they are related to current life and realities. And it is very interesting*", I.B.; "*I did not like to read too many scientific articles. Before I liked to read books, but now I have the desire to look for articles more*", A.B.

To define the initial commitment of the group and the number of articles they had planned to read and actually read, the data from Reading Diary A and the number of tests submitted for all articles through MS forms were correlated (Table 4).

As demonstrated in the table, none of the students who initially planned to read around eight articles managed to achieve that. The most realistic indicator was for those planning to read five articles. They all succeeded in covering the envisaged number except the students No. 14, 23, and 29.

4.3. Students' Assessment of Changes in Their L2 Reading Attitude and Reading Motivation

Before connecting the platform, half of the group (51.3%, Table 8) rarely read anything in L2 on top of their homework assignments, with the principal reasons indicated in Table 2. Considering that Readvise was designed preliminary to eliminate most of those reading obstacles, it was anticipated that the group would be more actively engaged in L2 reading. Students attested some progress as well: "*With Readvise I do not need to write down anything. The words are detailed, simple words are also included. Because of that, I wanted to read more. I want to see books there also*", K.L. For some of the students, the platform was perceived as a form of intellectual recreation: "*I read the articles after hard University classes. I did not feel overburdened, I enjoyed them a lot and understood them all*", V.B.; "*Reading with this platform is very easy. You do not need to worry about the words, everything is already there. What you need is just to choose the article and read it. I usually did it in the evenings after my sessions of Chinese*", M.B.

The matter of time and timing was also mentioned: "*It was amazing. For me, I want to try to read other things. Unfortunately, I have other assignments. When I have time, I will enjoy the platform more*", N.M.; "*It is there, but because of the lack of time. But in the summer when I finish my exams, I will go back to the platform,*" D.B.

Discussions in the concluding section of the platform were assessed by those who enlisted them as well (10 students out of 30, 12 sessions in total) [46]: "*Discussions helped me since I do not practice English much. Discussions in terms of understanding the texts and the language help a lot*", K.U.; "*Discussions motivated me. For example, I do not like to talk about politics, but with our article discussion, now I looked at it from another angle. Now I see some more aspects to consider and discuss. You really start to think. Discussion and article reading together are more effective*", S.P.

Before attending these sessions, students could consult the recommendation list first. It included article-related questions to think over, videos, and an appended list of reading. "*I had developed it in kind of a habit. On Tuesday I have the habit that we discuss articles. We were also discussing with the groupmates how we are progressing*", N.B.; "*I liked the atmosphere of discussion sessions. Now I feel more confident when it comes to speaking*", A.M.

In addition, Table 10 further reveals the L2 attitude and motivation of the students engaged with Readvise (Section 3.3.5) [26]. All of them either agreed or strongly agreed with the first nine positions on the advantageous role of English in life, studies, and work-related aspects. Simultaneously, certain progress was observed in L2 reading perception: students love reading in English (4), find it enjoyable (3.9), have a great desire to read in English (3.8), the more they read, the more they want to read (3.8), etc.

Some students confirmed during the final interview: "*I understand I need to move forward, that I need to read more. I am good at listening (watching movies), but when I read, I stop. Before I thought I am good at reading, but when I opened the C1-level article, when I read, I understood that I need to strive, and aspire. Now I feel it is easier for me to read texts*", K.T.; "*The platform makes you addicted. I discovered a couple of new words that I thought are useful and that motivated me to read more*", A.K.

Table 10. Reading motivation and attitude questionnaire: average group scores (5-point Likert Scale).

Reading in English provides us with better education	4.8 (strongly agree)	Reading in English makes me happy	3.8 (agree)
Reading in English is the essential instrument to enlarge our vocabulary	4.8 (strongly agree)	The more I read in English, the more I want to read	3.8 (agree)
Reading in English is beneficial for self-development	4.8 (strongly agree)	I can read in English fluently	3.6 (agree)
Reading in English helps us to become better individuals	4.6 (strongly agree)	I comprehend the texts in English at first reading	3.6 (agree)
Reading in English contributes to the development of the writing skills	4.6 (strongly agree)	I am successful at reading in English	3.5 (agree)
Reading in English helps fluency in speech in English	4.3 (agree)	I feel peaceful while reading in English	3.4 (neutral)
Reading in English contributes to the development of grammar	4.2 (agree)	I have no problems with comprehending an English text	3.2 (neutral)
Reading in English helps to find a better job	4.2 (agree)	My reading skill in English is at an advanced level	2.9 (neutral)
Reading in English helps to prepare a better future for ourselves	4.2 (agree)	I'd rather do something else than reading in English	2.3 (disagree)
I can comprehend most of what I read in English	4.1 (agree)	Reading in English is boring	2.2 (disagree)
I like reading in English	4 (agree)	I do not read in English even if I have time	2.1 (disagree)
I love reading in English	4 (agree)	Reading in English feels like torture	2 (disagree)
Reading in English is enjoyable	3.9 (agree)	I would never read in English if it were not compulsory	1.8 (disagree)
I have a great desire to read in English	3.8 (agree)	I never read in English unless I have to	1.6 (disagree)
I read in English even if I do not have to	3.8 (agree)	I hate reading in English	1.6 (disagree)
I spend time to read in English	3.8 (agree)		

Data on anxiety level of L2 reading (Table 11) were provided by 30 students through MS Forms [25]. Clearly enough, they were mostly neutral when it came to reading any unknown passages (2.8) or not understanding some of them (3.2). Still, they confirmed their confidence in English (3.6): "*I have no fear now to read an article 10 pages long. Now I read faster. And the information is perceived much better*", M.P.; "*I started paying more attention to English. I started listening more and watching more. I am getting rid of my English anxiety*", I.K.

4.4. Possible Support to Students' SRR Skills in L2 Learning through the Readvise Platform

To approach the question of SRR skills in L2, 30 students completed the Self-regulated Online Learning Questionnaire (Section 3.3.5) [43]. As Table 12 indicates, the students were mindful of selecting the location to avoid much distraction (5.9), knowing where they could read most efficiently (5.2), and finding a comfortable place to read (5.6). Persistence scores were positive in all the positions except the one related to the ability to work with dull and uninteresting articles (4.1). According to the data, they were equally not the best help seekers, with scores varying from 2.6 to 3.5. On the other hand, there was a vivid group confession related to the fact that they did not allocate too much time to the platform activities (5). The interviews also evidenced that: "*I distributed my time wrongly. I noticed chances in learning new words. I did not have enough time to read them, but I could have done better*", Z.B.; "*I feel the progress. But I could have read more if I were more organized*", K.U.

Particular attention should be paid to the metacognitive participation of the students in reading activities. They rarely set any goal prior to reading (from 3.5 to 4.1/neutral) along with thinking about the reading strategies (3.5/neutral). During the reading activities, strategies were somehow used (4.9) and assessed against their effectiveness (4.1/neutral). Comparatively better indicators were adhered to regular comprehension checking (5.2) and asking themselves questions about how well they were doing while reading (4.8).

Metacognitive participation related to post-reading activities scored high in questioning what had been learnt after reading (5.6). The students demonstrated neutrality when it came to analyse the usefulness of strategies after reading (3.8). Nor did they consider other possible ways to perform after the reading (3.4/somehow not try). This can be related to the data in Table 7.

Table 11. Reading anxiety: average group scores (5-point Likert-scale).

Once you get used to it, reading English is not so difficult	4.4 (agree)
I enjoy reading English	4 (agree)
I get upset when I'm not sure whether I understand what I am reading in English	3.7 (agree)
When reading English, I often understand the words but still can't quite understand what the author is saying	3.6 (agree)
I feel confident when I am reading in English	3.6 (agree)
It bothers me to encounter words I can't pronounce while reading English	3.4 (neutral)
When reading English, I get nervous and confused when I don't understand every word	3.2 (neutral)
I would be happy to learn to speak English rather than having to learn to read as well	3.2 (neutral)
I am satisfied with the level of reading ability in English that I have achieved so far	3.2 (neutral)
The hardest part of learning English is learning to read	2.9 (neutral)
I am nervous when I am reading a passage in English when I am not familiar with the topic	2.8 (neutral)
I get upset whenever I encounter unknown grammar when reading English	2.8 (neutral)
When I'm reading English, I get so confused I can't remember what I'm reading	2.8 (neutral)
I usually end up translating word by word when I'm reading English	2.4 (disagree)
I feel intimidated whenever I see a whole page of English in front of me	2.3 (disagree)
I do not mind reading to myself, but I feel very uncomfortable when I have to read English aloud	2.2 (disagree)
English culture and ideas seem very foreign to me	2.1 (disagree)
You have to know so much about English history and culture in order to read English	2 (disagree)

Table 12. Self-regulated online reading: average group scores (7-point Likert Scale).

Before reading	I set specific goals before I begin reading	4.1 (neutral)
	I set short-term (daily or weekly) goals as well as long-term goals	3.8 (neutral)
	I set goals to help me manage my reading time	3.5 (somehow not try/neutral)
	At the start of reading, I think about the reading strategies I will use	3.5 (somehow not try/neutral)
During the reading	I find myself pausing regularly to check my comprehension	5.2 (somehow true)
	When I read, I try to use strategies that have worked in the past	4.9 (somehow true)
	I ask myself questions about how well I am doing while reading	4.8 (somehow true)
	I change strategies when I do not make progress while reading	4.1 (neutral)
After the reading	I think about what I have learned after I finish reading	5.6 (true)
	I find myself analyzing the usefulness of my strategies after I finish reading	3.8 (neutral)
	I ask myself if there were other ways to do things after I finish reading	3.4 (somehow not try)
Time management	I made good use of my time for reading with the Readvise platform	5.6 (true)
	I didn't spend very much time on Readvise because of other activities	5 (somehow true)
	I make sure I keep up with my initial plan of reading articles	4.8 (somehow true)

Table 12. *Cont.*

Environmental structuring	I choose the location where I read to avoid too much distraction	5.9 (true)
	I find a comfortable place to read	5.6 (true)
	I know where I can read most efficiently	5.2 (somehow true)
	I have a regular place set aside for reading	4.3 (neutral)
Persistence	Even when I feel lazy or bored when reading, I finish what I planned to do	5.8 (true)
	When my mind begins to wander during reading, I make a special effort to keep concentrating	5.5 (true)
	When I am feeling bored reading, I force myself to pay attention	5.4 (somehow true)
	When I begin to lose interest in reading, I push myself even further	4.6 (somehow true)
	I work hard to do well even if I don't like what I have to do	4.6 (somehow true)
	Even when article provided by the platform is dull and uninteresting, I manage to keep working until I finish	4.1 (neutral)
Help seeking	When I do not fully understand something, I ask my course members for ideas and help	3.5 (neutral)
	I communicate with my classmates to find out how I am doing in Readvise reading activities	3.5 (neutral)
	When I am not sure about something on Readvise, I check with other people	2.9 (somehow not true)
	When I have trouble reading, I ask for help	2.6 (somehow not true)
	I share my concerns related to Readvise reading activities with my classmates, so we know what we are struggling with	2.6 (somehow not true)

5. Discussion

Within the scope of this study, we sought to improve the reading skills of the students who study English as an L2. This was relatively successful given the difference between the average values of reading rate (176.9 wpm (SD = 55.4) and 216 wpm (SD = 61.4)) and reading comprehension (56% and 70.4%) before and after the four-week intervention (Tables 5 and 6). However, these variables could have been more substantial if the average number of articles read by the entire group (122 in total) was higher than 3.1 (Table 9). Despite that, the students who diligently read more than three articles improved their reading rate and comprehension to a certain extent (Tables 5 and 6, students No. 1–2, 4–5, 7–8, 19, 24–25). Conversely, no progress was registered for those who read less or read nothing (Table 4), as was the case with the students No. 6, 14, 20, 23 (Tables 5 and 6).

Mandatory submission of the tests with open-ended questions (Section 3.3.4) set the stage for practicing and improving writing skills. That was ensured through feedback on the tests, including references to spelling and grammar mistakes. Lists with unfamiliar words available with every article and test questions contributed to the vocabulary acquisition of the students, which was evident during daily University classes. Besides, ten students out of 30 who regularly participated in online discussions asserted changes in their speaking and listening skills after the third week of the intervention. A longer interaction with the platform should have been maintained for the students to attain the fifth language skill representing culture [16].

The study also aimed to determine any differences that Readvise could stimulate in L2 reading behaviour. Considering the advantage of the platform, which is its tailored design conforming with the specific reasons for not reading much in L2 as indicated by the students, the stumbling blocks were markedly weakened (Table 2). As a result, more active engagement with L2 reading activities of the platform was expected. Still, as the weekly reading progress reports testify, it did not apply to every student, especially the ones who read less than they had planned or completed all the sections except reading. The final interview revealed lack of time as the key reason; however, the University curricula placed

the group members on equal conditions in terms of time and study load. The literature discussed the impact of extrinsic motivation and academic settings dominated by "learning episodes" as possible reasons [20–23,31]. Observations of this part of the study fully assert it from a practical point of view.

The correlation between the level of reading interest and the type of reading motivation was also ascertained [18–22]. This proves accurate since the students who are used to acting within the context of "learning episodes" find it difficult to generate intrinsic motivation in L2 reading to become independent and enthusiastic readers. That is why the number of students who read nothing before the intervention (20 out of 59) did not decrease (12 out of 39) during the intervention (Section 3.3.2). Some scholars attributed it to a low level of language proficiency that could cause L2 reading anxiety [23,24]. The assertion was not definitive as proved by the students with an A2 level of English (no. 9, 10, 15) compared to those with C1 (no. 1), B2 (no. 13), and B1 (no. 20), Table 4.

Additionally, reading anxiety had no place among the active readers (Table 11). This claim can be explained by intentional elimination of all the factors that could cause anxiety among the readers, particularly the provision of vocabulary lists, texts appropriate for language proficiency level, and regard for personal interest. The students did not agree that reading activities were the hardest part of English (2.9/neutral), nor did they get nervous or upset when encountering new words (3.2/neutral) and not knowing how to pronounce them (3.4/neutral). They felt confident when reading in English (3.6/agree), and the same stance was confirmed during the final interview. On top of that, Table 10 underlines the strong acknowledgment of the importance of knowing the language and reveals the high level of reading motivation among the students who became active platform users.

Along with the behavioural and motivational changes and assertions, the students exercised their metacognitive abilities as well [3,4,28,29]. Choosing the article, analyzing the content, and evaluating how much of the material was perceived helped to manifest metacognitive participation in readings. Zimmerman [38] attributes the presence of these domains in one's learning process as self-regulated learning (SRL), which is true for this study as well [7] (p. 1).

Consistent with the research findings, the theoretical model for SRR can be based on the corporate functioning of "cognitive strategies, motivational processes, conceptual knowledge, and social interaction among readers [34] (p. 177)." The platform activities explicitly incorporated them all: students had the opportunity to discuss articles together, tests offered ground for information searching, summarizing, inferencing, and comprehension monitoring. Motivational processes were set high, accounting for the absence of any obstacle on the way that could potentially impede the reading process, while the conceptual knowledge was derived from articles as well as the platform [30] (pp. 179–182). Readvise provided the favourable environment for all the components of the SRR theoretical model except the one for collaborative support. The latter was implemented bilaterally through feedback and comments provided on the submitted tests to assess the level of understanding and engagement with the reading material, as well as during online discussions of the articles.

Zimmerman's four-level scheme for regulatory skill development can also be accentuated [29] (p. 29). Students who participated in L2 reading activities successfully passed the initial level of observation. The vocabulary lists, reading tactics, tests and discussions demonstrated effective ways of engagement with L2 texts. This level claims for active practice by the students of all types of reading activities to be able to acquire general patterns of the work with L2 readings to move to the level of self-control. The limitations of the study raised active students (who read more than five articles, Table 4) to the level of emulation only, establishing further the need for practicing more task analysis (forethought), self-control (performance), and self-reaction (self-reflection) processes of self-regulation skill (Table 1). Table 12 demonstrates that the students rarely set any goal prior to reading (from 3.5 to 4.1/neutral) along with thinking about the reading strategies (3.5/neutral). To attest it, only 40% of the students (8 out of 20) completed the practical

exercises specified in Empower reading skills, and only 51.3% (20 students out of 39) of the entire group checked the webpage (Table 7). Insufficient knowledge becomes decisive for self-control and self-reaction; meanwhile, it can be explained through peculiarities of the rigid academic environment where the students are traditionally assigned to the performance phase, transferring forethought to educators, and in most cases undermining the phase of self-reflection.

6. Limitations

In the future, this study could lead to more prominent results if the following limitations are considered. Given the amount of time students routinely spend on their phones, a mobile version of the Readvise platform could increase student engagement. Nonetheless, its absence can be viewed as an additional indicator of intrinsic motivation for those navigating the website through the available option. The other limitation consists in the duration of the intervention. For better and more sustainable outcomes, four weeks need to be extended to two months at least. In addition, it is advisable to engage students at the beginning of the academic year; otherwise, they would not have enough time in view of other assignments and University exams. To assess the validity of the research findings, the intervention should encompass a broader group of students from various backgrounds and possibly from different universities and countries. However, with the necessity of regularly checking the students' submissions and monitoring their reading engagement, many students could potentially slow down the process. To secure a better understanding of reading tactics, they should be introduced and exercised during ordinary University sessions to ensure students' awareness and ability to make use of them later when reading independently.

7. Conclusions

This four-week intervention revealed some of the possibilities offered by technology in the domain of SRR skills in a second language. The web-based Readvise reading platform designed specifically to meet the needs and tackle the uncertainties of the tertiary-level students when reading in L2 proved to be effective in improving the L2 reading skills of the target group. Through the elimination of the main L2 reading barriers declared by the students, Readvise encourages changes in L2 reading behaviour, employment of metacognitive abilities and consolidates students with intrinsic reading motivation. Given that, the platform activities can potentially develop and enhance the SRR skills in the long run with due account of previous learning settings of the students and their past learning experiences. The findings of this study can be of particular interest to foreign language teachers who feel interested in supporting and developing their students' reading skills beyond educational curricula. It may also be of interest to scholars and researchers in the field of SRL and SRR to attest to the impact of the Readvise reading platform in terms of its declared objectives and short-term outcomes.

Supplementary Materials: The following supporting information can be found at: www.shorturl.at/chpNO (p. 2: Interview Questions; pp. 3–4: Reading Preferences (Survey); pp. 5–6: Empower Reading Skills (Survey); pp. 7–8: Reading Diary A; pp. 9–11: Reading Diary B; p. 12—Reading Diary C; pp. 13–14: Article Test (Sample); p. 15—Vocabulary List (Sample); p. 16—List of Recommendations for the Online Discussion (Sample); p. 17—Readvise Platform: Step-by-Step Navigation).

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