

What PISA Set Aside? The Ignored Role of Writing Skills and Reading Fluency in OECD PISA Reading Literacy Assessments

Krisztina Szabó, Budapest University of Technology and Economics, Hungary

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Abstract

The OECD/PISA Reading Literacy Assessments (RLA) are the most accepted but controversial large-scale measurements, which generate significant debates about their validity. The consequences drawn from the survey reports of 2000-2022 seem to be misleading in several cases, especially how they discuss/ignore writing skills and reading fluency. In my lecture, I claim that (1) the PISA RLA's conceptual background didn't make allowance for the role of writing in reading, nor the tasks and answer sheets. (2) PISA RLA took reading fluency among 15-year-old students for granted, and this was in contradiction within their own conceptual background. (3) These are significant conceptual mistakes with huge effects on the assessments' results. Thus (4) the results of the PISA RLA before 2018 should be treated with reservation or be re-evaluated involving proper inclusion of writing skills and reading fluency. (5) Without this, we have strong grounds to criticise all the PISA RLA results before 2018. (6) PISA2018 did take into consideration writing skills implicitly in the evaluation process but it did not assess them explicitly. (7) Also, PISA2018 discussed reading fluency, but the opposing claim of the framework leads to an inner conceptual anomaly, and it is unclear how the survey considers fluency in the evaluation process. (8) Hence, the results of the RLA before 2018 are also questionable. In my paper I am aiming to prove my statements through specific examples from the OECD PISA RLA Assessment and Analytical Framework documents.

Keywords: OECD Pisa, Reading Assessments, Writing Skills, Reading Fluency, Literacy, Text Comprehension, Screen Reading, Digital Reading

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Introduction

This paper is willing to show some controversies and difficulties in assessing reading literacy skills. The case study of the discussion is the Reading Literacy Assessments (RLA) of the Programme for International Student Assessment (PISA) that are conducted by the Organisation for Economic Co-operation and Development (OECD) between 2000-2022 (OECD PISA, n.d., OECD, 2016b; OECD, 2016c). These most accepted but controversial large-scale measurements generate significant debates about their validity (Zhao, 2014; Zhao, 2016a; Zhao, 2016b; Zhao, 2019; Zhao, 2020); however, they are unique in their own kind. These international assessments repeated in every three years are focusing on 15-year-old students from all over the world, pursuing their Mathematics, Science and – the subject of this paper – Reading Literacy skills throughout various paper and pencil, or onscreen digital tests (OECD PISA FAQ, 2017).

Investing massive amount of money, enormous work and effort on pursuing students' reading and text comprehension skills cyclically is a reasonable and essential achievement, since we are living – from at least our first year of school until death – in a world where basic everyday information as well as high level knowledge are coded, stored, available and shared in texts. No matter whether we are talking about offline or online, handwritten, printed or digital contents, we must reach a level of proficiency in reading, comprehending and even writing to manage life, improve and prevail. Typically, those countries whose people are failed behind in literacy are also failed behind in other fields, because being literate is the key to knowledge, to self- and common improvement. (OECD PISA, n.d.) Nevertheless, these statements are trivial, reading literacy is still an issue in many countries – and not necessarily in the developing ones only (OECD PISA, n.d.). Money of course can determine the educational methods, system, and policy of a country; however, open discussion, groundbreaking innovative attitude, and cooperation between the different actors of the various fields of education are more important. Unfortunately, it seems that the OECD PISA become a 'monolith' that causes unnecessary and even harmful competition between the countries taking part in the assessment's series, and the loud media coverage after every new PISA report easily suppress real scientific discussion or lead them to wrong directions (Xhiha, 2016; Zhao, 2019; Zhao, 2020; OECD and PISA..., 2014).

The findings of this paper are part of my recent ongoing research (Szabó, 2020) and publishing them aims to break out from above mentioned purposeless debate about the legitimacy of the OECD PISA RLA. Instead, the purpose is to give some conceptual aids, remarks, feedback or even criticisms concerning the high prestige RLA for future upgrading, addressing them to those educators and researchers who are (a) working on the improvement of the OECD PISA RLA; and (b) interested in the education, improvement, and assessment processes of children's reading literacy. Methodologically, I did a close critical reading meaning examining all the analytical and framework documents of OECD PISA RLA between 2000-2022 (OECD, 1999; 2003; 2006; 2009; 2013; 2016a; 2016d; 2019a; 2019b; 2019c). The aim was to compare these documents to the contemporary literature and exploring the conceptual, theoretical, and methodological deficiencies – if there are any, focusing on the involvement of writing skills and reading fluency. Based on these comparisons, I will argue along eight strongly connected hypotheses, separate them into those that focusing on (A) writing skills and (B) reading fluency. Then, (C) I will present the relevant improvements of the RLA according to the latest, available OECD PISA RLA documents. After presenting the argumentation, the paper shows the consequences of the

research findings as well as some possible ways of further research that are necessary to meet the challenges of reading literacy especially in the digital age.

Hypotheses

Reading through all the already referred analytical and framework documents of the OECD PISA RLA that has been officially published between 2000-2022, I claim the following hypotheses focusing on writing skills and reading fluency: (1) the PISA RLA's conceptual background didn't make allowance for the role of writing in reading, nor the tasks and answer sheets. (2) PISA RLA took reading fluency among 15-year-old students for granted, and this was in contradiction within their own conceptual background. (3) These are significant conceptual mistakes with huge effects on the assessments' results. Thus (4) the results of the PISA RLA before 2018 should be treated with reservation or be re-evaluated involving proper inclusion of writing skills and reading fluency. (5) Without this, we have strong grounds to criticise all the PISA RLA results before 2018. (6) PISA2018 did take into consideration writing skills implicitly in the evaluation process but it did not assess them explicitly. (7) Also, PISA2018 discussed reading fluency, but the opposing claim of the framework leads to an inner conceptual anomaly, and it is unclear how the survey considers fluency in the evaluation process. (8) Hence, the results of the RLA before 2018 are also questionable.

In the following section, I will present proofs/refutations along these hypotheses with the help and on the ground of contemporary scientific literature about reading, focusing on the role of writing skills and reading fluency in reading and in literacy assessments.

Discussion

A. The Ignored Role of Writing Skills

Reading through carefully the given analytical and framework documents of the OECD PISA RLA, it was striking how the conceptual background ignores the essential role of writing in the process of reading. However, nearly all the examined contemporary scientific literature cited in the list of References are agreed on that writing has an inevitable role in reading and text comprehension, and the two processes are so strongly connected and have almost inseparable effect on one another that they cannot be assessed wisely if we left one of them from the picture. Especially, when we analyse children's reading performance, writing should not be ignored, since it is a building brick in the improvement of literacy skills. "A child's literacy development is dependent on this interconnection between reading and writing. [...] reading affects writing and writing affects reading. [...] practice in writing helps children build their reading skills." (K12 Reader, 2016, para. 1). This theory has two important consequences: (1) one can assess and capture the level and improvement of children's reading literacy skills if they examine reading and writing together; (2) those children who are taught and practiced in writing for e.g., essays and short stories or in answering to open-ended questions, should have better reading literacy skills comparing to children who do not write regularly and who are trained for filling true or false and multiple choice questionnaires that require no or negligible wording and phrasing skills. This latter statement contradicts the RLA results if we take some of those accusations against PISA about how certain countries and regions gain advantage and reach higher score in the assessments by training constantly their students to filling tests. Thus, the tasks do not assess reading literacy skills but test-

filling-under-pressure-skills, which is a completely different set of skills – and presumably not the purpose of the testing.

In its assessment series, the RLA applies the method of the multiple-choice, complex multiple-choice question and open constructed response tasks (OECD PISA FAQ, 2017; OECD 2003, p. 117). Let us focus on the latest, when children need to phrase their answers individually, with their own words, in complete sentences. According to literature, “15-year-old children are in the interval of practice their writing skills, meaning that performing a well-phrased answer can be a challenge for them by default (Kellogg, 2008, p. 4). If we accept this statement, we can easily see that giving fine answers to open-constructed response tasks do not entirely depends on reading comprehension but writing skills as well. Thus, it can occur, for instance, that a student comprehends a text well but presents a poorly phrased written answer due to difficulties in writing, and therefore she will get bad scores. “Considering a topic under study and then writing about it requires deeper processing than reading alone entails” (Fordham, Wellman & Sandmann, 2002, p. 151).

Another issue here is the evaluation. According to the RLA’s analytical and framework documents, in the case of open-constructed response tasks, some “[...] require considerable subjective judgement by markers, as when the reader is asked to summarise a text in his or her own words” (OECD 1999, p. 34). Since the RLA does not explain in detail how subjective the subjective judgments are, these can be critical points. Therefore, we can presume that (1) those students who are better writers gain an advantage; (2) answers, which consist of all the right keywords and formed at a high level, are worth a higher score than those responses which do the same but with a poor sentence quality; (3) two students for similar answer quality could get different points from different evaluators. No matter whether they have good literacy and writing skills or good literacy but bad writing skills: in neither case, we will know whether they have good comprehension skills or not. What we will know is a subjective judgement on their writing skills. Nevertheless, the framework documents of PISA2000-PISA2012 completely ignored the issue of writing skills and did not refer to it at all. However, the percentage of open constructed response items were 44% (PISA2000) and 43% (PISA2003; PISA2006) even in the beginning of PISA surveys.

The inadequacy is more striking in the case of electronic/digital reading material. In 2015 the whole assessment was conducted via digital platform, and the in the analytical and framework document PISA2015 stated that there “is research evidence that a computer-based testing environment can influence students’ performance in reading” (OECD, 2016d, p. 58). This occurs not just because of the different methods and strategies of reading required by the platform shift and contents styles but also the surface, more precisely the medium itself that – among many other attributes and variants – makes readers to act mentally (for e.g., digital text inclusion vs. information seeking; processes of the brain reacting to digital signs and interactive visual elements; skipping and scrolling; memorizing digital information; struggling with distractions rooted in the digital nature of the content, etc.) and physically (managing the electronic device; blue screen and ‘screen-tiredness’; reading poses; the physical experience of touching and holding electronic surfaces, etc.) different than in the case of print reading.

In 2018, when the digital assessment continued, PISA2018 claimed the following: “Several studies based on PISA data suggest that the response format has a significant effect on the performance of different groups.” (OECD, 2016d, p. 31). This should not be a surprise, if we remember the essential role of writing in the reading performance. As in the case of paper

and pen, children must learn how to create digital content with the use of the physical or on-screen keyboard (typing and touching) and all the digital aids (for e.g., sidebars, visual guiders, icons, changeable sized textboxes, and windows, etc.) There is research evidence that brain processes are different during handwriting than in the process of typing, so as the way how we memorize information. No matter how ‘digital-native’ (Prensky, 2001) the examined 15-year-old age group is, to perform written content in a given electronic tool (vs. not with their own familiar pencil or pen) is an additional challenge during the assessment. However, both PISA2015 and PISA2018 assessments considered writing as an “administration mode” (OECD, 2016d, p. 58), and not as a skill, which is strongly connected to, but also not identical with, text-reading and processing skills. If children who are more skilled in digital writing perform higher quality responses than the others struggling with composing, editing, typing, etc. via digital platforms, then we get a picture about digital writing skills and not about digital reading skills – or reading skills at all. Regarding the high percentage of open constructed response formats remained in the digital assessment process as well, the role of digital writing skills should not be disregarded. Nevertheless, the RLA did not face the existing problem of children who read the actual texts but cannot solve the connected tasks because they have a lack of writing or composing skills or have difficulties in grammar both in paper-and-pencil and computer-based tests. Thus, if the aim was only to examine reading skills without writing skills, then open constructed response items should have been better to leave out of the survey.

B. The Ignored Role of Reading Fluency

The tight connection of reading and writing is one issue, but reading fluently, without major obstructions and in a considerably rapid way – thus fast enough to progress but slow enough to capture the meaning – is another essential aspect of reading. According to literature, fluency [...] is in strong connection with reading comprehension; moreover, “robustly predicts performance on state reading tests across grades and states” (Penner-Wilger, 2008, p. 4). We can talk about oral and silent fluency, the previous occurs in reading aloud situations, while the latter in individual reading without no audience. Large-scale testing situations such as the OECD PISA RLA, of course, involve silent reading fluency. Silent reading fluency involves comprehension (making meaning), automaticity of word recognition (rate and accuracy), and the use of syntactic cues (“chunking” of words into larger units) (Oakley, 2003).

According to literature, “text-reading fluency skill can be considered a »proxy« for overall reading competence” (Crosson & Lesaux, 2010, p. 476); however, proficiency in reading fluency depends on the reading situation, varies according to genres (e.g., magazine articles vs. academic papers), readability of the text, reader’s background knowledge, “and the priority the student gives to speed versus accuracy in the specific situation [...]” (Penner-Wilger, 2008, p. 3). The specific assessment situation, when children need to read and answer questions in a limited time interval, influences students’ fluency level, therefore their overall reading performance. Decoding has a reciprocal relation with comprehension; when reading in an area of expertise, comprehension can aid decoding” (Penner-Wilger, 2008, p. 3-4). In contrast, poor fluent readers must focus on decoding, word recognition, and sentence-connecting harder. Hence, they may not have the energy and cognitive effort to understand the meaning of the text. Thus, the level of reading fluency, whether we talk about print or screen reading, is not equal to the level of comprehension. Slow or non-fluent reading is not necessarily equal to poor text comprehension or futile reading, and vice versa (Walczyk & Griffith-Ross, 2007).

Despite of the various available research about the role of fluency in reading assessments, the OECD PISA RLA took reading fluency among 15-year-old students for granted. According to PISA2000-PISA2015: “it is assumed that most 15-year-olds will have acquired these [=] reading fluency)” (OECD, 1999, p. 13), but this attitude was in contradiction within their own framework until the construction of PISA2018. The latter claimed that: “[...] such as fluent reading [...] are critical skills for processing complex or multiple texts for specific purposes” (OECD, 2019, p. 24), but there is no trace of considering this issue in the analytical and framework document at all. Considering the above and knowing that PISA2015 and PISA2018 were conducted entirely or partially via digital platforms, we cannot presume that the platform shift has no effects on the decoding process at all, and on reading fluency either. However, “fluency needs to be a concern for teachers at all grade levels, not just teachers of beginning readers. It makes good sense that even older students who read with a lack of sufficient fluency will have difficulty comprehending what they read” (Rasinski, Padak, McKeon, Wilfong, Friedauer & Heim, 2005, p. 27). Thus, ignoring the factor of reading fluency is the RLA’s severe methodological mistake with huge effects and influence on the assessments’ results and the evaluation process. PISA2018 has started to reflect on the issue of reading fluency that can be considered as an improvement; however, it is not clear how the survey took into consideration the factor of fluency in the evaluation process.

C. The Ignored Field of Reading Literacy

In April 2019, due to the unfortunate Coronavirus situation and home schooling, the OECD PISA did the following announcement in the beginning of the new assessment and framework document: “OECD member countries and Associates decided to postpone the PISA 2021 assessment to 2022 to reflect post-Covid difficulties. This draft vision was created before the crisis. The final version will reflect the new name of the cycle “PISA 2022” (OECD, 2019c, p. 1). The draft components of the PISA2022 are the followings: Creative Thinking, Financial Literacy, ICT, Mathematics and Questionnaire (OECD, 2019c). Thus, surprisingly, PISA interrupts its tradition started in 2000, and completely deleted the Reading Literacy Assessment from the assessment series – or merged it into other assessment topics. Analysing the available documents, PISA did not give any clear explanation or justification of this decision so far, which is more striking since the complete program for testing students skills started with reading literacy as a major topic in 2000. Creative Thinking and ICT seem to be the closest topics to reading literacy, but in the available analytical and framework documents do not mention or refer to literacy. The major assessment topics in 2025 will be Learning in the Digital World (OECD PISA, n.d.), but without further detailed information we cannot say whether it is going to involve at least digital reading or not. Naturally, nothing can be said about the role of writing skills and reading fluency in the assessment series conducted in 2022 or will be conducted in 2025.

Concluding Remarks and Directions of Possible Further Research

The consequences drawn from the survey reports of 2000-2022 seem to be misleading in several cases, especially how they discuss/ignore writing skills and reading fluency. In this paper, after having analysed all the available analytical and framework documents by the method of close critical reading, and comparing them to the cited contemporary literature of the field, I stated the following eight hypotheses:

(1) the PISA RLA's conceptual background didn't make allowance for the role of writing in reading, nor the tasks and answer sheets. (2) PISA RLA took reading fluency among 15-year-old students for granted, and this was in contradiction within their own conceptual background. (3) These are significant conceptual mistakes with huge effects on the assessments' results. Thus (4) the results of the PISA RLA before 2018 should be treated with reservation or be re-evaluated involving proper inclusion of writing skills and reading fluency. (5) Without this, we have strong grounds to criticise all the PISA RLA results before 2018. (6) PISA2018 did take into consideration writing skills implicitly in the evaluation process but it did not assess them explicitly. (7) Also, PISA2018 discussed reading fluency, but the opposing claim of the framework leads to an inner conceptual anomaly, and it is unclear how the survey considers fluency in the evaluation process. (8) Hence, the results of the RLA before 2018 are also questionable.

Surprisingly, PISA 2022 deleted the topics of reading literacy from the assessment series without clearly phrased explanation or justification, and unfortunately, the new framework of Critical Thinking and ICT do not refer to literacy or the issues of text comprehension at all. At present, the analytical and framework documents of PISA2025 are not available yet, but after their future release they can hopefully serve a good material to discover the new approach of the OECD PISA assessments series and find out the actual stance of the institution concerning literacy. Personally, I consider the examination both print and digital reading performance inevitable in the future, and I support to continue the research and keep literacy among the major individual fields of testing. In the era of digital reading, learning, and teaching, understanding comprehension processes and gain information about digital and visual literacy, evaluating information, the new reading experience or processes of memorisation could be the key for creating useful digital contents, entertaining and teaching material for children to improve their skills and cognition in a long run.

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Department of Philosophy and History of Science, Faculty of Economic and Social Sciences, Budapest University of Technology and Economics, Műegyetem rkp. 3., H-1111 Budapest, Hungary.

References

- Crosson, A. C. & Lesaux, N. K. (2010). "Revisiting assumptions about the relationship of fluent reading to comprehension: Spanish-speakers' text-reading fluency in English". *Reading and Writing*. 23(5): 475–494.
- Fordham, N. W., Wellman, D. & Sandmann, A. (2002). "Taming the text: Engaging and supporting students in social studies readings". *The Social Studies*. 93: 149–158.
- K12 Reader. (2016). *The Relationship Between Reading and Writing*. At <https://www.k12reader.com/the-relationship-between-reading-and-writing/>. Last accessed: 15. 08. 2023.
- Kellogg, R. T. (2008). "Training writing skills: A cognitive developmental perspective". *Journal of Writing Research*. 1(1): 1–26.
- Oakley, G. (2003). "Improving oral reading fluency (and comprehension) through the creation of talking books". *Reading Online*. 6(7) At: http://www.readingonline.org/articles/art_index.asp?HREF=oakley/index.html. Last accessed: 15. 08. 2023.
- OECD PISA FAQ. (2017). At <http://www.oecd.org/pisa/pisafaq/>. Last accessed: 30. 04. 2020.
- OECD PISA. (n.d.). At: <https://www.oecd.org/pisa/>. Last accessed: 15. 08. 2023.
- OECD. (1999). *Measuring Student Knowledge and Skills: A New Framework for Assessment*. Paris: OECD Publishing.
- OECD. (2003). *The PISA 2003 Assessment Framework: Mathematics, Reading, Science and Problem Solving, Knowledge and Skills*. Paris: OECD Publishing.
- OECD. (2006). *Assessing Scientific, Reading and Mathematical Literacy: A Framework for PISA 2006*. Paris: OECD Publishing.
- OECD. (2009). *PISA 2009 Assessment Framework: Key competencies in reading, mathematics and science*. Paris: OECD Publishing.
- OECD. (2013). *PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy*. Paris: OECD Publishing.
- OECD. (2016a). *PISA 2015 Assessment and Analytical Framework: Science, Reading, Mathematic [sic], Financial Literacy and Collaborative Problem Solving (Revised edition)*. Paris: OECD Publishing.
- OECD. (2016b). "How does PISA help shape educational reform?" YouTube video at <https://www.youtube.com/watch?v=-xpOn0OzXEw>. Last accessed: 15. 08. 2023.

- OECD. (2016c). “*How does PISA work?*”. YouTube video at <https://www.youtube.com/watch?v=i4RGqzaNEtg&feature=youtu.be>. Last accessed: 15. 08. 2023.
- OECD. (2016d). *PISA 2018 Draft Analytical Frameworks May 2016*. Paris: OECD Publishing.
- OECD. (2019a). *PISA 2018 Assessment and Analytical Framework*. Paris: OECD Publishing.
- OECD. (2019b). *PISA 2018 Released Field Trial and Main Survey New Reading Items*. Paris: OECD Publishing.
- OECD. (2019c). *Draft components of the PISA 2022 Assessment and Analytical Framework*. At <https://www.oecd.org/pisa/publications/pisa-2021-assessment-and-analytical-framework.htm>. Last accessed: 15. 08. 2023.
- “OECD and PISA tests are damaging education worldwide – academics”. (2014). Blog post on 6th May 2014. At: <https://www.theguardian.com/education/2014/may/06/oecd-pisa-tests-damaging-education-academics>. Last accessed: 15. 08. 2023.
- Penner-Wilger, M. (2008). *Reading Fluency: A Bridge from Decoding to Comprehension*. Cambridge MA: AutoSkill International Inc. At http://edtechpartners.com/wp-content/uploads/2013/10/Fluency_Research.pdf. Last accessed: 15. 08. 2023.
- Prensky, M. (2001). “Digital Natives, Digital Immigrants”. *On the Horizon*. MCB University Press. 9(5): 1–6.
- Rasinski, T. V., Padak, N. D., McKeon, C. A., Wilfong, L. G., Friedauer, J. A. & Heim, P. (2005). “Is reading fluency a key for successful high school reading?” *Journal of Adolescent & Adult Literacy*. 49(1): 22–27.
- Szabó, K. (2020). *Assessing the “Invisible”. Critical Discussion about the OECD/PISA Reading Literacy Surveys*. Doctoral dissertation.
- Walczyk, J. J. & Griffith-Ross, D. A. (2007). “How important is reading skill fluency for comprehension?” *The Reading Teacher*. 60(6): 560–569.
- Xhiha, V. (2016). “The PISA Shock”. Blog post on 19 December 2016. At <http://www.bonevet.org/blog/the-pisa-shock/>. Last accessed: 15. 08. 2023.
- Zhao, Y. (2014). *Who’s Afraid of the Big Bad Dragon? Why China Has the Best (And Worst) Education System in the World*. San Francisco: Jossey-Bass.
- Zhao, Y. (Ed.). (2016a). *Counting What Counts: Reframing Education Outcomes*. Bloomington, IN: Solution Tree Press.
- Zhao, Y. (2016b). *Who’s Afraid of PISA: The Fallacy of International Assessments of System Performance*. In: Harris, Alma, Jones, Michelle S. (Eds.). 2016. *Leading Futures: Global Perspectives on Educational Leadership*. Thousand Oaks, CA: Sage. 7–21.

Zhao, Y. (2019). “The PISA Illusion”. Blog post on 5th December 2019. At:
<http://zhaolearning.com/2019/12/05/the-pisa-illusion/>. Last accessed: 15. 08. 2023.

Zhao, Y. (2020). *PISA Peculiarities (3): More Fear, Better Scores*. At:
<http://zhaolearning.com/2020/01/09/pisa-peculiarities-3-more-fear-better-scores/>. Last
accessed: 15. 08. 2023.

Contact email: szabo.krisztina@gtk.bme.hu