

Modern Meta-Analysis in Instructed Second Language Acquisition Research

Reza Norouzian
Email: rnorouzian@gmail.com

Introduction

The publication of the now-classic [Norris and Ortega \(2000\)](#) heralded the advent of systematic research reviews in the field of Instructed Second Language Acquisition (ISLA) research. However, one of the main criticisms raised in this oft-cited meta-analysis was that “effects of instruction may only be short-lived at best” (p. 488). To overcome the lack of evidence on long-term effects, many instructed L2 acquisition researchers have tended to extend post-testing their study groups beyond the immediate post-experimental observations ([Norouzian, 2020](#)). Naturally, such an extension of post-testing occasions for multiple study groups leads to a complex form of research design known as mixed repeated measures with the occasional use of multiple outcomes and multiple control groups (MRM-MOMC) in asymmetric ways.

Modern Meta-Analysis in Instructed Second Language Acquisition Research (MMISLAR) is a multi-phase project intended to provide a unified framework for the meta-analysis of common, yet complex MRM-MOMC research designs employed in the domain of ISLA research. Achieving such a unified framework is critical to the validity of meta-analytic studies carried out in the area of ISLA research. Because without such a framework, systematic research reviews on the same literature could lead to inconsistent or even misleading results mainly due to the disparate meta-analytic strategies and decisions adopted by various ISLA researchers.

In what follows, the *Phases of The Project* section will describe the required steps to achieving the unified approach promoted in the present summary. Presented next are some of the major theoretical as well as practical benefits of MMISLAR for ISLA research.

Phases of the project

- 1- Finding a standardized mean difference effect size that simultaneously measures change over time and across groups (d interaction or “*dint*” for short).
- 2- Studying the statistical properties of *dint* so that this variant of effect size can be used as the basis of modeling meta-analytic data in ISLA research.
- 3- Developing a study coding framework that automates the calculation *dints* for all complex studies in the literature including any number of posttests, outcomes, control groups, and treatment groups.
- 4- Developing a modeling framework to address the problem of “*effect size dependency*” arising from multiple treated groups being measured on multiple occasions and outcomes, as well as compared to one or more common control groups.

- 5- Developing a comprehensive software package to enable practical implementation of modern meta-analysis in ISLA research for a wide audience of users.
- 6- Drafting separate manuscripts on the applications of MMISLA in ISLA research.
- 7- Submitting the manuscripts for the publication to premier L2 journals.

Major benefits of the project

- 1- Reducing ISLA researchers' work to only an initial data collection.
- 2- Directly answering the main questions in ISLA research consistent with the frequently employed MRM-MOMC designs in the domain of ISLA.
- 3- Unifying disparate meta-analytic practices currently used to meta-analyze subdomains of ISLA research.
- 4- Reducing human involvement so to minimize error in the process of meta-analyzing complex MRM-MOMC designs used in ISLA research.
- 5- Ease of use by directly meta-analyzing the raw EXCEL sheet.
- 6- Availability of a free software package for the ISLA community.

References

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- Norris, J. M., & Ortega, L. (2000). Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning*, 50(3), 417-528.