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Trends in Communicative Self-Efficacy: A Comparative Analysis

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Social science research increasingly emphasizes the investigation of the self (Schunk & Pajares, 2005; see also Graham & Weiner, 1996); a wide and consistent body of findings indicate that, across domains, people's efficacy beliefs (rather than actual capabilities) are important predictors of behaviors (Schunk & Pajares, 2005). Case in point, McCroskey and associates argued that own perceptions of communicative competence (rather than actual competence) underlie numerous salient decisions people make with respect to communication (McCroskey & McCroskey, 1988; McCroskey, 1997). Additionally, own perceptions of competence influence the choice of goals people set up in achievement settings (Friedman et al., 2009). More precisely, the way a student who is enrolled in a communication course selects between mastery and performance goals and chooses between approach and avoidance valences is grounded on her/his perception of own communicative skills (see Friedman et al., 2009 for more details regarding the interplay between competence and achievement goals choice). Moreover, own perceptions of (domain-specific) capabilities are key determinants of people's success or failure in given academic settings (see Schunk & Pajares, 2005 and references therein). In particular, higher levels of perceived communication competence are asso-

ciated with higher GPA scores and elevated persistence to remain in college (Hawken, Duran, & Kelly, 1991), whereas lack of confidence in one's own abilities to talk to strangers and acquaintances has been linked to inadequate communication with teachers (Rosenfeld, Grant, & McCroskey, 1995), unproductive learning experiences, and suboptimal academic achievement (Myers & Bryant, 2002; Myers, Martin, & Mottet, 2002). In this light, it is not surprising that communication courses that are effective in raising students' SPCC levels also facilitate a host of other desirable educational outcomes (e.g., a drop in attrition rates; Rubin, Rubin, & Jordan, 1997).

The structure of this article is as follows: First, it is argued that self-perceptions of communication competence, as gauged by the SPCC instrument (McCroskey & McCroskey, 1988), provide valid measures of communicative self-efficacy in specific settings (e.g., school-, work-, social-related contexts, etc.). Drawing from motivation-achievement and communication research literature, the pivotal role that self-efficacy beliefs play in student learning is then discussed. Following, the malleability of self-efficacy beliefs is overviewed, the research questions of the study are introduced, and the method used to draw inferences from data is presented. Subsequently, the results of the study are discussed and empirical evidence for answering the research questions is offered. Finally, the implications of the findings are analyzed in the discussion section.

MAJOR CONTRIBUTIONS OF THE STUDY

This study extends prior research in important ways. At the conceptual level, it makes a compelling case that SPCC provides valid estimates of communicative self-efficacy beliefs. Studying perceived communicative competence through the self-efficacy lens reveals that self-perceptions of communication competence are very salient and should not be regarded as merely imperfect ways to assess actual communication competence. More to the point, this research underlines the pivotal role that (communicative) self-efficacy beliefs play in school settings. Additionally, this paper demonstrates that self efficacy beliefs pertaining to communication change over time. Further, the research shows that the magnitude of these changes is directly related to the context of communication and attuned to the scope of classroom instruction. Finally, integrating relevant findings from the self-efficacy literature, this study proposes several practical strategies to enhance the communicative self-efficacy beliefs of students enrolled in core communication classes.

THEORETICAL PERSPECTIVE

SPCC: A Measure of Communicative Self-efficacy

Bandura (1997) posits that “perceived self-efficacy refers to beliefs in one’s capability to organize and execute the courses of action required to produce given attainments” (p. 3). Grounded on Bandura’s perspective, this research defines communicative self-efficacy as

one's beliefs in her/his own capability to communicate effectively in given encounters. Consistent with Bandura (1997), the conceptualization of communicative self-efficacy beliefs include not only "the exercise of control over action" (p. 36) (e.g., Can I bring myself to give a public speech?) but also "the self-regulation of thought processes, motivation, and physiological states" (p. 36) that are needed for effective communication in a specific situation. From the onset, it is important to note that when assessing communicative self-efficacy one does not attempt to gauge people's actual communication skills. On the contrary, one measures the confidence individuals have that they can successfully employ whatever skills they possess to communicate effectively across different communication settings. Therefore, the concept of communicative self-efficacy is relevant for all levels of communication skills.

An important feature of valid self-efficacy scales is that they target exclusively respondents' beliefs in their ability (Bandura, 1997). The SPCC instrument meets this requirement for it asks participants to indicate how competent they believe they are (McCroskey & McCroskey, 1988) to communicate in various situations. Additionally, because items of the SPCC scale require respondents to make judgments of own communicative capability (as opposed to judgments of self-worth, evaluations of the expected outcome of a communication encounter, or statements of future communicative intentions), the instrument meets the content validity criteria specified by Bandura (2006).

Because people's beliefs in their own capabilities differ across various domains of functioning (Bandura, 2006), general (i.e., decontextualized) measures of self-

efficacy cannot provide meaningful information about a particular behavior (see Bandura, 1997 for a detailed discussion). Thus, to make valid inferences regarding self-efficacy one needs to employ specific measures (Bandura, 1997; 2006; Schunk & Pajares, 2005). This argument is further supported by findings indicating that people's self-efficacy beliefs are not only multidimensional but also different in their level, generality, and strength (Bandura, 1997; 2006; Schunk & Pajares, 2005). In other words, some individuals believe they can be only somewhat effective in their communication and only in specific settings, whereas others are confident they can communicate effectively across communication encounters, including the most demanding ones. To capture this variability, valid measures of self-efficacy need to be specific and present respondents with a wide range of (communication) tasks that illustrate various levels of challenge (Bandura, 1997, 2006). SPCC meets this requirement, as it prompts respondents to record how competent they believe they are to communicate effectively in 12 different situations. These situations (i.e., communication encounters) are the byproduct of crossing four communication contexts (namely public speaking (PS), large meeting, (LM), small group (SG), and dyadic (DY)) with three types of interlocutors (friend, acquaintance, and stranger). Taking into account that people are more comfortable to communicate in some contexts than in others (e.g., dyadic vs. public speaking) and with a particular type of interlocutor (e.g., friend) (McCroskey & McCroskey, 1988; Rosenfeld et al., 1995), it is clear that the 12 communication encounters gauge competence beliefs in communication situations having various degrees of difficulty. Therefore, SPCC satisfies

another stringent requirement of valid self-efficacy scales, namely to offer different levels of task demand (Bandura, 2006).

People's self-efficacy beliefs differ across domains of functioning (Bandura, 2006). As a consequence, self-efficacy can be appropriately assessed only at two levels of generality, namely specific or intermediate. Communicative self-efficacy, as gauged by SPCC, is measured at an intermediate level of generality, for the items span several (related) classes of communication encounters (e.g., dyadic, public speaking, etc.) under several common classes of conditions (i.e., type of interlocutor). This is a very desirable feature of the instrument for employing self-efficacy items that operate at the intermediate level of generality enhances their predictive power (Bandura, 1997).

Valid self-efficacy scales need to be sensitive, reliable, and to differentiate among people who hold similar but not identical beliefs (Bandura, 2006). The SPCC measure meets these requirements for its items record answers on a 0-100 scale that is sufficiently sensitive and broad to accommodate variations in self-efficacy levels. In addition, the measure has demonstrated good reliability in numerous studies (Donovan & MacIntyre, 2004; MacIntyre, 1994; MacIntyre, Babin, & Clement, 1999; McCroskey & McCroskey, 1988; Richmond, McCroskey, & McCroskey, 1989).

Additional information about communicative self-efficacy beliefs is revealed when the "horizontal connections" (Wilson & Sabee, 2003, p. 6) linking SPCC to its antecedents and consequences are overviewed (see also Bandura, 2006, for a similar point of view). Findings from a diverse body of studies analyzing relationships

between SPCC and a host of covariates (i.e., Bakx, Van der Sanden, Sijtsma, Croon, & Vermetten, 2006; MacIntyre, 1994; MacIntyre et al., 1999; Miller, 1987; Richmond et al., 1989), indicate that people who are sociable, regard themselves highly, and are argumentative, have higher levels of communicative self-efficacy beliefs than people lower in sociability, self-esteem, and argumentativeness. On the contrary, people who do not internalize societal values or norms and distrust the communicative process (i.e., anomics), feel estranged from other people and the society (i.e., are alienated), are highly introverted or neurotic, exhibit low levels of SPCC. In addition, perceptions of own communicative competence have positive relationships with willingness to communicate, constructivist learning conceptions, and engagement in expert-driven or training-related learning opportunities.

Importance of Students' Self-efficacy Beliefs for Learning and Teaching

Research conducted across different academic domains reveals that self-efficacy beliefs are important predictors of students' academic performance and learning (Bandura, 1997; 2006; Bong & Skaalvik, 2003; Schunk & Pajares, 2005) for self-efficacy mediates the effect of past performance on subsequent achievement and involvement in academic tasks (Schunk, Pintrich, & Meece, 2008; Schunk & Pajares, 2005). Thus, it is not surprising that competence beliefs and expectancies of future success predict achievement in different subject areas even after previous performance has been taken into account (Bandura, 1997; Schunk & Pajares, 2005).

Furthermore, self-efficacy beliefs are salient for they mediate relationships between “affective components” (Pintrich, 2003, p. 670) such as people’s needs and emotions and their behavior. In particular, higher self-perceptions of competence are associated with positive patterns of thought that help create optimal opportunities for skill acquisition (Hullman, Planisek, McNally, & Rubin, 2010; see also Snyder, 1981).

Domain-specific self-efficacy beliefs influence the way students choose an activity (Rubin, Martin, Bruning & Powers, 1993), value its outcome(s) (Bong, 2001; Eccles & Wigfield, 2002), the effort they expend in various academic tasks, and the extent to which they persist in learning when facing difficulties (Bandura, 1997; 2006; Bong & Skaalvik, 2003; Eccles & Wigfield, 2002; Pintrich, 2003; Schunk et al., 2008). Moreover, self-efficacy beliefs mediate the influence that external events (e.g., feedback from teachers and peers) exert on students’ intrinsic motivation (see Reeve, Deci, & Ryan, 2004; Ryan & Deci, 2009 and references therein). In particular, students’ intrinsic motivation to engage in meaningful learning in a given academic field can be enhanced by increasing their self-efficacy beliefs related to the given area (Reeve et al., 2004; Schunk et al., 2008).

Dynamic Nature of Self-efficacy Beliefs and Problematic Limitations of Current Research

Perceived self-efficacy is not a fixed ability (Bandura, 1997). On the contrary, self-efficacy beliefs are malleable (Klassen, 2004; Pintrich, 2003) and can be affected by contextual information (Bong & Skaalvik, 2003; Klassen, 2004) and the nature of educational

practices (e.g., the extent to which evaluation of students' performance emphasizes grades and social comparisons vs. learning and personal development) (Harter, Whitesell, & Kowalski, 1992). A comprehensive review of the self-efficacy literature (see Bong & Skaalvik, 2003 and references therein) provides "strong evidence of the dynamic nature of self-efficacy beliefs" (p. 26). Case in point, Spinath and Steinmayr (2008) found significant changes in students' self-perceptions of competence (during a school year) as well as significant inter-individual differences in these patterns of development. Along the same lines, Schunk and Pajares (2005) suggested that vicarious experiences, academic achievement, and persuasive communications contribute to increasing self-efficacy in instructional settings. Changes in self-perceptions of competence are pivotal, for they relate "to general positive affect about school performance" (Harter et al., 1992, p. 802). These findings unequivocally underline the meaningfulness of changes in self-efficacy beliefs and indicate that there are important advantages associated with enhancing students' perceived self-efficacy.

Participation in communication courses and exposure to instruction are expected to enhance students' desire to engage in communication and their ability to do so successfully (Rubin, Graham, & Mignerey, 1990; see also Pearson & Daniels, 1988). Thus, to evaluate students' progress accurate assessments of change are needed (Willett, 1994). However, with respect to studying change in students' SPCC, important shortcomings exist in the communication literature. These problems are overviewed next.

First, existing studies fail to recognize that, if measured appropriately, self-perceptions of communication competence are adequate representations of communicative self-efficacy beliefs. As a result, the current communication literature targeting SPCC is disjoined from the rich self-efficacy research and does not integrate important findings from this field. Thus, research on SPCC provides no systematic investigation of how interactions among self-efficacy beliefs, motivation to enhance communication skills, and expectancy of success in a communication course contribute to divergent patterns of engagement in class activities and/or learning even for students having similar levels of communication skills. This limitation is especially problematic considering that newly developed instructional communication theoretical frameworks have self-efficacy at their heart (e.g., Instructional beliefs model; Weber, Martin, & Myers, 2011).

Second, assessments of change in own perceptions of communication competence are few and far between in the communication literature. Moreover, even the few existing accounts do not assess change appropriately and fail to account for measurement errors. More specifically, they use unstandardized instruments (e.g., Ellis, 1995; Ford & Wolvin, 1992, 1993; Kramer & Hinton, 1996), lack enough information to gauge change accurately for they employ only two data points (e.g., Ford & Wolvin, 1992, 1993; Kramer & Hinton, 1996; Rubin et al., 1997), and utilize statistical techniques that fail to take into account that people's change trajectories are heterogeneous (e.g., Bakx et al., 2006; Dwyer & Fus, 2002; Ellis, 1995; Ford & Wolvin, 1992, 1993; Kramer & Hinton, 1996; Rubin et al., 1997). Findings from these

studies have limited generalization for they employ suboptimal procedures to account for missing data (e.g., data purging, Ford & Wolvin, 1992, 1993; Kramer & Hinton, 1996; Rubin et al., 1997), fail to describe the extent and treatment of data missingness (e.g., Dwyer & Fus, 2002; Ellis, 1995), or use information from samples that are significantly different from the general population (e.g., 91% of the participants in the Bakx et al., 2006 study were females).

To assess average trends and reveal interindividual differences in change of communicative self-efficacy beliefs, this study employs a longitudinal nonexperimental design (Campbell & Stanley, 1966). This type of design is appropriate for studying change over time (Heck & Hallinger, 2009), and can be successfully used in settings in which random assignment of participants is unfeasible and/or unethical. Considering that deleterious effects of measurement errors are most prevalent in designs using only two waves of measurement (Anstey & Hofer, 2004; see also Bryk & Raudenbush, 1987; Nesselrode, Stigler, & Baltes, 1980), this work uses a true longitudinal design consisting of three waves of data.

RESEARCH QUESTIONS

To achieve the goals of this study, the following research questions (RQs) are proposed.

- RQ 1*: Do communicative self-efficacy beliefs change across time during a semester in which students are enrolled in a basic communication course?

- RQ 2*: Do patterns of change in communicative self-efficacy beliefs differ across communication contexts? If so, what are the implications for evaluating the effectiveness of teaching and learning in a basic communication course?

METHOD

Participants

Data for this study were collected from a sample of students enrolled in a basic communication course (focusing on public speaking) at a university in the continental U. S. A number of 705 students participated in the study (59.48% response rate). All participants were undergraduate students, 319 (45.18%) were females, and 523 (74.08%) were first-year students. The characteristics of the sample are summarized in Table 1.

Procedure

After the research was reviewed and approved by the university's Institutional Review Board, all students who were enrolled in the course were invited to participate. The questionnaire was administered in the first, eighth, and 15th week of the semester. The timing for data collection was chosen so that students performed no public speeches prior to the first administration, delivered at least one before the second measurement, and had an additional public speech prior to the last measurement wave. All instructors who taught the course in that semester were contacted, informed, and asked for voluntary cooperation to administer the questionnaires

during class time. Researchers did not interact at all with participants.

Measure

The instrument used to collect data for this study (i.e., SPCC; McCroskey & McCroskey, 1988) consists of 12 items gauging students' perceptions of own ability to communicate effectively in different situations. Individual items, subscale (i.e., context) scores, and total score were recorded/calculated on a scale ranging from 0 (i.e., 'completely incompetent') to 100 (i.e., 'completely competent'). This instrument has been repeatedly found to exhibit good reliability (e.g., Donovan & MacIntyre, 2004; MacIntyre, 1994; MacIntyre et al., 1999; McCroskey & McCroskey, 1988; Richmond et al., 1989).

Data Analytic Technique

To answer the two research questions, latent growth modeling (LGM) was employed. LGM is a flexible data analytic system for longitudinal designs (Ram & Grimm, 2007; Willett, 2004), which subsumes traditional repeated measures techniques (e.g., ANOVA, MANOVA, paired *t*-tests) as particular cases (Voelkle, 2007). LGM has important advantages that recommend it over these traditional techniques. In particular, LGM is more powerful, removes "measurement error from theory-testing procedures" (Fornell & Larcker, 1981, p. 385), and is able to accommodate any covariance structure of the error terms (Ployhart & Hakel, 1998; Willett, 2004). Unlike the afore-mentioned classical techniques, LGM does not need to impose a restrictive structure on

the error terms (i.e., LGM does not assume independent and homoscedastic errors; Willett, 2004). On the contrary, by employing LGM, a researcher can “compare the effects of many reasonable error structures and determine the best analytically” (Willett, 2004, p. 55). This feature of the procedure was particularly instrumental in the current research (see the Results section). More details about LGM and about the advantages associated with using it in communication research can be found in Henry and Slater (2008) and Hodis, Bardhan, and Hodis (2010).

Several fit indices are employed in this study to assess the appropriateness of various growth models: comparative fit index (CFI) (Bentler, 1990), Tucker-Lewis index (TLI) (Tucker & Lewis, 1973), and root-mean-square-error-of approximation (RMSEA) (Steiger, 1990). Following Hu and Bentler (1999), values of .95 and higher for CFI and TLI were used as benchmarks for good fit. For RMSEA, values below .05 were taken to indicate a very good fit, values between .05 and .10 to denote a moderate one, and values exceeding .10 to indicate a poor fit (Bollen & Curran, 2006).

RESULTS

An examination of Table 1 reveals that all context subscales as well as the overall SPCC scale have excellent reliabilities (i.e., exceeding 0.80) and have small absolute values of skewness and kurtosis. Because violations of multivariate normality (MVN) are suspected only when absolute values of univariate skewness and/or kurtosis are greater than 2.00 and, respectively,

Table 1
Estimates of Observed Sample Statistics for Focal Variables
Using Full Information Maximum Likelihood

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.LM1	369.31	.52	.50	.79	.41	.47	.74	.41	.46	.65	.33	.44	.90	.47	.51
2.LM2	179.54	328.41	.62	.45	.80	.58	.40	.78	.55	.32	.69	.52	.48	.92	.62
3.LM3	167.36	196.59	306.07	.50	.54	.82	.46	.52	.81	.38	.39	.71	.52	.58	.92
4.PS1	292.71	155.99	168.43	370.31	.42	.50	.76	.41	.46	.68	.31	.40	.91	.45	.51
5.PS2	137.20	253.56	164.67	141.30	303.41	.62	.33	.81	.52	.29	.65	.46	.41	.91	.59
6.PS3	161.07	187.82	254.41	172.22	190.11	315.09	.41	.51	.84	.39	.41	.73	.50	.59	.93
7.SG1	243.75	123.78	138.24	249.54	98.60	123.10	291.07	.40	.45	.78	.34	.40	.91	.41	.47
8.SG2	124.87	225.10	144.67	125.12	224.45	143.46	107.48	254.88	.50	.33	.74	.49	.43	.92	.55
9.SG3	148.84	164.77	236.33	147.46	149.78	248.23	126.60	134.26	278.50	.37	.42	.78	.49	.56	.94
10.DY1	202.69	94.26	108.59	212.25	82.81	112.27	217.09	85.46	99.64	263.69	.34	.41	.86	.35	.42
11.DY2	88.40	173.35	96.19	84.35	158.57	100.83	80.57	166.15	97.93	76.20	196.65	.50	.37	.84	.47
12.DY3	125.54	138.15	185.07	114.11	118.97	190.65	101.11	115.32	193.77	99.10	104.65	219.51	.46	.55	.87
13.TO1	277.11	138.39	145.65	281.20	114.98	142.17	250.36	110.73	130.64	223.93	82.38	109.97	258.15	.47	.54
14.TO2	132.50	245.60	150.53	126.69	235.00	155.56	102.61	217.64	136.69	84.68	174.18	119.27	111.62	218.11	.62
15.TO3	150.70	171.83	245.47	150.55	155.88	252.10	122.26	134.43	239.21	104.90	99.90	197.25	132.10	140.51	233.51
Mean	69.37	72.74	75.83	71.41	74.88	76.95	77.45	79.21	80.13	81.54	83.81	83.31	74.94	77.66	79.05
Skew	-0.72	-0.90	-0.87	-0.85	-1.07	-0.99	-1.48	-1.46	-1.22	-1.80	-2.06	-1.66	-1.18	-1.22	-1.01
Kurtosis	0.52	1.03	0.85	0.68	1.63	1.17	3.57	3.74	1.91	4.91	7.57	4.33	2.30	2.78	1.34
Reliability	0.88	0.90	0.89	0.90	0.90	0.91	0.88	0.88	0.90	0.86	0.86	0.85	0.90	0.90	0.91

Note. Variances are denoted in bold, covariances are included in the lower triangular part, and correlations are in the upper triangular part of the table. LM1-3 = average scores for the LM context at times 1-3; PS1-3 = average scores for the PS context at times 1-3; SG1-3 = average scores for the SG context at times 1-3; DY1-3 = average scores for the DY context at times 1-3; TO1-3 = average scores for the entire scale at times 1-3; Reliabilities reported in this table are the α coefficient of internal consistency (adjusted using Spearman-Brown formula for the length of scale).

7.00 (Curran, West, & Finch, 1996), it appears that no problematic violations of MVN occurred in this data. As an additional precaution, this study used maximum-likelihood (ML) estimation, a procedure that is robust to small and medium violations of MVN (Fan & Wang, 1998). To avoid losing any information, full information maximum likelihood (FIML, Arbuckle, 1996) was employed to estimate the model parameters. This estimation technique uses all available data and “is one of the preferred methods to allow generalizations of results to the population” (Benner & Graham, 2009, p. 363). This feature of FIML is very important, as it allows one to include in the analysis all the information provided by all respondents. Therefore, with the exception of one participant who did not respond to any item and could not be included in the analyses, the study used data from all students (bringing the sample size to $N = 705$). All analyses in this research were conducted with Mplus version 5.2 (Muthen & Muthen, 1998-2007).

Examination of RQ1: Do Communicative Self-efficacy Beliefs Change across Time?

To examine RQ1 composite (i.e., subscale) scores were created for each context, by averaging each student’s answers to the three questions related to communicating in LM, PS, SG, and respectively, DY contexts. Separate linear LGM models were fit for each of these composite scores, as well as for the overall (i.e., total) (TO) score. The versatility of the technique in modelling the structure of the error terms was essential for appropriately capturing different configurations characterizing these contexts. Specifically, the LGM model

that fit best LM scores had heteroscedastic and uncorrelated errors (thus one degree of freedom for the χ^2 test), whereas for the other contexts and TO score the models of best fit had homoscedastic error structure and correlated errors for the first two waves of measurement (thus two degrees of freedom for the χ^2 test). All five models had an excellent fit to the data, thus confirming that change in self-efficacy beliefs was linear in each context (and also in the TO score). Specifically, for the LM context $\chi^2(1, N = 705) = 0.03; p = .87$; CFI=1.00; TLI=1.00; RMSEA=.00.

For the PS context $\chi^2(2, N = 705) = 0.91; p = .63$; CFI=1.00; TLI=1.00; RMSEA=.00.

For the SG context $\chi^2(2, N = 705) = 0.49; p = .78$; CFI=1.00; TLI=1.00; RMSEA=.00.

For the DY context $\chi^2(2, N = 705) = 6.40; p = .04$; CFI=0.98; TLI=0.97; RMSEA=.06.

For the TO score $\chi^2(2, N = 705) = 1.29; p = .53$; CFI=1.00; TLI=1.00; RMSEA=.00.

These results offer a clear affirmative answer to RQ1: Regardless of the communication context, communicative self-efficacy beliefs increased linearly for students enrolled in a core communication class.

Before tackling RQ2, a brief presentation of the meaning of the parameter estimates that were obtained when fitting a LGM is provided to facilitate the interpretation of the results (see Table 2). This discussion pertains to the LM context but generalizes easily to the other subscales. Results in Table 2 indicate that the average true LM SPCC score at the beginning of the semester was 69.44 points and that a systematic (i.e.,

Table 2
Unstandardized Parameter Estimates
for the Unconditional Growth Models
of Communication Context Facets and Entire Construct

Symbol	Label	Context	Estimate	SE	<i>p</i>
μ_{ci}	Average of true initial status	LM	69.44**	0.72	<.01
		PS	71.72**	0.69	<.01
		SG	77.64**	0.63	<.01
		DY	82.16**	0.58	<.01
		TO	75.25**	0.58	<.01
μ_{cs}	Average of true rate of change	LM	6.43**	0.77	<.01
		PS	5.46**	0.77	<.01
		SG	2.72**	0.75	<.01
		DY	1.61*	0.71	.02
		TO	4.02**	0.63	<.01
σ_{ci}^2	Variance in true initial status	LM	187.27**	25.58	<.01
		PS	268.73**	23.70	<.01
		SG	171.54**	20.27	<.01
		DY	169.35**	17.48	<.01
		TO	180.60**	16.22	<.01
σ_{cs}^2	Variance in rate of change	LM	82.40	46.57	.08
		PS	138.00**	32.90	<.01
		SG	80.87**	30.64	<.01
		DY	110.45**	26.95	<.01
		TO	77.75**	21.90	<.01
σ_{ci_cs}	Covariance (Corr) of true initial status and rate of change	LM	-19.20 (-.16)	26.96	.48
		PS	-96.92** (-.50)	22.42	<.01
		SG	-47.11* (-.40)	19.79	.02
		DY	-76.73** (-.56)	17.68	<.01
		TO	-51.06** (-.43)	14.96	<.01

Note. SE = standard error; Corr = correlation; LM = large meetings; PS = public speaking; SG = small groups; DY = dyadic; TO = overall SPCC; All *p* values are two-tailed.
p* < .05. *p* < .01.

non-random) increase of 6.43 points, on average, was recorded in the given semester. Analyzing the variance estimates (i.e., the third and fourth blocks in Table 2) it becomes apparent that although students were quite heterogeneous with respect to their initial LM SPCC levels (i.e., $\sigma_{ci_LM}^2$ was significant), their scores increased at relatively similar rates across the given semester (i.e., $\sigma_{cs_LM}^2$ was not significant). In addition, no significant relationship was detected between LM SPCC levels at which participants begun the semester and the subsequent increase in their scores (i.e., $\sigma_{ci_cs_LM}$ was not significant).

Examination of RQ2: Comparison of Patterns of Change across Communication Contexts

An analysis of the results of the LGM models in Table 2 indicates that at the beginning of the semester students' communicative self-efficacy beliefs were highest for the DY context, followed by SG, PS, and LM. The rank order of initial mean SPCC levels recorded in this study matches that in the normative sample of the instrument (see McCroskey & McCroskey, 1988; Rosenfeld et al., 1995), with the only exception being that in the latter equal averages were found for PS and LM contexts. A possible explanation for this discrepancy is that values reported in this study are corrected for measurement error (i.e., *true values*) whereas normative means incorporate both true SPCC levels and measurement errors. Students' average increases in SPCC were highest for LM and PS contexts (see second block in Table 2). Although statistically significant improve-

ments were reported for SG and DY contexts, the magnitude of these increases was, on average, only 25%-50% of that for PS and LM. These results suggest an affirmative answer for RQ2.

A two-step procedure was employed to evaluate RQ2. First, an overall test was performed by constraining the true average rates of change in the four contexts to be equal. The test of these constraints was significant $\chi^2(3, N = 705) = 52.83; p < .01$, thus indicating that average increases in SPCC related to LM, PS, SG, and DY contexts were not all equal. To identify precisely the nature of these differences, comparisons involving pairs of contexts were conducted in the second step. In order to illustrate the magnitude of the differences between rates of change, results of statistical tests (whenever significant) were supplemented by the calculation of a latent standardized effect size (i.e., Δ). Based on the procedure described in Hancock, Kuo, and Lawrence (2001), Δ was defined as the ratio of the absolute value of the difference between estimated average rates of change in the given contexts and the standard deviation of their difference scores.

Statistical tests of significance indicated that average rates of change in SPCC for LM and PS contexts were significantly higher than mean changes for DY and SG contexts. On one hand, the average improvement in SPCC related to LM was higher than that in DY: $\chi^2(1, N = 705) = 43.77; p < .01; \Delta = 0.48$. The value of Δ indicates that the average increase in LM SPCC levels was approximately half of a standard deviation steeper than the corresponding increase in DY SPCC. Additionally, mean increase in SPCC related to LM was

higher than that in SG ($\chi^2(1, N = 705) = 28.96; p < .01; \Delta = 0.32$). On the other hand, the average change in SPCC related to the PS context was higher than that pertaining to the DY context ($\chi^2(1, N = 705) = 31.80; p < .01; \Delta = 0.33$) and, respectively, SG ($\chi^2(1, N = 705) = 20.66; p < .01; \Delta = 0.20$). However, no significant differences in average increase were detected between LM and PS contexts ($\chi^2(1, N = 705) = 2.47; p = .12$) and, respectively, between DY and SG ones ($\chi^2(1, N = 705) = 3.55; p = .06$). Taken together, these statistical tests indicate that RQ2 can be answered affirmatively.

Analyzing the results corresponding to TO SPCC (see Table 2), it can be concluded that average values for true initial levels (respectively rates of change) are very close (respectively identical) to the middle of the range formed by the SPCC context means (i.e., 69.44 to 82.16 for initial levels, respectively 1.61 to 6.43 for rates of change). This result indicates that for TO SPCC average initial level and, respectively, rate of change are higher than the corresponding values characterizing some contexts but lower than those of others.

The last three blocks in Table 2 offer valuable information that cannot be unearthed with traditional data analytic methods (e.g., ANOVA, MANOVA). Specifically, findings point that although students begun the semester with a broad range of context-related true SPCC scores, differences were most notable for the PS and LM contexts (values of σ_{ci}^2 were highest for these particular contexts). A somewhat different situation was encountered with respect to the homogeneity/

heterogeneity of students' rates of change. Specifically, apart from the LM context (in which relatively homogeneous increases in SPCC were found across participants), statistically significant variances in rates of change were detected. These results indicate that for SPCC related to PS, SG, and, respectively, DY, the magnitude of improvement differed significantly across students.

DISCUSSION

This study makes a compelling case that self-efficacy beliefs, in general, and communicative self-efficacy beliefs, in particular, are important factors that affect students' class achievement and performance. This research also demonstrates that students' communicative self-efficacy beliefs increased during a semester in which they were enrolled in a basic communication course focusing on public speaking. Additionally, findings indicate that the extent to which self-efficacy beliefs changed was context specific. Moreover, results point that heterogeneous patterns of change characterized PS, SG, and DY contexts (i.e., some students' scores increased more than others'), whereas for the LM context the pattern of evolution was more homogeneous. The implications of findings for the communication research and instruction are discussed next.

Practical Implications

Findings of this work are based on a large and representative sample of undergraduate students. Thus,

they can be used as benchmark of expected change for similar courses. In addition, students' initial (average) scores for all communication contexts were close in magnitude to the corresponding published normative values for SPCC (McCroskey & McCroskey, 1988; Rosenfeld et al., 1995). This fact further enhances confidence that results can be generalized to other university settings.

This study found that mean increases in students' communicative self-efficacy beliefs had similar magnitude in some communication contexts but not in others (see Figure 1). A plausible explanation for the observed

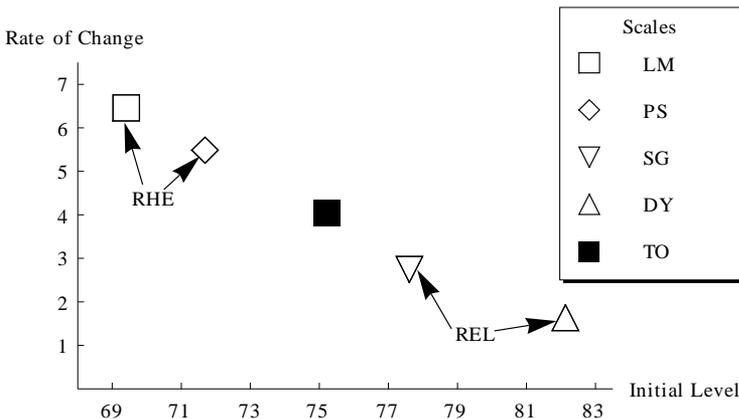


Figure 1. Average values of latent growth modeling (LGM) initial level (i.e., intercept factor) and rate of change (i.e., slope factor) for the four communication contexts defining SPCC and the overall construct. LM = large meetings; PS = public speaking; SG = small groups; DY = dyadic; TO = overall SPCC; RHE = the specific contexts emphasize a rhetorical orientation toward communication and are likely to have been affected by instruction; REL = the specific contexts emphasize a relational orientation toward communication and are unlikely to have been affected by instruction.

pattern of findings emerges if these trends are analyzed through the lens of rhetorical-relational communication framework (McCroskey & Richmond, 1996; Shepherd, 1992). This framework posits that when engaging in communication (outside family and/or romantic relationships), people focus primarily (although by no means exclusively) either on exerting influence and disseminating knowledge/opinions (i.e., have a rhetorical orientation) or on building and maintaining relationships (i.e., exhibit a relational orientation). (For recent findings supporting these stances see Hullman et al., 2010. For an application of this framework to student-teacher communication see Mottet, Frymier, & Beebe, 2006). From this perspective, items from LM (e.g., “Talk in a large meeting of acquaintances”) and PS (e.g., “Present a talk to a group of strangers”) contexts can be taken as emphasizing persuasion and, thus, reflecting primarily a rhetorical orientation toward communication. On the contrary, items from SG (e.g., “Talk in a small group of acquaintances”) and DY (e.g., “Talk with a friend”) contexts can be thought of as illustrating mainly a relational perspective.

Interpreting the results of this study through the rhetorical-relational lens reveals that increases in students’ self-efficacy beliefs were higher in magnitude for the communication contexts reflecting mainly a rhetorical perspective than for those emphasizing primarily a relational perspective (see Figure 1). Corroborating these findings with the focus of the course on public speaking, it appears that instruction had desired effects (for comparable findings in a population of high school students see Rubin, Welch, & Buerkel, 1995) and that spill-over effects of the instruction (i.e., increases in

SPCC in contexts emphasizing the relational dimension of communication) were quite small.

These results cannot (and should not) be taken to imply that a causal relationship exists between instruction and improvements in SPCC. However, in conjunction with other information, these different patterns of change in SPCC (see Figure 1) suggest that students' participation in the given course could be an important factor behind the observed improvement in students' communicative self-efficacy beliefs. In particular, noting that in the given semester the university offered only one other class (with a typical enrollment of about 15-20 students) targeting public speaking, it appears quite unlikely that concurrent enrollment in this other course offers a plausible alternative explanation for the pattern of results in Figure 1. In addition, although the design of the current study cannot account for extraneous effects of students' out-of-class experiences on SPCC, it is not very likely that students' out-of-class experiences were heavily tilted toward effecting positive changes in the rhetorical rather than the relational aspect of communication. Moreover, if extraneous factors rather than instruction in the given course were to be very influential, it would be more likely that increases in SPCC would be random or proportionate to initial levels. An examination of Figure 1 reveals that this is clearly not the case.

An analysis of Figure 1 also shows that the strength of the putative relationship between instruction and increase in communicative self-efficacy beliefs is a function of the variable chosen to assess the targeted outcome (see Le, Lockwood, Stecher, Hamilton, & Martinez, 2009 for similar findings in the mathematics and sci-

ence achievement domains). Specifically, if one were to use DY SPCC scores to gauge how effective class participation was in enhancing students' self-perceived communicative competence, one would reach different conclusion than if she/he used LM, PS, or TO SPCC scores as the target outcome. Along these lines, findings from this study offer a convincing support for two arguments: First, effective interventions (i.e., instruction in this case) are specific (i.e., target particular dimensions of interest) rather than global (O'Mara, Marsh, Craven, & Debus, 2006). Second, assessments of the effectiveness of intervention (i.e., instruction) strategies need to focus on target variables that can reliably detect meaningful differences in the effectiveness of intervention(s).

Strategies to Enhance Communicative Self-efficacy and Communication Skills

Results from the motivation and learning literature suggest that several approaches can be effectively used in communication courses to enhance students' communicative self-efficacy beliefs. First, it is important to note that ontological and epistemic beliefs about an academic field influence whether students' have confidence in their capability to succeed in the given domain (Buehl & Alexander, 2009). This is why, learners in communication courses need to be encouraged to move away from thinking that competent communicators are 'born' (i.e., that communication competence is an innate ability) and take a more proactive approach toward enhancing their communication skills. To this end, students have to be provided with clear, accurate, and realistic indicators of how success at a given task is defined and evalu-

ated (e.g., focal aspects of a ‘good’ public speech need to be clearly outlined). Moreover, helping students unpack the tasks they need to perform and understand their specific demands also influence positively the development of their self-efficacy beliefs (for more details see Buehl & Alexander, 2009).

Second, research findings (see Eccles & Wigfield, 2002 and references therein) indicate that students who are focused on evaluating and enhancing their own progress (i.e., have mastery-oriented goals; Eccles & Wigfield, 2002) exhibit higher levels of self-efficacy than their peers who are preoccupied to outperform their colleagues (i.e., have performance-oriented goals; Eccles & Wigfield, 2002). Thus, it is important that in communication courses mastery-oriented learning is promoted by means of delivering feedback and evaluation that target mastery rather than social norms (see Schiefele, 2009 for more details). Besides reinforcing “competence skills with appropriate feedback” (Hullman et al., 2010, p. 47), promoting a constructivist view of learning (e.g., communication competence can be enhanced by effort) is also a potentially effective strategy, for constructivists attitudes toward the teaching and learning process are “related to higher levels of self-efficacy and competency beliefs” (Buehl & Alexander, 2009, p. 485; see also Bakx et al., 2006).

Third, designing class activities and assignments around immediate and specific goals that are aligned with students’ competence levels, can enhance feelings of efficacy and intrinsic motivation (Eccles & Wigfield, 2002; Harter, 1981; Spinath & Steinmayr, 2008) as well as improve performance (Bandura, 1997; 2006; Eccles & Wigfield, 2002). These kinds of activities help students

experience success and feel energized to practice beyond classroom activities and, thus, increase the chances of more rapid acquisition of communication skills (Hullman et al., 2010).

Limitations of the Study

This work unearthed important findings but is not itself without limitations. Recording participants' SPCC levels at three points in time facilitated the examination of linear patterns of change in context-related self-efficacy beliefs. Although linear models provide reasonable approximations of complex evolutions (Willett, 1989) and the linear growth patterns detected in this study received strong empirical support, a wider array of possible trajectories could be investigated if data collected at four or more time points were available. Second, this research employed only quantitative information to examine change in SPCC. If available, inclusion of a qualitative component could have helped in shedding more light on how various factors interact to produce changes in people's own perceptions of competence (see Yauch & Steudel, 2003 for other advantages of qualitative approaches). Third, no measures of student motivation (or of motivation-related constructs) were available for this study. As a result, it was not possible to evaluate the extent to which these motivational constructs can predict changes in communicative self-efficacy beliefs.

Future Research and Conclusion

Findings indicate that students' communicative self-efficacy beliefs increased linearly during the semester in

which they were enrolled in a basic communication course. However, no data were available to assess whether this increasing trend continued after the end of the semester. By focusing on a wider time frame (e.g., a year), future studies could overcome this limitation and assess whether students' SPCC scores level off at some point in time and then decrease. Additionally, future research could evaluate whether self-efficacy trajectories corresponding to different communication contexts have similar or different shapes over a longer period of time.

Future studies might also employ relevant motivation constructs (e.g., a student's expectation of success in the given course, goal orientation, etc.) to account for the observed variability in communicative self-efficacy trajectories. By evaluating the influence of these covariates on both initial levels and rates of change, it would become possible to find out whether "differences between static and dynamic influences of predictors" (Hodis et al., 2010) are apparent. To triangulate quantitative findings, future research could also use qualitative data. Access to qualitative information would be especially valuable in situations in which specific predictors exert divergent influences on the self-efficacy beliefs trajectories.

In sum, this study integrates findings from the motivation-achievement and communication literature to underline the salient role that domain-specific self-perceptions of competence (i.e., communicative self-efficacy beliefs) play in academic settings. Additionally, the research shows that communicative self-efficacy beliefs can be accurately gauged using a measure of self-perceived communication competence (i.e., SPCC). Findings

from this work indicate that students' communicative self-efficacy beliefs increase linearly during the semester in which they were enrolled in a basic communication course. Finally, this research shows that (even in the absence of a true experimental design) an examination of the context-specific patterns of change in self-efficacy beliefs provides important information about the effectiveness of class instruction.

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