

Business and Economics Students' Self-Reports on Academic Reading in English as L2: A Factor Analysis

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Abstract

Adequate reading behaviour is vital for text comprehension across fields. In today's professional environment, a well-developed reading skill is also expected in English as a second language (EL2), which happens already in college, although transition to college-level reading may be difficult even in the first language. It is therefore useful to analyse students' use of reading strategies to facilitate their academic progress. This study investigates the reading behaviour of junior students of business/economics when reading academic texts in EL2. We conducted an exploratory factor analysis (N=134) of a 45-item questionnaire about students' awareness of reading strategies and their reading confidence (i.e. self-perceived competence in text retelling). The majority of the items were based on self-reports found in the literature (Kolić-Vehovec, Bajšanski, 2001; Mokhtari, Reichard, 2002; Taraban, Kerr, Rynearson, 2004) and several items were added to the questionnaire (e.g. questions related to note taking). Five factors were interpretable: four factors related to Metacognitive Awareness of Reading Strategies (Repeated Reading, Monitoring/Regulation, Note Taking and Elaboration) and the fifth factor covering self-perceived competence in text retelling (Reading Confidence). Internal consistency of the factors indicated by standardized Cronbach's alphas were 0.83 (Repeated Reading), 0.80 (Monitoring and Regulation), 0.77 (Note Taking), 0.63 (Elaboration) and 0.75 (Reading Confidence). Three strategies positively correlated with each other (Repeated Reading, Monitoring/Regulation and Elaboration), while negative correlation was found between Note Taking and Reading Confidence. The results provide valuable information on the patterns in student reading as a baseline for further analysis of L2 text comprehension in college.

Keywords: business students, factor analysis, metacognitive awareness, reading strategies.

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Introduction

For many students transition to college may be rather difficult due to the need to cover large amounts of reading material dealing with complex academic concepts. Appropriate reading behaviour is thus essential for junior students struggling with independent reading tasks (Snow, 2002). This involves reading strategies such as using prior knowledge, monitoring one's comprehension or benefiting from support strategies (Mokhtari, Reichard, 2002) such as note taking, all of which may increase students' confidence and enable deep comprehension. However, students often apply superficial reading strategies (e.g. repeated reading) without establishing relations between the ideas in the text, which may call for remedial action to avoid obstacles to academic success. The problem is particularly relevant in highly internationalized higher education when students are expected to use English as a lingua franca at a near-native level although the texts they read are already difficult for them in their first language.

Helping students overcome such reading obstacles, especially if English as a Second Language (EL2) is in question, is therefore worth investigating both for students' studying progress and for their future careers. The ability to manage texts efficiently (e.g. writing summaries and reports) is required from all professionals regardless of whether they compete for junior posts in international organizations (e.g., European Union, 2020, United Nations, 2020) or for managerial positions in the private sector.

Literature review

Mokhtari and Reichard (2002) point to agreement among researchers that metacognition, i.e. 'awareness and monitoring of one's comprehension processes' (p.249) is vital for successful reading. Metacognitive awareness regulates the reading process (e.g. Alexander, Jetton, 2000; Baker, Brown, 1984) and distinguishes skilled from unskilled readers. Skilled readers actively use reading strategies (Pressley, Afflerbach, 1995) making sure they understand what they read taking into account the text as a whole (comprehension monitoring) and relating the content to what they know from before (use of prior knowledge - elaboration). In contrast, unskilled readers are unaware of appropriate reading strategies, or they use them only mechanically. For example, they tend to reread without checking understanding or they take verbatim notes of the text only by listing unclearly related concepts (McNamara, O'Reilly, 2009). In university settings, students predominantly report using simple 'repetition strategies' (repeated reading, rereading), and few of them claim they try to connect academic texts with their prior knowledge (Wood, Motz, Willoughby, 1998). Kolić-Vehovec, Bajšanski and Rončević-Zubković (2011) thus conclude that educators should create more demanding reading tasks (e.g. summarising, essay writing) in order to encourage students to use complex strategies which would help them monitor and regulate the reading process.

One way to analyse students' metacognition is through self-reports (e.g. Miholic, 1994; Mokhtari, Reichard 2002; Pereira-Laird, Deane, 1997), which was the approach also taken in this study. The purpose of our research was to investigate the main

patterns of junior students' strategic reading behaviour when dealing with academic texts in English. We also wanted to identify relations between the applied strategies and reading confidence which we conceptualised as self-perceived competence in text retelling. We expected that the results of our study could provide useful information on academic reading and contribute to further research on text comprehension in L2.

Research methodology

Participants

Participants were first-year students of business and economics (N=157, male: 65, female: 92), native speakers of Croatian language (18-23 years of age, 19.13 years on average), with proficiency in English as L2 ranging from low (A2, CEFR level) to advanced (C2, CEFR level) as follows (N=125): A2=6.40%, B1= 18.40%, B2=32.80%, C1=36.80% and C2=5.60%. Only the participants who answered all the items in their self-reports (questionnaires) were included in the factor analysis (N=134, male: 57, female: 77).

Instruments

English Language Proficiency (L2). Proficiency in English as L2 was assessed using the Quick Placement Test 2 (Allan, 2004) which consisted of 200 multiple-choice questions (100 grammar and 100 listening exercises, max. 200 points total). The results were interpreted according to the Common European Framework of Reference for Languages - CEFR (Council of Europe, 2020) using the six-level scale of language proficiency: A1-A2 (basic), B1-B2 (independent), and C1-C2 (proficient).

Metacognitive Awareness of Reading Strategies and Reading Confidence Questionnaire. The questionnaire was constructed for the purpose of this study. It started with 'When I read a text on business or economic affairs in English,...', followed by 45 items (statements) describing the use of different reading strategies and self-perceived competence in text retelling (reading confidence). The largest number of items (30) were taken from the Metacognitive Awareness of Reading Strategies Inventory (MARS) designed by Mokhtari and Reichard (2002), and the remaining statements were based on questionnaires found in the literature (Kolić-Vehovec, Bajšanski, 2001; Taraban, Kerr, Rynearson, 2004; PISA, 2009) as well as on expert opinion. The MARS was appropriate for our research as it also targets adolescents and adults when confronting academic reading. The factor analysis of the MARS indicated three factors (strategy subscales): Global Reading Strategies (e.g., 'I have a purpose in mind when I read. '), Problem-Solving Strategies (e.g., 'I adjust my reading speed according to what I read. '), and Support Reading Strategies (e.g., 'I take notes while reading. '). In our study, more detailed items were added to the questionnaire asking about careful reading (e.g., Weir, Khalifa, 2008), awareness of text organisation, work on text (e.g. highlights, note taking) and self-perceived competence in text retelling/summarizing (e.g., 'I can summarize the text after the first reading. '). The questions about perceived competence in text retelling were added in order to identify possible relations between students' reading strategies and their reading confidence. Similar to Mokhtari and Reichard (2002), students responded to the questions on a 5-point Likert-type scale ranging from 1 ('I never do this. ') to 5 ('I always do this. ').

Procedure

Participants were first informed about the research, they then signed their written consents and provided personal information on their age and EL2 background. After that, participants were tested for language proficiency in EL2, outside their class time. Due to class overlaps, not all the participants were able to attend language testing and some decided to withdraw from the research. The questionnaire was then administered (in Croatian) during regular classes of the course in English for Business and Economics, which took between 10 and 15 minutes of class time. The questionnaire was not anonymous, but it was explained to students that they could withdraw from the research at any time, that there were no right or wrong answers, and that their results would only be used for research purposes without affecting their student record. Since the marking system in the course was highly transparent, the lack of anonymity was not considered to be an obstacle for the study.

Statistical analyses

An exploratory factor analysis was conducted to determine the latent factors of the Metacognitive Awareness of Reading Strategies and Reading Confidence Questionnaire which consisted of 45 items (manifest variables). Factors were extracted using the Principal Component Analysis, and Promax rotation was applied to ensure better interpretability (Tabachnick, Fidell, 2001). Cronbach's alpha was used as a measure of internal consistency of the factors, and relations between the factors were analysed using Pearson's correlation coefficient. All statistical analyses were performed using the SAS 9.4 software.

Results and discussion

We first show the results of the factor analysis (Figure 1, Table 1) and then we present descriptive statistics and the correlation analysis for the factors (Table 2, Table 3).

The Kaiser-Meyer-Olkin value of sample adequacy was 0.647 indicating that our sample was adequate but mediocre (Beavers et al., 2013). Promax rotation of the extracted factors was applied, and the rotated factor structure is shown in Table 1.

We applied the Gorsuch (1983) criterion that recommended evaluating the scree plot and eigenvalues in tandem with interpretability to decide the number of factors to retain. In our case, a five-factor structure allowed meaningful interpretation (Tabachnick, Fidell, 2001) as seen in Table 1.

Figure 1 represents the scree plot of the eigenvalues and proportion of the explained variance against the factor number.

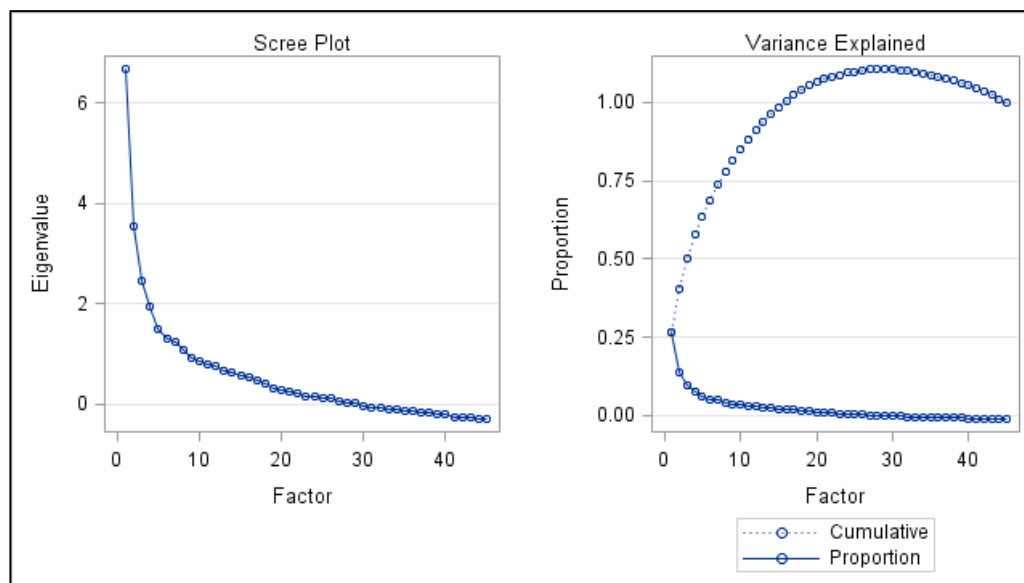


Figure 1 Scree plot of the eigenvalues and proportion of the explained variance against the factor number

Table 1 Factor structure matrix of the promax rotated solution

Inventory item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	C
REPEATED READING (Factor 1)						
37. If I don't understand a paragraph, I reread it several times.	0.80	0.22	0.12	0.17	0.02	0.65
36. If I don't understand a sentence, I reread it several times.	0.76	0.13	0.12	0.22	<-0.01	0.59
33. If I don't understand a part of the text, I reread it several times.	0.72	0.15	0.15	0.25	0.23	0.56
16. When text becomes difficult, I pay closer attention to what I'm reading.	0.66	0.41	-0.05	0.13	0.04	0.52
11. I try to get back when I lose concentration.	0.55	0.21	-0.02	0.03	0.10	0.34
44. I read texts slowly and carefully from the beginning to the end.	0.63	0.21	0.18	0.34	0.16	0.42
27. When text becomes difficult, I re-read to increase my understanding.	0.58	0.13	0.06	0.29	0.10	0.36
8. I read slowly but carefully to be sure I understand what I'm reading.	0.46	0.15	0.17	0.15	-0.10	0.23
18. I stop from time to time and think about what I'm reading.	0.52	0.24	0.08	0.43	-0.04	0.36
15. I use reference materials such as dictionaries to help me understand what I read.	0.33	0.12	0.11	0.13	-0.21	0.17
38. If I don't understand a word, I reread the sentence and think about the meaning of the word in relation to the previous text I have read.	0.37	0.34	0.08	0.22	-0.06	0.20

Note: C = communality.

Table 1 Factor structure matrix of the promax rotated solution – continued

Inventory item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	C
MONITORING AND REGULATION (Factor 2)						
30. I try to guess the meaning of unknown words or phrases.	0.05	0.61	-0.09	0.17	0.09	0.40
26. I try to guess what the material is about when I read.	0.18	0.60	-0.17	0.16	<-0.01	0.40
29. I check to see if my guesses about the text are right or wrong.	0.19	0.61	0.14	0.30	-0.03	0.41
24. I go back and forth in the text to find relationships among ideas in it.	0.26	0.60	0.16	0.23	-0.01	0.40
23. I critically analyse and evaluate the information presented in the text.	0.18	0.55	-0.12	0.25	0.24	0.36
1. I have a purpose in mind when I read.	0.22	0.50	0.06	0.16	0.11	0.26
25. I check my understanding when I come across conflicting information.	0.32	0.52	<0.01	0.33	0.09	0.32
7. I think about whether the content of the text fits my reading purpose.	0.29	0.53	0.03	0.44	0.03	0.38
17. I use tables, figures, and pictures in text to increase my understanding.	0.20	0.40	<-0.01	0.12	0.25	0.22
28. I ask myself questions I like to have answered in the text.	0.25	0.41	0.26	0.26	-0.10	0.27
40. I look for the main ideas and their relations in the text I read.	0.17	0.40	0.13	0.39	0.03	0.25
NOTE TAKING (Factor 3)						
42. When I read, I take key words from the text.	0.04	0.02	0.74	-0.04	-0.10	0.57
41. When I read, I mark the main parts of the text.	0.11	-0.12	0.70	0.09	-0.03	0.52
43. When I read, I take key words of smaller text segments, so I can easier put them together in a whole.	0.08	0.15	0.62	0.07	-0.05	0.42
2. I take notes while reading to help me understand what I read.	0.16	0.04	0.68	0.30	-0.15	0.51
12. I underline or circle information in the text to help me remember it.	0.05	-0.16	0.61	0.08	-0.30	0.43
6. I summarize what I read to reflect on important information in the text.	0.16	0.07	0.55	0.33	-0.12	0.37
31. I use drawings or graphically organized notes to present the main ideas in the text and their relations.	0.07	0.15	0.43	-0.10	-0.02	0.25
5. When text becomes difficult, I read aloud to help me understand what I read.	0.16	-0.20	0.38	0.12	-0.19	0.24
22. I use typographical aids like bold face and italics to identify key information.	0.05	0.16	0.22	0.03	-0.14	0.09

Note: C = communality.

Table 1 Factor structure matrix of the promax rotated solution – continued

Inventory item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	C
ELABORATION (Factor 4)						
3. I think about what I know to help me understand what I read.	0.13	0.25	0.06	0.58	0.06	0.36
20. I paraphrase (restate ideas in my own words) to better understand what I read.	0.10	0.08	0.10	0.47	<-0.01	0.23
39. I try to connect the paragraph I read with the previous paragraph.	0.22	0.26	0.06	0.50	0.10	0.27
13. I adjust my reading speed according to what I'm reading.	0.21	0.34	0.09	0.44	-0.07	0.26
9. I discuss what I read with others to check my understanding.	0.16	0.22	0.17	0.39	-0.26	0.27
19. I use context clues to help me better understand what I'm reading.	0.40	0.30	<0.01	0.48	0.14	0.32
21. I try to picture or visualize information to help remember what I read.	0.15	0.18	0.23	0.30	-0.05	0.14
10. I skim the text first by noting characteristics like length and organization.	0.18	0.16	-0.15	0.30	-0.28	0.28
READING CONFIDENCE (Factor 5)						
35. I can retell a text in Croatian regardless of whether it is written in English or in Croatian.	0.08	0.11	-0.15	0.49	0.71	0.69
34. I can retell a paragraph in Croatian regardless of whether it is written in English or in Croatian.	0.18	0.10	-0.15	0.50	0.71	0.69
45. I can summarize the text after the first reading.	0.16	0.35	-0.03	0.10	0.54	0.40
4. I preview the text to see what it's about before reading it.	0.04	<0.01	<0.01	0.07	-0.30	0.11
14. I decide what to read closely and what to ignore.	0.07	0.07	0.22	0.15	-0.43	0.24
32. If I don't understand part of the text, I give up and skip it.	-0.34	-0.16	0.10	-0.08	-0.49	0.34
Eigenvalues						
	6.68	3.54	2.46	1.94	1.50	
Variance Explained by Each Factor Ignoring Other Factors						
	5.13	4.40	3.50	3.80	2.53	

Note: C = communality.

Table 1 represents four factors related to Metacognitive Awareness of Reading Strategies, and the fifth factor was called Reading Confidence.

Some of the items had factor loadings higher than .30 on more than one factor. Such items were assigned to the factor where the loading was higher and factor content was more compatible with the item content. Item 22 had no loading greater than 0.30, so it was not to be assigned to any factor in further research.

The first factor included items (statements) mainly related to rereading for better comprehension (e.g., 'If I don't understand part of the text, I reread it several times.' or 'If I don't understand a paragraph, I reread it several times.'), and we named it Repeated Reading. This factor explained 26.42% of the total variance.

The second factor contained items that describe comprehension monitoring and regulation of the reading process (e.g., 'I go back and forth in the text to find relationships among ideas in it.'). and it was called Monitoring and Regulation. The factor explained 14.03% of the total variance.

The third factor contained items related to note taking and work on text (e.g., 'When I read, I take key words from the text.', 'When I read, I mark the main parts of the text.'). and it was named Note Taking. The factor explained 9.71% of the total variance.

The fourth factor consisted of seven items related to strategies used to establish relations between text content and own knowledge/experience, or between other parts of the text (e.g., 'I think about what I know to help me understand what I read.', or 'I use context clues to help me better understand what I read.'). and it was named Elaboration. The factor explained 7.68% of the total variance.

The fifth factor included items related to self-perceived competence in text retelling in English or in Croatian (e.g., 'I can retell a text in Croatian regardless of whether it is written in English or in Croatian.'). and we named it Reading Confidence. This factor explained 5.93% of the total variance.

Internal reliabilities of the factors were measured using Cronbach's alpha coefficient (Tabachnick, Fidell, 2001). Standardized Cronbach's alphas for the factors related to Metacognitive Awareness of Reading Strategies were as follows: 0.83 (Repeated Reading), 0.80 (Monitoring and Regulation), 0.77 (Note Taking) and 0.63 (Elaboration). Cronbach's alpha for Reading Confidence was 0.75. The values were high or satisfactory for all the factors except for Elaboration. The lower value for this factor was considered acceptable for research purposes.

The four reading strategies (Rereading, Monitoring and Regulation, Note Taking, Elaboration) identified as four factors in our study are well described in the literature (e.g., Pressley, Afflerbach, 1995; Afflerbach, Cho, Kim, 2015) and can point to types of strategic behaviour in junior students' academic reading. As mentioned before, rereading appears to be by far the commonest reading strategy (Wood, Motz, Willoughby, 1998), which, if applied together with the monitoring and regulation of the reading process, can enhance comprehension (Kolić-Vehovec, Bajšanski, 2006; Mokhtari, Reichard, 2002). However, unskilled readers tend not to monitor their comprehension, and neither do they use their prior knowledge sufficiently, not even in college (Wood, Motz, Willoughby, 1998).

The factor analysis of our students' self-reports had some overlaps with the MARSİ questionnaire (Mokhtari, Reichard, 2002) which we used in its entirety (30 items) together with fifteen additional statements. As said before, the factor analysis of the MARSİ revealed three factors: global (13 items), problem-solving (8 items) and support reading strategies (9 items). Not surprisingly, our first factor (Repeated Reading) contained five items belonging to MARSİ's problem-solving strategies as rereading is a frequently used strategy to resolve comprehension issues also at university (Wood, Motz, Willoughby, 1998). Furthermore, the second factor in our research (Monitoring and Regulation) predominantly contained MARSİ's global strategies which may be explained by the students' effort to monitor their comprehension by considering the text as a whole (globally) rather than as a set of fragments. Also, quite expectedly, the Note Taking items within the third factor in our questionnaire corresponded to the support strategies in the MARSİ. The only factor that could not be related to the MARSİ was Elaboration as it contained items equally distributed across MARSİ's three factors, possibly due to the nature of elaboration as a strategy of benefiting from different resources beyond (e.g., prior knowledge) and within text (i.e. context).

The fifth factor in our study (Reading Confidence) was the only one which was not solely related to reading strategies as it also contained statements investigating our students' reading confidence in terms of their self-perceived competence in text retelling (e.g., 'I can summarize the text after the first reading.'). Interestingly, the items within this factor that did relate to reading strategies (e.g. skipping parts of the text deemed unimportant) negatively correlated with the ones indicating reading confidence. It appears that the more our participants chose to ignore parts of the text, the less competent they felt in text retelling suggesting that junior college students might overestimate (Bajšanski, 2011) their ability to distinguish between the relevant and irrelevant text segments.

More insights into the patterns of our students' reading behaviour are given below in the results of the correlation analysis which we conducted using Pearson's correlation coefficient in order to investigate the relations between the five factors (Table 3).

We first present descriptive statistics for the five factors (Table 2), and then we show the results of the correlation analysis (Table 3).

Table 2 Descriptive statistics for the standardized scores of the five factors (Repeated Reading, Monitoring and Regulation, Note Taking, Elaboration, Reading Confidence) – SAS 9.4

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Repeated Reading	134	0	0.97	0	-4.18	1.58
Monitoring, Regulation	134	0	0.94	0	-2.51	2.22
Note Taking	134	0	0.95	0	-2.17	1.77
Elaboration	134	0	0.93	0	-3.01	1.73
Reading Confidence	134	0	0.93	0	-2.09	2.26

Table 3 Factor correlations - SAS 9.4, Pearson Correlation Coefficients, N = 134, Prob > |r| under H0: Rho=0

	Repeated Reading	Monitoring, Regulation	Note Taking	Elaboration	Reading Confidence
Repeated Reading	1.00000				
Monitoring, Regulation	0.32867 0.0001	1.00000			
Note Taking	0.14636 0.0915	-0.00086 0.9921	1.00000		
Elaboration	0.35356 <0.0001	0.32934 0.0001	0.13369 0.1236	1.00000	
Reading Confidence	0.07957 0.3608	0.06393 0.4631	-0.22392 0.0093	0.16446 0.0576	1.00000

The correlation analysis showed that two factors, i.e. Reading Confidence and Note Taking, only correlated with each other, negatively. The fact that Note Taking was the only strategy which could be linked to self-perceived reading competence (Reading Confidence), and that, although weak, the correlation was negative, indicates that students who are less confident while reading in English take their notes more often, while more confident students may ignore the benefit of note taking. The causes of such results might be tested in future research with a wider range of variables (e.g. reading comprehension measures).

Furthermore, positive correlations between the other three strategies, i.e. repeated reading, monitoring/regulation and elaboration (e.g., use of prior

knowledge), provide evidence of an interplay of different types of reading behaviour while dealing with complex texts. This is in line with McNamara et al. (2006) discussing multi-faceted active engagement of the reader while trying to understand a text. For example, comprehension monitoring might lead to rereading, which may in turn activate one's prior knowledge and facilitate comprehension. Alternatively, due to comprehension monitoring prior knowledge may be used making the reader go back to some parts of the text in order to interpret it meaningfully.

It is worth mentioning that more skilled readers might also read more efficiently by taking notes to monitor their own comprehension, increase confidence and reduce the need for repeated reading. However, this pattern of reading behaviour was not present in our students' self-reports in their first-year of college as it was shown that note taking correlated with no other reading strategy identified in the factor analysis.

Overall, the factor analysis we conducted has given us valuable information on the reading behaviour of our students in terms of the broad strategies used and their relations. However, the study covered only students from one business school in Croatia and could not be generalized. More research on similar groups of students completing our questionnaire would therefore be welcome.

Conclusion

Our aim was to identify the main patterns in junior business students' strategic reading behaviour when dealing with academic texts in English as a second language. For this purpose, we designed a questionnaire about metacognitive awareness of reading strategies and reading confidence (i.e. self-perceived competence in text retelling). The five-factor structure of the questionnaire resulting from the factor analysis consisted of four factors related to four reading strategies, i.e. Repeated Reading, Monitoring and Regulation, Note Taking and Elaboration (using one's prior knowledge and context clues), and one factor describing students' self-perceived competence in text retelling (Reading Confidence).

Positive correlations between Repeated Reading, Monitoring/Regulation and Elaboration confirmed the interrelatedness of strategic processes when students are confronted with demanding academic readings in English as a second language. However, the Note-Taking strategy negatively correlated with Reading Confidence (Self-Perceived Competence in Text Retelling) and was not related to any of the other three strategies. The negative correlation implies that the more confident students were about their reading, the less they reported the use of note taking while dealing with a text.

Our findings provide a meaningful basis for analysing the role of strategic reading behaviour in text comprehension. Further research may include different types of college students (e.g., junior/senior) from different fields (e.g., business, medicine) and with different language background (e.g., native/foreign language). We believe that our study might also contribute to the development of strategy training towards more efficient reading, for example, on how to use note taking to facilitate comprehension.

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