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Editorial

The Role of Textbooks in Teaching and Learning Processes

The theme of this issue of the CEPS Journal is the role of textbooks in teaching and learning processes. Nowadays, a range of learning resources are used to support students in their learning process, among which textbooks are the most notable. Textbooks play an important role in almost every school system in the world, representing a useful resource for both teachers as course designers and students acquiring knowledge. However, the use of commercially published textbooks and other teaching and learning resources has advantages and disadvantages, and it is this aspect that we initially wanted to explore in this focus issue. We aimed to investigate the advantages and disadvantages of using a textbook, as well as ways of adapting textbooks that provide teachers with an opportunity to personalise teaching material and enable students to be more actively involved in the learning process. In addition, we intended to focus on differences in the use of printed and digital textbooks, as well as addressing the question of the extent to which printed textbooks are being replaced by digital learning tools and other non-textbook materials and how this affects the quality of education. In this context, we invited authors to investigate the quality criteria for evaluating textbooks, such as whether they address individual learners' needs, maintain high standards of design and production, follow the aims and objectives of syllabuses or course programmes, use effective teaching and learning approaches and methods, are accompanied by various learning resources, are sensitive towards gender equality, etc. In response, we received a selection of theoretical and empirical articles that bring new insights into the role of textbooks in teaching and learning processes.

In the first article, entitled *The Changing Role of Textbooks in Primary Education in the Digital Era: What Can We Learn from Reading Research?,* the authors discuss how textbooks, a primary teaching tool for most children since the nineteenth century, have evolved from a linear to a dynamic layout, and how, in the last decades, screens have started to complement printed books as one of the main textbook substrates. There has been a great deal of research on how the content of textbooks has changed in line with changing values in different societies and over different periods of time, but little research has been done on how different types of textbook substrates and design have changed, and how these changes have affected learning and comprehension. The authors looked at a set of reading studies, studies on multimodal learning and PISA 2021 results to draw the conclusions that readers can learn about in the article. The

article was produced as part of the project "Za kakovost slovenskih učbenikov" (For the Quality of Slovenian Textbooks), which is co-funded by the Republic of Slovenia and the European Union from the European Social Fund.

In the second article, entitled *Textbooks and Students' Knowledge*, the authors also focus on textbooks as a source of students' knowledge, by using data on student knowledge measured independently by national assessments and the Trends in International Mathematics and Science Study, TIMSS 2015. They explore the differences in knowledge and attitudes to learning between students who are taught by different textbooks. Although the study has considerable limitations due to missing data, the results of the analyses indicate some profound differences in knowledge and attitudes between groups of students using different textbooks. We would like to especially highlight the authors' conclusion and valuable recommendation for education policymakers "that these findings could serve as support for improving the criteria in the national system of validation of textbooks in the future. The link between the use of textbooks and student learning outcomes also highlights the need to systematically collect information on the use of textbooks among students and follow the effects on achievement in order to improve the quality of future textbooks." This article was also produced as part of the aforementioned project "Za kakovost slovenskih učbenikov".

The next article, entitled *Textbooks and Teaching Materials in Rural Schools: A Systematic Review*, presents a systematic review of research papers in the last decades aimed at analysing the concept of multigrade teaching resources and the teaching materials used by teachers in rural schools. Their use and dimensions are studied in order to promote inclusion and learning in multigrade classrooms, organised with children of different ages mixed together. The article effectively presents the challenges of multigrade didactic materials and their relation to teaching-learning processes. The need to personalise and adapt printed or digital textbooks and other teaching materials to involve students actively in the learning process and respond to the needs of rural students in multigrade classrooms is highlighted.

The following two articles explore different aspects of textbooks in mathematics. The first article, entitled *Differences in the Requirements of Digital and Printed Mathematics Textbooks: Focus on Geometry Chapters,* encompasses an analysis and comparison of the tasks in the printed and digital versions of the same mathematics textbook set, which covers Grades 1 to 4 of primary education in Croatia. The results show that both the printed and the digital textbook tasks have traditional requirements, with an emphasis on closed answer forms. The findings highlight the need for reflection on the meaningful use of

the possibilities that the digital environment brings to textbook creation, and indicate that textbook authors do not yet know how to make full use of these possibilities in the creation of learning materials. In the second article on mathematics education, entitled *The Teaching of Initial Multiplication Concepts and Skills in Croatian Textbooks*, the authors examine the teaching of initial multiplication by comparing Croatian mathematics textbooks with textbooks from Singapore, Japan and England. The analysis provides evidence that practice and automation are the focus of the initial learning of multiplication in Croatia, and that students are not encouraged to use different calculation strategies in a flexible manner.

The next article, entitled *Nature of Science in Greek Secondary School Biology Textbooks,* analyses the presence of Nature of Science (NOS), an essential aspect of scientific literacy, in all Greek biology textbooks, workbooks, lab guides and teachers' books of lower secondary education. The authors find that most NOS references in the studied material were lacking the explicit references of NOS. The article also has a methodological value. The presented content analysis would be worth replicating in other school systems/countries, because NOS is essential for the learning of science and the achievement of scientific literacy (Lederman et al., 2013).

The last article of this focus issue is entitled *Theorising Textbook Adaptation in English Language Teaching.* It proposes a research-informed framework to contribute to a systematic description of textbook adaptation in foreign and second language teaching. It is worth mentioning that even though it is related to English language teaching, the article also has useful implications for research on textbook use in other disciplines.

We are very pleased to be able to publish an interview with Richard E. Mayer on the topic of multimedia materials and textbooks in this focus issue. The interview was conducted online in February 2021 (via an exchange of emails between Ljubljana, Slovenia, and Santa Barbara, California, USA). Multimedia learning theory (Mayer, 2001, 2005) is a fundamental theory for the design and use of textbooks and other types of multimedia learning tools. With this interview, we wanted to provide some important guidance for ensuring the present and future quality of textbooks and other educational materials.

A book review completes the contents of the focus issue. The book is entitled *The Palgrave Handbook of Textbook Studies* (2018) edited by Eckhardt Fuchs and Annekatrin Bock, published by Palgrave Macmillan (ISBN: 978-1-137-53141-4).

In addition to the focus issue, there are also four articles in the Varia section and a book review dealing with *Becoming Scientific: Developing Science*

across the Life-Course (2020) written by Saima Salehjee and Mike Watts, published by Cambridge Scholars Publishing (ISBN: 1-5275-5498-8).

We wish you pleasant reading and abundant new insights.

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