Book Review

Research methods for understanding child second language development

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Child second language development (CSLD) has long been an underexploited field in language learning and teaching. This is mostly because the study of children of primary and pre-school years who have their own special language developmental features poses various challenges and complexities (e.g., Guz & Tetiurka, 2013; Lam & Li, 2016; Kan & Murphy, 2020; Vraciu & Marsol, 2023). One of the challenges and difficulties concerns research methods that need to be age-appropriate and different from those designed for studying adults, an issue also vitally important for conducting high-quality research and obtaining reliable and valid results. *Research Methods for Understanding Child Second Language Development*, edited by Yuko Goto Butler and Becky H. Huang, fills a significant gap by providing a comprehensive overview of research methods and techniques specifically tailored for CSLD.

This book is composed of eleven chapters with a wide coverage of research methods varying from more qualitatively oriented approaches to more quantitively

oriented psycholinguistic methods. The methods include those usually employed in existing second language (L2) development research, which then have been adapted, and those especially designed to investigate children's proficiency in both productive and receptive language use. The introductory chapter by Becky H. Huang and Yuko Goto Butler reviews the growth of CSLD research, laying emphasis on children's unique linguistic, cognitive, and social features that differ significantly from adult learners. It also discusses the challenges associated with studying child language learners and stresses the necessity of modifying traditional research methods and searching for new ones that are age-appropriate.

Chapter 2, *Observation and Ethnographic Methods for Researching Young Learners* by Peter Sayer and Susan Ataei, discusses ethnographic observation as a method that involves collecting data primarily through direct observation of and interactions with young L2 learners. It critically reviews previous CSLD research that employs ethnographic observations, covering key aspects such as research questions, data collection, and theoretical frameworks. The major advantage of ethnographic observations as a data source to study CSLD is that it involves multiple observations of one or a group of young learners in the same setting over an extended period, thus helping researchers to obtain repeated authentic nonverbal and naturally-occurring interactions instead of induced ones, for example, in an experiment. However, the authors also acknowledge the observer's paradox, where researchers may inadvertently influence what they observe, suggesting that an optimal solution could be triangulation with other supplementary data sources to ensure data robustness.

In Chapter 3, *Surveys and Questionnaires with Young Language Learners*, Emiko Hirosawa and W. L. Quint Oga-Baldwin present the theoretical and practical aspects of using surveys in CSLD research, laying emphasis on the guidelines for survey design, especially for the design of questionnaires. They also explore the cognitive development of children, which plays a crucial role in determining their reliability as respondents in surveys. Practical tips and procedures for implementing surveys with young L2 learners that the authors share are worth reading, especially those for the development of valid items, implementation procedures or scoring. A checklist is also offered for beginner researchers to ensure that their surveys have the highest probability of success, including each necessary step for survey creation. Though there are some inherent limitations, as the authors note, surveys serve as a powerful tool, even among young L2 learners, to reveal latent variables that might not be directly observable.

Chapter 4, *Using Interviews with Children in L2 Research* by Annamaria Pinter, is concerned with the employment of interviews in CSLD research, focusing on children's own perspectives and insights regarding their language learning processes. After reviewing previous related studies involving interviews, Pinter summaries the challenges and principles of good practice of conducting interview, and

discusses how interviews can be adapted for young L2 learners. As Pinter emphasizes, interviews offer flexibility to quickly generate rich data on children's language learning experiences and are particularly effective in addressing private or sensitive topics. Some suggestions are also provided to address challenges involved in conducting interviews, especially with children, such as creating comfortable environments, ensuring the company of peers for more confidence, and fostering dialogical space that empowers children to freely voice their views.

In Chapter 5, *Verbal Reports as a Window for Understanding Mental Processes among Young Learners*, Yuko Butler discusses verbal reports, such as think-aloud and stimulated recall, as another method for exploring the mental strategies and metacognitive skills in CSLD. Butler also examines the use of verbal reports, think-alouds in particular, as a pedagogical tool to assist children's monitoring and self-reflective skills in language reading and writing. Similar to other methods in CSLD research, employing verbal reports with children poses age-related challenges and involves various pitfalls as verbal reports require veridicality and reactivity, which ensure the accuracy of children's verbal responses. Butler provides some tips that should be considered when planning and conducting verbal reports, such as allowing more preparation time, minimizing memory load, using video recordings, and offering prompts.

As has been argued, L2 speech production serves as a cognitive tool for young learners to develop higher mental functions (Vygotsky, 1986). Chapter 6, *Research Methods for Evaluating Second Language Speech Production* by Becky Huang and Rica Ramírez, centres on two categorized methods that can be used to evaluate children's L2 speech production, that is, standardized norm-referenced assessments and language sampling methods. By providing example measures in each category, the chapter discusses the challenges and age-related considerations when assessing children's L2 speech production skills concerning linguistic aspects from phonology to discourse organization. As Huang and Ramírez note, there is an increasing trend of incorporating technology, together with multiple assessments, to improve the validity of inferences made about children's L2 production.

In Chapter 7, *Receptive Methods in Child Bilingualism and Second Language Acquisition*, Silvina Montrul, Alexandra Morales-Reyes and Begoña Arechabaleta Regulez elaborate on two methods that can be used to evaluate receptive language skills in CSLD research, that is, a sentence-picture matching task and a grammaticality/acceptability judgment task. Providing a general description of each method, together with their assumptions, rationale, and related procedures, the authors clearly illustrate the advantages and challenges of using these tasks to conduct research into children's L2 development with respect to listening and reading. They also suggest using receptive methods in conjunction with productive ones to reveal whether the same or different factors influence children's comprehension and production. They also recommend employing other methods less cognitively demanding for children, such as

eye-tracking and online measures, to obtain a more comprehensive depiction of child L2 learners' linguistic knowledge, including data that might be sensitive to children from culturally, social-economically different backgrounds.

In the past decade, there has been a rise in the use of eye-tracking to uncover children's cognitive processes in L2 tasks. Chapter 8, *Eye-Tracking Methods in Child SLA Research* by Paola Dussias and Karen Miller, provides an overview of the advantages and difficulties of eye-tracking in exploring children's L2 development, focusing on the visual world paradigm, a research design incorporating experiments typically employed in eye-tracking and spoken language comprehension studies (e.g., Lemmerth & Hopp, 2019). A major advantage of the technique that involves recording eye-movements is that it enables researchers to gather real-time evidence about what is happening during children's language comprehension. However, the application of eye-tracking in studies involving children also requires particular care, such as considering age-related factors in research materials to maintain children's attention and including measures in the experimental procedure to reduce children's head movements. Triangulation through corpus-based textual analysis and integrating offline and online measures is also highly recommended to increase the validity of such research.

Chapter 9, *Brain Imaging Methods* by Nia Nickerson and Ioulia Kovelman, introduces two primary categories of neuroimaging tools used in CSLD, that is, the "When" and "Where" tools, to examine the neurobiological factors in L2 learners' phonological development. While the "When" tools, such as electroencephalogram (EEG), event-related potential (ERP) and magnetoencephalography (MEG), measure the timing of the brain's rapid electrical activity, the "Where" tools, such as fMRI and fNIRS, test the location of the brain's hemodynamic response (Yousaf et al., 2018). Though each of these neuroimaging tools has its own disadvantages when applied to child L2 learners, as pointed out by the authors, they help better understand the mechanisms of children's L2 development and, more importantly, the changes of children's brain function and anatomy due to L2 learning. Worth of mention is that this chapter also provides several research proposals for further investigation, with a specific emphasis on the sociocultural perspective.

Unlike other chapters focusing on one specific method, Chapter Ten, *Research Methods for L2 Children with Special Needs* by Li Sheng and Sharon Hollenbach, presents an overview of a variety of methods used in research specifically on young L2 learners with some kind of developmental language disorder. It summarizes common research questions related to this group of L2 learners and possible factors that influence their language development, such as their distinctive language and cognitive profiles or the psychometric properties of diagnostic measures. The chapter further discusses the main research methods that can be employed to address these research questions and the challenges related to these methods.

It also provides some potential solutions and suggestions for future research, such as relying on more inclusive approaches to participant selection to expand the participant pool and extending research to multiple language populations.

In the concluding chapter, *Considerations for Research Methods to Study Child Second Language Development*, Yuko Butler provides an overview of the different research methods covered in this volume. She discusses the major methodological challenges and age-related considerations, particularly concerning the dynamic and fluid features of child L2 development and the notion of research *with* children rather than *on* them. Butler categorizes the various developmental factors in CSLD research, including cognitive, affective, linguistic, cultural, and experimental ones, and offers a list of recommended modifications and adjustments to improve the applicability of the research methods in SLA for child participants. She also encourages the use of multiple approaches and digital technology to achieve more efficiency and validity in CSLD research.

The book is an essential and timely contribution to the field of CSLD by offering comprehensive information about the use of available research methods, both traditional and newly developed ones, and critical discussions of the challenges and considerations that need to be taken into account when these methods are applied. Equally important is that the volume encourages two trends with respect to research methods. One is research *with* children as opposed to research *on* children "to better incorporate children's views and voices" (p. 198). We as adult researchers cannot take it for granted that children are simply research subjects as we observe and interpret their behaviours. It would be very helpful, for example, to invite the child participants to analyze and interpret the data in an experiment since "children are experts in their own right" (Dahl, 2014, p. 595). The other trend is the use of mixed methods to avoid the influence of factors such as "power imbalances between adults and children" (p. 71). Using multiple methods in CSDL should be encouraged not just for triangulating data to improve research validity and reliability but also for better understanding the intricate interplay among language and developmental factors. These methodological proposals are extremely likely change the future research paradigm of CSLD. Another merit of this book is that every chapter provides an extension, including further reading and discussion questions, to help readers and potential researchers master the use of specific research methods. Some chapters are even appended with a list of tools or datasets that can be used for that specific research method. Last but not least, being extremely well-structured, the book also illustrates complex research methods in such an intelligible and accessible manner that even those with limited prior knowledge in this area can readily grasp the concepts being discussed.

However, CSLD is rather complex, and it is important for researchers in this field to be aware that each individual method illustrated in the book may only examine the tip of the iceberg. As Ellis (2019, p. 39) suggests, language development

"calls for greater transdisciplinarity, diversity, and collaborative work." This is particularly the case with CSLD. It is thus also important for CSLD researchers to bear in mind those data-collectors who apply these methods yet are overlooked in the book. While researchers mostly based in universities can devise innovative research designs but have less access to child learners, primary school teachers as data-collectors could help develop more appropriate research designs and bring their own strengths to collecting data from child participants in an experiment. Thus, the two groups could be ideal research allies in investigating CSLD. Also, we need to think about the new methods introduced in the book from two perspectives. On the one hand, the so-called newly developed methods like fMRI are no longer new. It is thus important to recognize the need for developing more novel methods in this digital era, particularly regarding the advent of large language models (LLMs) that are potentially bound to introduce a profound change in L2 learning environments in the near future, which will require a corresponding adaptation in L2 teaching (Jeon et al., 2023). On the other hand, many groups of child learners are underrepresented in CSLD, and many groups of CSLD researchers lack adequate funding to access these new methods. Therefore, traditional methods, particularly qualitative ones, which are more accessible to these groups of researchers, should not be implicitly regarded as inferior. While the use of new technologies should be encouraged, it is important to acknowledge the lasting value of traditional methods as well.

Overall, the authors' profound expertise, demonstrated through their comprehensive understanding of research methods, special attention to detail, and inclusion of research materials, make this book an invaluable resource. It can serve as an indispensable roadmap and a source of practical guidelines for those at the beginning of their adventure with child L2 research. This said, it can also greatly benefit experienced researchers and practitioners willing to refresh their knowledge of established research methods or expand their repertoire of techniques for examining CSLD.

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