Plonsky, L., & Gass, S. (2011). Quantitative Research Methods, Study Quality, and Outcomes: The Case of Interaction Research. Language Learning, 61(2), 325–366.

Discussion

Strengths and Weaknesses

S -- 80% of experimental studies used delayed posttests.
S -- 64% of studies reported reliability estimates.
W -- 21% of quasi-experimental studies did not pretest.
W -- 32% of laboratory studies used random assignments.
W -- Power in interactionist research is 0.56 (recommended minimum is 0.80).
W -- Power analyses are rare, indicating small samples and possible ignorance about statistical power.
W -- Inconsistencies in reporting practices such as exact and relative *p*-values, means without standard deviations, and *t* tests or ANOVAs without *t* or *f* values, which means readers cannot extract an effect size.

Study Quality and Outcomes

Experimental = Observational
Classroom = Laboratory

Two features that predict greater effect sizes: Delayed posttests and Random assignment

Changes Over Time

Design
- Increases in pretests, delayed posttests, the use of random group assignment, and comparison groups

Reporting
- Increase in the percentage of reports that include means, standard deviations, *t* values, and exact *p*-values, all of which can be used to calculate an effect size

Outcomes
- decrease in effect sizes over time

Directions for Future Research

Researchers must report . . .
- exact *p*-values to accompany the results of all statistical tests
- standard deviations along with all means
- confidence intervals
- effect sizes

Coding (p. 336)

All features coded as binary (except effect size)

174 articles were coded with 97.9% average inter-rater reliability.

Findings

Data

Included as data were ...
quantitative studies of the **interaction hypothesis**
- found in one of fourteen prominent SLA journals (or two edited volumes)
- from 1980 to summer 2009

Four Types of studies emerged.
1) Observational in classrooms
2) Observational in laboratories
3) Quasi-experimental in classrooms
4) Quasi-experimental in laboratories

Impetuous for the Research (p. 328)

- The presence of weaknesses in SLA research (Byrnes, 2008)
  - A possible relationship between different methodological reporting practices and study outcomes (Prentice & Miller, 1992; Lipsey & Wilson, 1993)
  - Reviews of individual applied linguistics journals have found a lack of perceived importance of rigorous methods (Egbert, 2007; Magnan, 2007; Smith & Lafford, 2009)

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- Research Question #1: Tables 4-5
- Research Question #2: Table 6
- Research Question #3: Table 7
- Research Question #4: Figures 1-4, Table 10

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Interaction Hypothesis

"L2 interaction research holds that **negotiations resulting from the communicative pressure that is present during L2 interaction promote comprehension** as well as linguistic development" (p. 328).

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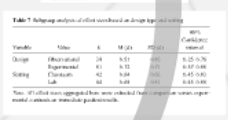
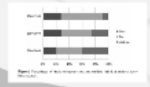
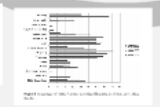
Question #3: Table 7



Question #4: Figures 1-4, Table





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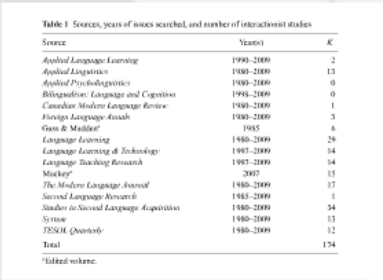

Table 1 Sources, years of issues searched, and number of interactionist studies

Source	Year(s)	*K*
Applied Language Learning	1990–2009	2
Applied Linguistics	1980–2009	13
Applied Psycholinguistics	1980–2009	0
Bilingualism: Language and Cognition	1998–2009	0
Canadian Modern Language Review	1980–2009	1
Foreign Language Annals	1980–2009	3
Guts & Muffins[a]	1985	6
Language Learning	1980–2009	29
Language Learning & Technology	1997–2009	14
Language Teaching Research	1997–2009	14
Modern[a]	2007	15
The Modern Language Journal	1980–2009	17
Second Language Research	1985–2009	1
Studies in Second Language Acquisition	1980–2009	34
System	1980–2009	13
TESOL Quarterly	1980–2009	12
Total		174

[a]Edited volume.

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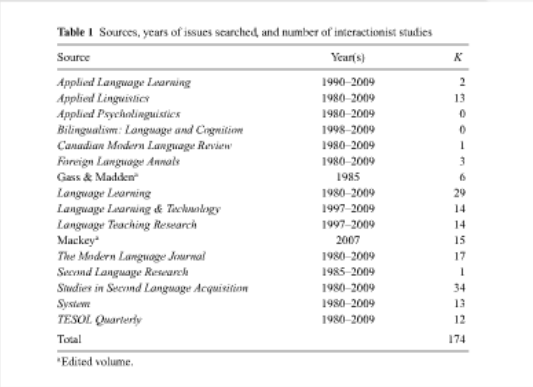

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