# The Basis of Empirical Knowledge

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The Norris and Ortega (2000) study, a meta-analysis of pedagogical techniques, makes the reader think more deeply about experimental comparability. The study is as much about the basis of knowledge and inquiry as it is about the merits of a particular pedagogical technique. This meta-analytic feature, rather than the comparison of techniques, is of primary importance in this brief commentary.

The criteria for inclusion of studies in this meta-analysis, coupled with Norris and Ortega's (2000) admission of potential bias were interesting. Studies were excluded on the basis of insignificant results and lack of peer review. Certainly, the peer review process is important in order to maintain a certain standard in journals, but potentially valuable information was lost by excluding many studies. Of course, a meta-analysis cannot be all-inclusive. However, "one focus of the synthesis was to summarize and evaluate the range of research practices applied within the domain" (Norris & Ortega, 2000, p. 434). At the very least, these exclusions speak to opportunities for future enquiry. More studies can be reviewed perhaps to some revealing result.

What other analytic techniques might be applied to the papers excluded from the meta-analysis that could reveal something useful, either about learning or about research methods used to study learning? Perhaps a descriptive approach would be appropriate. Furthermore, there is clearly a potential to investigate studies that have focused on phonology and lexis, also excluded from the meta-analysis. Each of these poses its own challenge to language acquisition.

Norris and Ortega (2000) cited a lack of clear participant proficiency information in many studies. This was an appropriate comment. In fact, the definition of standard proficiency levels may be a problem for the entire field of second language acquisition. This suggests that consistent reporting conventions are requisite should the field wish to benefit from meta-analyses.

Norris and Ortega (2000) also observed that moderating variables, namely discrete linguistic structures such as articles and prepositional phrases, have not been operationalized consistently. Linguistic structure may be a powerful moderating variable when assessing instructional effectiveness. This is yet another area for future enquiry.

Lastly, Norris and Ortega (2000) demonstrated a firm understanding of statistical relationships. It behooves researchers to have an equally firm grasp of this if they wish to claim generalizability for their findings. When preparing research reports, it might be helpful to report statistical data that also facilitates the study's inclusion into a meta-analysis. It entails thinking about the assumptions behind sample size and the reporting of inferential statistics as well as tests of statistical significance. This is perhaps more commonplace in recent practice, but not necessarily the case two decades ago.

As Norris and Ortega (2000) stated, the study of instructional techniques is at an embryonic stage. There is clearly much theoretical ground to cover, but equally as much to be agreed upon at the methodological level for the sake of comparability between studies.

## REFERENCES

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

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