Department of Communication Disorders

At Florida State University

Influence of Phonological Awareness & Spelling Skills in Acquiring Phonetic Transcription Abilities

Shannon Hall-Mills, M.S., Michelle Bourgeois, Ph.D., and Rachel Saffo, M.S.
The Florida State University

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INTRODUCTION

Statement of the Problem:

- Undergraduate students typically demonstrate a broad range of phonetic transcription skills.
- Early identification of students who are at-risk for difficulty acquiring transcription skills would increase the opportunities for enrichment & successful acquisition of those skills.

Phonetic Transcription:

- Entails describing and classifying speech sounds as they relate to a standard set of sounds (Nicolosi, Harryman, & Kresheck, 1996), and requires the skills typically used to define phonological awareness: explicit knowledge of the sound structure of the language (phonology) and the ability to manipulate individual phonemes.

Phonological Awareness (PA) & Spelling (SPL):

- Adequate phonological awareness and spelling skills may play a role in the development of phonetic transcription skills.
- A previous study located 10 significant correlations between phonological awareness and phonetic transcription tasks (Moran & Fitch, 2001). The students who exhibited the most difficulty with phonetic transcription also performed most poorly on the *phoneme switching* and *phoneme reversal* tasks.

Purpose & Research Questions:

- The purpose of the present study was to investigate the relationships between PA, SPL, and phonetic transcription skills in university students.
- Research questions:

1. Are there relationships between PA, SPL, and phonetic transcription skills?
2. Do measures of PA and SPL predict phonetic transcription ability over and above age, first language, and linguistic competence, and if so, to what extent?

STIMULI

- 3 PA & 2 SPL screening tasks were prerecorded using a high quality digital audio recorder and presented via the house audio system provided in the technology enhanced classroom.
- Administration of the screenings tasks = 30 minutes
- Transcription lab quiz grades monitored throughout the semester.

PARTICIPANTS

- 65 college students
- Age: Mean = 22;2 (266 months), SD = 3;4 (41.1 months)
- Gender = 2 male; 63 female
- Enrolled in core undergraduate phonetics course
- Minimal to no previous experience with phonetic transcription

PROCEDURES

Phonological Awareness Tasks: (Adapt. from Moran & Fitch, 2001)

- Phoneme Reversal (PR): 20, two-word phrases in which the initial phoneme in each word has been transposed. Indicate the intended utterance. (e.g., "had bear" = "bad hair")
- Phoneme Switching (PS): 20 words; sequence the sounds in each word from the last sound to the first sound to create another word. (e.g., "sick" = "kiss")
- Phoneme Counting (PC): 20 multisyllabic words; number of phonemes ranged from four to ten. (count the phonemes in the word "leaning").

Spelling Tasks: (Researcher-made spelling tasks)

- Real word spelling task (RWS): Spell a list of 20 real words.
- Nonword spelling task (NWS): Spell a list of 20 word-like non-words.

Background Questionnaire:

- DOB, first language (L1)/linguistic competence (LC, e.g., bilingual, monolingual), Passed hearing & speech screening within past 6 months, No reported history of learning disability, speech, language, cognitive, hearing, or visual impairment, and/or limited oral or written English proficiency.

RESULTS

Table 1: Range, Mean, & Standard Deviation of Scores on PA & SPL Screening Tasks & Transcription Quiz Total

Task	*Range*	*Mean (SD)*
Phoneme Reversal	0-19	7.30 (5.4)
Phoneme Switching	1-19	12.72 (4.6)
Phoneme Counting	1-15	7.52 (3.1)
Real Word Spelling	3-18	10.00 (3.2)
Nonword Spelling	2-11	6.71 (2.2)
Quiz total for 10 quizzes	74-95.80	87.80 (5.1)

Note: Screening tasks max =20 points; Quiz total max = 100 points

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Table 2: Correlations of Predictors with Quiz Total

Predictor	*Zero-order*	*Partial*	*Part*
Age	.22*	.31*	.25*
PR	.50**	.32*	.25*
PS	.23*	-.22	-.20
PC	.20	-.10	-.10
RWS	.50**	.33*	.30*
NWS	.30*	.12	.10
L1	-.11	-.30	-.21
LC	.12	-.01	-.01

*p <.05, **p <.01
Partial = controlling for effects of all other predictors from the predictor and outcome
Part = controlling for effects of all other predictors in the equation from the predictor

RESULTS

Table 3: Summary of Hierarchical Regression Analysis

Predictor	*B*	*SE B*	*β*	*t*	*p*
Step 1					
Age	.03	.02	.24	1.81	.08
L1	- 4.10	2.20	- .27	-2.0	.06
LC	2.13	1.73	.18	1.30	.22
Step 2					
Age	.03	.01	.27	2.43	. 02*
L1	3.90	1.94	-.26	-2.01	.05
LC	- .10	1.60	-.10	-.06	.95
PR	.40	.14	.40	2.50	.02*
PS	- .30	.20	-.25	-2.0	.10
PC	- .14	.20	-.10	-.80	.44
RWS	62	.24	.40	2.60	.01*
NWS	.30	.31	.13	.94	.35

Note. R^2= .10 for Step 1; Δ R^2= .32 for Step 2; *(p<.05); f^2=0.55 (large effect)

DISCUSSION

1. Are there relationships between phonological awareness, spelling, and phonetic transcription skills?

✓Yes, phonological awareness and spelling skills are partly but not entirely related to phonetic transcription ability and they moderately correlated with each other.

✓Predictors with s**trongest partial correlations** with transcription skill? PR (r=.32, p<.05), RWS (r=.33, p<.05), & Age (r=.31, p<.05).

2. Do measures of PA and SPL predict phonetic transcription ability over and above age, first language, and linguistic competence?

✓Step 1 (age, L1, LC) did not together account for significant amount of variance in transcription ability, R^2=.10, F(3,61)=2.316, p=.09.

✓Measures of PA and SPL predicted a significant additional 32% of the variance in phonetic transcription ability over and above age, L1, & LC. R^2 change = .32, F(5, 56) = 6.054, p<.001.

Implications:

✓Useful screening measures are available for early identification of college students at risk for difficulty acquiring phonetic transcription abilities.

✓The phoneme reversal and real word spelling tasks were the screening measures that best predicted transcription skill.

✓Phonetics instructors may design intervention for students who are identified as being "at-risk" based on their performance on the screening measures.

✓Further examinations are warranted to determine how best to intervene for the struggling students.