

Considerations to promote and accelerate Open Science: A response to Winke

Language Testing

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Winke (2024) provides an overview of the role and significance of Open Science (OS) in language testing (LT). She argued that “using Open Science to increase evidence-based, public trust in language testing will create better tests and promote better uses of the tests’ scores” (p. 2). We echo Winke’s advocacy of OS because it can enhance the field in many ways. For example, OS promotes the “*clarity* of research methods and communication” (p. 846, original emphasis), enabling a more comprehensive contextualization and interpretation of research findings. This helps readers better understand the findings—their generalizability, for example—so that they can make more judicious and informed decisions on how to apply the findings to their own context.

To further promote OS practices in LT, we present two viewpoints as researchers situated in Japan, which may help researchers in other parts of the world: (a) increase opportunities to learn about OS and (b) create supportive environments that value and incentivize OS practices. Before delving into these points, we describe the current OS-related situations in Japan.

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Many journal articles published in Japan are available open access. *JLTA Journal*, the official journal of the Japan Language Testing Association, which closely aligns with *Language Testing* in objectives and scope, offers free access to all articles. Similarly, the flagship publication of the Japan Association for Language Teaching, *JALT Journal*, offers open access for all its articles not published within the last 6 months. The JALT Testing and Evaluation Special Interest Group also publishes an open-access peer-reviewed journal, *Shiken*.

Most open-access journals, including *JLTA Journal*, are hosted on the J-STAGE platform (see Japan Science and Technology Agency, 2024). The prevalence and success of open-access publishing in Japan may be attributed to having this platform funded by the Japanese government.

The J-STAGE platform provides academic associations with advanced online publication systems, either independently or through professional intermediaries, removing the requirements of technical skills such as programming or online infrastructure development. The platform can be used free of charge and is relatively user-friendly. As of 28 December 2023, 1230 peer-reviewed journals in Humanities and Social Sciences are available on J-STAGE; more than 90% are accessible free of charge (see Supplemental Appendix A for more details). These numbers suggest that the platform has been widely accepted among academic associations, catalyzing the success of many Japanese journals in open-access publishing (see for similarly useful platforms e.g., GitHub and PsyArXiv; see also Winke, 2024).

While open-access publishing in Japan, supported by the J-STAGE platform, is commendable, other essential OS practices, such as preregistration and the provision of open materials, data, or code remain uncommon, perhaps because of limited opportunities for individuals to learn about OS in tertiary education and in the context of journal publication. One reason for the slow adoption of these OS practices in LT in Japan may be a limited number of actively engaged language testers in Japan. This limited number could be attributed to a paucity of university-level LT courses and educators' heavy school workload (Mason, 2019). To address these challenges and promote OS in the field, concrete measures should be taken. These actions can apply not only to Japan but also to other countries facing similar issues and to the LT field in general (see Isaacs & Winke, 2024).

Increase opportunities to learn about OS

Concrete actions that are directly linked to OS should be implemented by increasing OS-learning opportunities at graduate schools and during article submission and publication stages. Graduate programs must integrate OS learning for early-career researchers. This includes offering symposia and workshops, and embedding OS practices in course curricula. In particular, courses with a methodological focus should be underpinned by hands-on activities. Following basic procedures and exemplary cases, students can analyze how published articles follow OS principles, including the availability of OS components online as preprints, postprints, and supplementary data, code, and materials. In addition, preparing Open Accessible Summaries in Language Studies (OASIS) summaries, video abstracts, and abstracts in multiple languages can make research outcomes

more accessible to a broader audience. Students can actively engage in these OS practices, including creating and disseminating OS materials. For example, the second author (Maie) composed OASIS summaries for research published by other authors as part of a course assignment. This undertaking entailed carefully reviewing the source articles and crafting concise summaries for nonspecialist audiences. He consulted the original authors and posted summaries on the OASIS database as a co-author (e.g., Maie & DeKeyser, 2019). This improved his OS skills and academic writing, bolstering his portfolio of nonrefereed publications (see University of York, n.d.). Creating OASIS summaries would be particularly helpful in LT because such summaries are currently sparse compared to other areas in applied linguistics (e.g., 2 for *Language Assessment Quarterly*; 21 for *Language Testing*; in contrast, 209 in *Language Teaching Research*; 156 in *Studies in Second Language Acquisition*; see Supplemental Appendix B for additional activities that may be incorporated in methods courses).

Furthermore, researchers, regardless of career stage, would benefit from improving their literacy in OS principles to fully capitalize on its advantages. One effective approach would be to include OS principles in journal submission guidelines and even incorporate them into the criteria used by reviewers when evaluating articles (the latter suggestion was proposed by one of the current Special Issue guest editors). For instance, *Language Testing* includes descriptions of *Open Science Badges* in its submission guidelines (see Harding & Winke, 2020; SAGE Publications, 2024). In contrast, Japanese journals that publish LT articles rarely have OS-related descriptions in their submission guidelines. An exception is *Japanese Journal for Research on Testing*, a local publication encompassing testing and assessment across diverse subjects, not exclusively centered on language, to feature Preregistered, Open Data, and Open Materials badges. These badges were introduced in September 2021 and are outlined in the journal's submission guidelines (see Japan Association for Research on Testing, 2023). However, as of the time of writing, only one article (Hijikata & Okada, 2023) has earned an Open Materials badge, implying that LT needs not only opportunities for practicing OS, but also systems that incentivize and reward researchers for engaging in OS practices.

Create supportive environments that value and incentivize OS practices

Another direction for promoting OS in LT is creating a secure and rewarding environment. While many scholars acknowledge the benefits of OS, it increases their practical and psychological burden. Making materials, datasets, and analytic code publicly available means extending an open invitation for others to directly evaluate their data collection and analytical procedures. While this practice should benefit the field by increasing research transparency and reproducibility, the authors may fear their study being criticized by others. What if other researchers reanalyze the shared data using different techniques (which could be more sophisticated, or arguably more appropriate) and deem the original study's originally reported findings untrustworthy? Multiple systems are required to alleviate the psychological burden on authors and potentially reward them for actively engaging in OS practices.

At many levels of our community of practice, all researchers should work toward creating an open-minded culture of practicing OS, accepting (but seeking to correct) errors as a natural part of the research process. Language research, including LT, has rarely been flawless. We can recount many instances in previous research where we could (or should) have done better. This understanding is not a one-way street. One must adopt the same encouraging mindset when reviewing journal articles, conference abstracts, or grant proposals. We think that LT might be relatively amenable to this open-minded approach, especially in terms of updating study findings through refined theories and methodologies. This is because LT has, since its inception, explored and updated the constructs to be measured, assessment instruments, and analytical methods, and reanalysis has reshaped outcomes. Moreover, the field has witnessed the contrasting results of unitary versus multicomponential factor structures of language proficiency test data, driven by different statistical approaches (principal component analysis and factor analysis). These debates and explorations have been instrumental in advancing the field (see Farhady, 2018).

To further foster a supporting culture for OS practices, we must create systems for rewarding researchers who actively engage in the OS culture. For instance, hiring and promotion committees may consider OS practices (e.g., open data, materials, and code) as part of an applicant's (or employee's) research achievements. Thus, journals should consider awarding articles OS badges. Exemplary articles that comprehensively share supplementary materials, data, and code that is easy to use and reproducible should be recognized and awarded as models for other researchers to follow. Establishing these support systems requires collective efforts from LT researchers. For instance, conferences such as Language Testing Research Colloquium and JLTA and JALT Annual Conferences can offer opportunities for researchers and stakeholders to meet and agree on frameworks/guidelines of how to incorporate OS practices into one's résumé for job applications and criteria against which a hiring or promotion committee evaluates applicants. Journals may hold an editorial board meeting or a roundtable to discuss ways to recognize researchers' efforts toward OS (see also Hui et al., 2023, for suggestions to improve promotion systems). Certainly, these reforms are easier said than done, but we believe that they are necessary steps to spread OS among LT researchers.

Lastly, we have noticed that the prevailing dialogue surrounding OS is relevant to LT researchers. United Nations Educational, Scientific and Cultural Organization (2023) states that OS is "for the benefit not only of scientists but also society as a whole." For LT, the end users of research are those who develop, administer, or take tests, including private companies, language teachers, and students. Liu (2023) asks, "Whose open science are we talking about?" refocusing OS in applied linguistics (rather than psychology; p. 443). We ask a similar question: For whom are we practicing OS? This mindset requires every researcher to consider why and for whom they conduct their research. In the Japanese context, such coordinated efforts would help "increase evidence-based, public trust in language testing" (Winke, 2024, p. 2) and enhance language testers' confidence in communicating the theoretical and practical merits of our field to the public. Coordinated efforts are particularly important when the public tends to harbor doubts about the use and value of high-stakes English language tests. Recent events, such as the termination of a plan to use commercial four-skill for university entrance examinations

in Japan and the introduction of a speaking test for senior high school admissions in Tokyo, have aroused heated debate among stakeholders (see Allen & Koizumi, 2023; Saito et al., 2022). Challenges persist, but researchers and test institutions can only gain the trust of the public and maximize OS potential through continuous efforts and sincere attitudes. This approach aims for better “quality, clarity, and equity” (Winke, 2024, p. 1) toward empirically examining test interpretation and use and communicating results catering to the needs of the target test stakeholders (see Chalhoub-Deville & O’Sullivan, 2020). We wholeheartedly endorse Winke’s drive to promote OS in LT.

Author contributions

Rie Koizumi: Conceptualization; Funding acquisition; Project administration; Writing – original draft; Writing – review & editing.

Ryo Maie: Conceptualization; Writing – original draft; Writing – review & editing.

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Supplemental material

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