The Relationship Between Communication Apprehension and Learning Preferences in an Organizational Setting

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Abstract

This study extends previous research by examining the relationship between communication apprehension (CA) and learning preferences in an organizational setting. Findings suggest a correlation between employees' high CA and a preference for the reflective observation learning mode as well as the diverging and assimilating learning styles. Conversely, results revealed a correlation between employees' low CA and a preference for the concrete experience and active experimentation learning modes as well as the accommodating learning style. The author discusses the theoretical and practical significance of these results as well as proposes future research directions.

Previous research has revealed a link between communication apprehension (CA), or the degree of fear/anxiety one feels when communicating with others (McCroskey, 1977), and learning preferences (Allen, Long, O'Mara, & Judd, 2007; Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990; Bourhis & Stubbs, 1991; Dwyer, 1998; Johnson, 2003). However, previous studies have only tested this relationship in academic settings using high school and undergraduate students. This limitation becomes problematic when trying to generalize the findings to professional contexts.

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This study sought to extend the current body of research by testing whether a similar relationship exists between employees' CA and learning preferences.

Such an investigation is warranted in light of previous evidence suggesting that CA and learning preferences can affect an employee's occupation, professional development, and workplace effectiveness. Specifically, previous research has revealed that learning preferences can affect employees' occupational choice, perceived and actual job competence, managerial effectiveness, and interpersonal work relationships (Andersen & Bell-Daquilante, 1980; Armstrong & Anis, 2008; Baker & Kolb, 1993; Furnham, 1992; Furnham, Jackson, & Miller, 1999; D. A. Kolb, 1984; Loo, 2002a, 2002b; Sood & Adams, 1984; Wyrick, 2003; Yamazaki, 2005). Similarly, employees exhibiting symptoms of high CA are disadvantaged professionally as they are likely to receive fewer job offers, hold lower-ranked positions, earn less income, and avoid certain communication channels (Ayres, Keereetaweep, Chen, & Edwards, 1998; Reinsch & Lewis, 1984; Richmond, McCroskey, & Davis, 1982; Winiecki & Ayres, 1999). Also, they are often perceived as less informative, less effective, less productive, and less likely to excel (Bartoo & Sias, 2004; Harville, 1992; Richmond & Roach, 1992; Thomas, Tymon, & Thomas, 1994).

In light of the aforementioned professional effects, this study seeks to examine the linkage between CA and learning preferences in an organizational setting. In doing so, this answers calls to bridge the gap between the academy and workplace (Alred, 2006; Laster & Russ, 2010; Lewis, 2000; Lewis, Schmisseur, Stephens, & Weir, 2006; Thomas, 2007). I begin with an explanation of the multidimensional concept of CA as well as a review of previous scholarship elucidating relevant workplace correlates. Next, I outline D. A. Kolb's (1984) conceptualization of learning modes and styles as well as review relevant organizational correlates. Then, I present the hypotheses, methods, and findings. Finally, I conclude by discussing the theoretical and practical implications of the results.

Theoretical Rationale

Communication Apprehension

McCroskey (1977) defines CA as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (p. 78). He predicts that individuals with high CA minimize human contact to prevent the discomfort associated with various communicative acts. Individuals with low CA are not apt to demonstrate such reticence because they experience little to no discomfort when engaging in human communication. While the exact cause of CA remains unknown, previous scholars have suggested various causes, including cultural modeling (Richmond & McCroskey, 1998), personality characteristics (Butler, 1986), and biological temperament (Beatty & McCroskey, 2001).

To capture the dynamic essence of CA, McCroskey (1977) proposed that the construct can be analyzed from two perspectives: *traitlike CA* and *context CA*. The first

perspective, traitlike CA, is an individual's fear or anxiety about human communication across various contexts (McCroskey, 1977). Traitlike CA is a relatively enduring personality-type variable; however, "traitlike" is used purposefully so as to differentiate it from more constant personality variables. McCroskey (1977) introduced the second perspective, context CA, to allow for a situational view of an individual's CA. This construct captures the varying levels of discomfort an individual experiences when communicating in divergent environments. McCroskey (1977) proposed that context CA can be measured across four theoretically unique, but not necessarily mutually exclusive, states, including participation in: group discussions, interpersonal conversations, formal meetings, and presentations.

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While traitlike CA and context CA are unique constructs, they are not dichotomous. They both tap into a singular disposition: the fear/anxiety associated with human communication. Still, these constructs provide unique perspectives (McCroskey, Richmond, & McCroskey, 2009). Traitlike CA captures the general level of discomfort an individual experiences when communicating with others across diverse contexts. Using norms calculated by McCroskey (2009), individuals can be classified as having high, low, or average traitlike CA. On the other hand, context CA is a transitory orientation, providing a more composite analysis of the level of discomfort an individual experiences when communicating in different environments. In this sense, context CA provides a more granular view of a person's CA in specific environments; specifically, how comfortable is someone during group discussions, interpersonal conversations, formal meetings, and presentations? It is possible for someone to have high CA in all four contexts. It is also possible for someone to be extremely uncomfortable communicating in one context (e.g., public speaking) but feel completely at ease in another (e.g., interpersonal conversations). When placed in the same communication context, different people will likely experience different levels of CA.

Correlates of CA. Extant research has revealed significant linkages between traitlike and context CA and a number of detrimental social, psychological, academic, and occupational consequences (see McCroskey et al., 2009, for an exhaustive review). Below, I review three categories of these correlates: personality, behavioral, and affective domains.

Personality correlates. The first research category of correlates reveals strong linkages between CA and personality. For instance, McCroskey, Daly, and Sorensen (1976) examined the relationship between CA and multiple personality dimensions. They found that CA was positively correlated with anxiety, dogmatism, and external control but negatively related to cyclothymia, emotional maturity, dominance, surgency, character, adventurousness, confidence, self-control, tolerance for ambiguity, and need to achieve. Based on these findings, the researchers concluded that CA

"has a broad relationship with an individual's total personality" (McCroskey et al., 1976, p. 378). In interpreting their findings, the researchers concluded that, typically, individuals with high CA prefer working alone, are reflective, have a hard time expressing themselves, are quiet and reserved, exhibit a low task orientation, and avoid dialogic communication. Conversely, the researchers concluded that individuals with low CA usually seek human interaction, are expressive and talkative, exhibit emotional responses, are impulsive and decisive, and are tolerant of ambiguous or uncertain situations.

Dwyer and Cruz (1998) also examined the link between CA and personality. Using Jung's (1971) psychological types, they found that individuals with high traitlike and context CA demonstrate an introversion personality type while those with low traitlike and context CA exhibit an extraversion personality type. Additionally, they unexpectedly found that high public speaking CA is significantly linked to the sensing personality type while low public speaking CA is significantly related to the intuitive personality type. In an almost identical study, Opt and Loffredo (2000) revealed that individuals with high traitlike and context CA (in all four contexts) possess the introversion and sensing personality types while those with low traitlike and context CA exhibit the extraversion and intuition personality types. Curiously, they found that individuals who exhibit a feeling psychological type possess a higher level of public speaking CA than those with a thinking psychological type.

> It is also possible for someone to be extremely uncomfortable communicating in one context (e.g., public speaking) but feel completely at ease in another (e.g., interpersonal conversations).

Behavioral correlates. A second research category of correlates reveals a connection between CA and communication behaviors. For example, Comadena (1984) investigated the relationship between CA and performance in real, zero-history brainstorming groups. He found that, when compared with individuals with high traitlike CA, persons with low traitlike CA are likely to be high producers of ideas, perceive the act of brainstorming more positively, and demonstrate higher ambiguity tolerance. Comadena's research is consistent with previous studies revealing that traitlike CA significantly discriminates between individuals' high and low degree ideational output (Jablin, Seibold, & Sorensen, 1977; Jablin & Sussman, 1978; McKinney, 1982). For instance, McKinney (1982), concluded that individuals exhibiting symptoms of high CA (i.e., reticence) are perceived as less effective participants because of their limited verbal contributions, and are less likely to emerge as a group's leader. Based on this research trend, Comadena (1984) surmised, "[Low CA] appears to be a rather consistent predictor of effective performance in brainstorming groups" (p. 262).

Affective correlates. A third research category of correlates corroborates a link between CA and affective variables. For instance, Dobos (1996) analyzed the relationship between CA and affective responses to collaborative learning, the practice of working with others to apply and synthesize concepts. She found that individuals with

low group CA perceive collaborative learning experiences more positively than individuals with high group CA. More precisely, she found that individuals with low group CA associated collaborative learning with above-average communication satisfaction, greater participation activity, higher fulfillment of expectations, and below-average anxiety. The reverse trend was observed for individuals with high group CA.

This study sought to extend and expand the current body of research by examining whether employees' traitlike and context CA are linked to their learning preferences. The following describes the theoretical framework underpinning this study's relevant learning variables: learning mode and styles.

Learning Preferences

Theorists across disciplines have posited divergent perspectives about the cognitive, humanistic, social, communicative, and constructive processes of learning (e.g., Bruner, 1966; Dewey, 1938; D. A. Kolb, 1984; Lewin, 1997; Piaget, 1971). D. A. Kolb (1984) synthesized these fractured frameworks to advance Experiential Learning Theory (ELT), a holistic, dynamic, and dialectic perspective of human learning. However, ELT should be applied cautiously as it is not intended to reify learning preferences into fixed traits where they "become stereotypes used to pigeonhole individuals and their behavior" (A. Y. Kolb & Kolb, 2005a, p. 8). Instead, Kolb argues, ELT is only meant to provide a baseline discussion of the intricate differences in the way individuals perceive and process different learning experiences. To provide such a framework, ELT conceptualizes learning modes and styles.

Learning Modes. ELT predicts that humans learn through a recurring cycle of four learning modes: *concrete experience, reflective observation, abstract conceptualization*, and *active experimentation*. The first learning mode in ELT's cycle, *concrete experience* (learning by experiencing), endorses a receptive, involving, and experience-based approach to learning. This mode supports substantial levels of visceral engagement in the curriculum through immediate, here-and-now experiences. ELT's cycle does not begin and end with an isolated learning experience. Instead, the cycle raises learners' consciousness via the second mode, *reflective observation*, or learning by watching. Here, learners scrutinize the attitudes, thoughts, and/or behaviors that emerged during the concrete experience. In this mode, individuals reflect on the nuances of a concrete experience and begin an analysis of what is to be learned from that experience. Then, an individual uses these observations to conceptualize and think abstractly to build an idea, generalization, or personal theory from which new implications for action can be formulated or deduced through *abstract conceptualization,* or learning by thinking. This mode is primarily cognitive, whereby learners critically analyze and draw conclusions from what was learned from the concrete experience. This learning mode often involves the reassessment of one's attitudes, thoughts, and/or behaviors. These implications or hypotheses then serve as guideposts via *active experimentation* to integrate these paradigm shifts into future situations and new experiences. The mode involves learning by doing and prepares learners for cultivating and

directing personal growth by compelling them to plan for and apply the insights and knowledge gained during the concrete experience mode. Together, the four learning modes create a recursive, holistic, and dialectic process of human learning.

When placed on a grid, D. A. Kolb's learning modes (1984) form two independent dialectic dimensions: the perceiving, or "grasping experience," dimension (the concrete experience and abstract conceptualization learning modes) and the processing, or "transforming experience," dimension (reflective observation and active experimentation learning modes). The tension between these dimensions reflects the challenges embedded in the learning process. D. A. Kolb (1984) argues that individuals develop certain affinities for a combination of these dialectic dimensions, thus establishing learning style.

Learning Styles. D. A. Kolb (1984) conceptualized four distinct learning styles: *accommodating, diverging, assimilating*, and *converging*. First, individuals with the *diverging* learning style learn by creating; that is, actively listening and empathizing to create a multidimensional picture of problems or issues. Divergers prefer processing learning experiences using reflective observation, or learning by watching as well as perceiving learning experiences concretely, or learning by experiencing. Second, individuals with the *assimilating* learning style learn by planning; that is, independently ascertaining vast amounts of information. Assimilators prefer perceiving learning experiences abstractly, or learning by thinking as well as processing learning experiences through reflective observation, or learning by watching. Third, individuals with the *converging* learning style learn by deciding; that is, using an analytic and logical approach to solve problems, make decisions, and take action. Convergers prefer processing learning experiences through active experimentation, or learning by doing as well as perceiving learning experiences through abstract conceptualization, or learning by thinking. Fourth, individuals with the *accommodating* learning style learn by acting; that is, taking immediate action on what was learned. Accommodators prefer perceiving learning experiences through concrete experience, or learning by experiencing as well as processing learning experiences through active experimentation, or learning by doing.

Correlates of Learning Preferences. Previous research has established several linkages between learning preferences and occupational, personality, and behavioral variables. The following provides examples from three categories of these correlates: occupational, personality, and behavioral.

Occupational correlates. D. A. Kolb (1984) examined how learning style preferences affected academic majors and career choices and found that academic majors reinforce particular learning styles. For instance, the business discipline reinforces active, receptive styles while the mathematic discipline reinforces reflective, perceptive styles. Kolb also found that individuals gravitate toward careers that reinforce their individual cognitive styles. For instance, individuals who hold high-risk, high-pressure jobs likely demonstrate active and receptive learning styles. Conversely, individuals who hold low-risk, low discretion jobs tend to exhibit reflective and perceptive styles.

Personality correlates. Furnham (1992) investigated personality correlates and found that extraversion and psychoticism demonstrated significant correlations with

participants' learning styles. Most relevant to this study, Furnham found that individuals with an extraverted orientation demonstrate a preference for the converger learning style while those with an introverted orientation prefer the accommodator learning style. These findings corroborate research by Leith (1972) who found that extraverts learn more effectively than introverts with discovery-based instructional methods, while introverts learn more effectively with direct (reception) instructional methods.

Behavioral correlates. One aspect of Andersen and Bell-Daquilante's (1980) study examined linkages between individuals' communication behaviors and their learning mode preferences. They found that individuals who prefer the concrete experience learning mode are inclined to display immediate, attentive, and dramatic communicative behaviors. They also found that individuals who prefer the active experimentation learning mode are apt to display a willingness to communicate, including more verbal activity, immediacy, expressiveness, and attentiveness. Conversely, the researchers found that persons who prefer the reflective observation learning mode are inclined to demonstrate a high unwillingness to communicate including low verbal activity/expressiveness, low tolerance for disagreement, and lower immediacy as well as a low dominant and dramatic communication style.

> Convergers prefer processing learning experiences through active experimentation, or learning by doing as well as perceiving learning experiences through abstract conceptualization, or learning by thinking.

The Relationship Between Communication Apprehension and Learning Preferences

A handful of studies have examined the relationship between CA and variables related to individuals' learning preferences. The following reviews relevant findings from these investigations.

CA and learning mode preferences. Three extant studies have investigated how traitlike CA impacts the learning mode preferences of high school and undergraduate students (Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990; Johnson, 2003). All studies in this area used varying versions of the *Learning Style Inventory* (see D. A. Kolb, 2005). A consistent finding across these studies was that students with low traitlike CA demonstrate a preference for the active experimentation learning mode (Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990; Johnson, 2003). This finding suggests that students who feel comfortable communicating in various contexts prefer learning by doing. These studies also found that students with high traitlike CA demonstrate a preference for the reflective observation learning mode (Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990). This finding indicates that students who experience a general fear or anxiety communicating with others prefer to learn by watching. One inconsistent finding across these studies was that students with high traitlike CA prefer the concrete experience learning mode (Bourhis

& Berquist, 1990); this suggests that students who feel uncomfortable communicating across contexts actually prefer learning through hands-on and interactive experiences. Such a finding seems to contradict previous work describing typical high CA behavior (e.g., McCroskey et al., 2009).

CA and learning style preferences. Three extant studies have examined how CA influences learning style preferences (Allen et al., 2007; Bourhis & Stubbs, 1991; Dwyer, 1998). Two of these studies used the *Grasha-Reichmann Student Style Scale* (see Reichmann & Grasha, 1974) to assess undergraduate students' inclination for six learning styles: independent, dependent, avoidant, participative, collaborative, and competitive. Results, albeit somewhat inconsistent, revealed that students with high traitlike CA demonstrate a preference for the avoidant learning style (Allen et al., 2007; Bourhis & Stubbs, 1991) and independent learning style (Allen et al., 2007) while students with low traitlike CA demonstrate a propensity for the independent, collaborative, and participative styles (Bourhis & Stubbs, 1991). The third study (Dwyer, 1998) measured undergraduates' proclivity for four learning styles (collaborator, evaluator, experimenter, and explorer) as conceptualized by the *Learning Type Measure* (see McCarthy, 1994). Results from this study revealed that, females with high traitlike CA and high CA in the group, interpersonal and meeting contexts demonstrate an affinity for the evaluator and experimenter learning styles. Conversely, this study revealed that females with low traitlike CA and low CA in the group, interpersonal, meeting, and public speaking contexts demonstrate an affinity for the explorer learning style.

Current study. Previous research has revealed a significant relationship CA and learning preferences using participants from high school and collegiate settings (Allen et al., 2007; Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990; Bourhis & Stubbs, 1991; Dwyer, 1998; Johnson, 2003). This study sought to extend this body of research by testing whether a similar relationship exists between CA and learning preferences in an organizational setting. Such an investigation is warranted considering previous evidence suggesting that CA and learning preferences can impact employees' career trajectory, perceived workplace competence, professional development, professional effectiveness, and work relationships (e.g., Andersen & Bell-Daquilante, 1980; Armstrong & Anis, 2008; Baker & Kolb, 1993; Bartoo & Sias, 2004; Furnham, 1992; Furnham et al., 1999; Harville, 1992; D. A. Kolb, 1984; Loo, 2002a, 2002b; Sood & Adams, 1984; Winiecki & Ayres, 1999; Wyrick, 2003; Yamazaki, 2005). The following hypotheses guide this investigation.

Hypotheses

Previous scholarship suggests that individuals with high CA typically demonstrate introversion and sensing personality types, prefer working alone, are reflective, have a hard time expressing themselves, are quiet and reserved, exhibit a low task orientation, and avoid dialogic communication (Dwyer & Cruz, 1998; McCroskey et al., 1976; Opt & Loffredo, 2000). Conversely, individuals with a low CA orientation are

apt to exhibit the extraversion and intuition personality types, are inclined to seek human interaction, are expressive and talkative, exhibit emotional responses, enjoy people, are impulsive and decisive, and are tolerant of ambiguous or uncertain situations (Dwyer & Cruz, 1998; McCroskey et al., 1976; Opt & Loffredo, 2000). Perhaps it is because of these attributes that individuals with high CA are lower producers of ideas, perceive the act of collaborative learning and brainstorming more negatively, and demonstrate lower ambiguity tolerance than their peers with low CA (Comadena, 1984; Dobos, 1996; Jablin et al., 1977; Jablin & Sussman, 1978; McKinney, 1982). Considering this evidence, employees who experience a general fear or anxiety when communicating with others are likely to demonstrate a propensity for the learning modes (*reflective observation* and *abstract conceptualization*) and learning styles (*diverging* and *assimilating*) requiring greater reflexive and intrapersonal communication demands as opposed to the learning modes (*concrete experience* and *active experimentation*) and learning styles (*converging* and *accommodating*) requiring greater interactive and interpersonal communication demands. In light of this evidence, the following hypotheses predict that:

> *Hypothesis 1:* Significant positive correlations exist between traitlike and context CA (in all four contexts) and a preference for the *reflective observation* and *abstract conceptualization* learning modes.
> *Hypothesis 2:* Significant positive correlations exist between traitlike and context CA (in all four contexts) and a preference for the *diverging* and *assimilating* learning styles.
> *Hypothesis 3:* Significant negative correlations exist between traitlike and context CA (in all four contexts) and a preference for the *concrete experience* and *active experimentation* learning modes.
> *Hypothesis 4:* Significant negative correlations exist between traitlike and context CA (in all four contexts) and a preference for the *converging* and *accommodating* learning styles.

Method

Participants

As the purpose of this study was to test the relationship between CA and learning styles in an organizational setting, mid-level managers employed by a large national collegiate textbook retailer in the United States served as participants for this study. A total of 443 managers were emailed an invitation to participate in this study. The email contained a link to an online survey containing measures for assessing CA and learning preferences as well as questions inquiring about demographic data. In total, 156 managers returned usable surveys (response rate = 35%). Of the respondents who reported their sex, 54% were female and 46% were male. Managers with at least 1 year of experience comprised the largest percentage of the research population ($n = 140$;

89.7%) while participants' average length of employment at the research organization was 7.3 years (*SD* = 5.37). No other demographic data were collected.

Instruments

McCroskey's (1977) *Personal Report of Communication Apprehension* (PRCA) was used to measure employees' apprehension about communicating. This instrument contains 24 items on a 5-point Likert-type scale (anchored by "strongly disagree" and "strongly agree") assessing respondents' apprehension in four contexts: groups (e.g., "I dislike participating in group discussion), interpersonal exchanges (e.g., "I'm afraid to speak up in conversations), meetings (e.g., "communicating at meetings usually makes me uncomfortable"), and public speaking (e.g., "my thoughts become confused and jumbled when I am giving a speech"). See McCroskey et al. (1985) for an extensive assessment of the instrument's content validity. In previous research, this instrument has demonstrated high internal consistency, with alpha reliability estimates ranging from .93 to .97 (McCroskey, 2009; McCroskey et al., 1985). In this study, the obtained Cronbach's alpha for the overall scale (traitlike CA) was .97. The obtained reliability coefficients for the subscales (context CA) were the following: groups = .91; interpersonal = .91; meetings = .93; and public speaking = .93.

D. A. Kolb's (2005) *Learning Style Inventory* (LSI) was used to measure employees' learning preferences. This instrument asks respondents to rank the endings for 12 sentences using a 4-point scale (anchored by "least like you" and "most like you") so as to report their learning preferences. For example: "I learn best from . . . (a) rational theories; (b) personal relationships; (c) a chance to try out and practice; or (d) observation." Each choice corresponds to a different learning mode in the experiential learning cycle. The process outlined by D. A. Kolb (2005) was used to calculate each respondent's preferences for the different learning modes and styles. First, learning mode preferences were determined by summating raw scores for the corresponding items. Next, participants' learning styles were revealed by identifying their position on the active experimentation–reflective observation dimension and the abstract conceptualization–concrete experience dimension on Kolb's model.

In previous research this instrument demonstrated strong reliability (e.g., Kayes, 2005). See D. A. Kolb (2005) for an assessment of the LSI's content validity. In this study, the obtained Cronbach's alpha for each of the LSI's dimensions revealed acceptable internal consistency: concrete experience = .66; reflective observation = .85; abstract conceptualization = .81; and active experimentation = .81. The observed alpha for the concrete experience scale was lower than the typical threshold of .70 (Nunnally & Bernstein, 1994). This may be an idiosyncratic result of the organizational setting and/or research population.

Since the goal of the study was to examine the relationships between (a) CA and learning mode preferences and (b) CA and learning style preferences, Pearson correlations were run. Since this study did not seek to predict relationships between these variables no predictive causal tests were administered.

Results

Hypothesis 1 predicted positive correlations between CA and the *reflective observation* and *abstract conceptualization* learning modes. Significant positive correlations were revealed between *reflective observation* and traitlike CA, $r(154) = .46$, $p < .01$, as well as between this mode and all CA contexts: groups, $r(154) = .45$, $p < .01$; interpersonal, $r(154) = .42$, $p < .01$; meetings, $r(154) = .46$, $p < .01$; and public speaking, $r(154) = .32$, $p < .01$. Surprisingly, no positive correlations were found between *abstract conceptualization* and CA. Rather, a significant negative correlation was found between *abstract conceptualization* and public speaking apprehension, $r(154) = -.16$, $p < .05$. Most of the other CA context scores trended in the same negative direction, but none were significant (see Table 1). Based on these collective findings, Hypothesis 1 is partially supported.

Hypothesis 2 predicted positive correlations between CA and the *diverging* and *assimilating* learning styles. Significant positive correlations were revealed between *diverging* and traitlike CA, $r(154) = .33$, $p < .01$, as well as between this style and all CA contexts: groups, $r(154) = .27$, $p < .01$; interpersonal, $r(154) = .27$, $p < .01$; meetings, $r(154) = .34$, $p < .01$; and public speaking, $r(154) = .29$, $p < .01$. Significant positive correlations were revealed between *assimilating* and CA in two contexts: groups, $r(154) = .21$, $p < .01$; and interpersonal, $r(154) = .16$, $p < .05$. The other CA context scores trended in the same negative direction, but none were significant (see Table 1). Based on these findings, Hypothesis 2 is partially supported.

Hypothesis 3 predicted negative correlations between CA and the *concrete experience* and *active experimentation* learning modes. Significant negative relationships were also found between *concrete experience* and traitlike CA, $r(154) = -.23$, $p < .01$, as well as between this mode and three CA contexts: groups, $r(154) = -.29$, $p < .01$; interpersonal, $r(154) = -.25$, $p < .01$; and meetings, $r(154) = -.25$, $p < .01$. The relationship between this mode and the public speaking context was not significant (see Table 1); however, the score trended in the anticipated direction. Significant negative relationships were found between *active experimentation* and traitlike CA, $r(154) = -.30$, $p < .01$, as well as between this mode and all CA contexts: groups, $r(154) = -.32$, $p < .01$; interpersonal, $r(154) = -.29$, $p < .01$; meetings, $r(154) = -.29$, $p < .01$; and public speaking, $r(154) = -.17$, $p < .05$. Based on these findings, Hypothesis 3 is partially supported.

Hypothesis 4 predicted negative correlations between CA and the *converging* and *accommodating* learning styles. Significant negative relationships were found between *accommodating* and traitlike CA, $r(154) = -.29$, $p < .01$, as well as between this mode and three CA contexts: groups, $r(154) = -.29$, $p < .01$; interpersonal, $r(154) = -.31$, $p < .01$; and meetings, $r(154) = -.32$, $p < .01$. The relationship between this style and the public speaking context was not significant (see Table 1); however, the score trended in the anticipated direction. Surprisingly, no significant negative correlations were found between the *converging* learning style and CA; however, all scores trended

Table 1. Correlations Between Communication Apprehension and Learning Preferences
(N = 156)

CA	Learning Mode Preferences				Learning Style Preferences			
	Concrete Experience	Reflective Observation	Abstract Conceptualization	Active Experimentation	Diverging	Assimilating	Converging	Accommodating
Traitlike CA	−.23**	.46**	−.07	−.30**	.33**	.14	−.10	−.29**
Context CA								
Groups	−.29**	.45**	.01	−.32**	.27**	.21**	−.11	−.29**
Interpersonal	−.25**	.42**	−.02	−.29**	.27**	.16*	−.05	−.31**
Meetings	−.25**	.46**	−.06	−.29**	.34**	.14	−.07	−.32**
Public speaking	−.07	.32**	−.16*	−.17*	.29**	.00	−.13	−.14

Note. CA = communication apprehension.
*p < .05. **p < .01.

in the anticipated direction (see Table 1). Based on these findings, Hypothesis 4 is partially supported.

Discussion

Previous research has revealed a relationship between CA and learning preferences in high school and college settings (Allen et al., 2007; Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990; Bourhis & Stubbs, 1991; Dwyer, 1998; Johnson, 2003). This study sought to extend this line of research by testing whether a similar correlation exists in an organizational setting. Results from this investigation revealed a correlation between employees' high CA and a preference for the *reflective observation* learning mode as well as the *diverging* and *assimilating* learning styles. Conversely, findings revealed a correlation between employees' low CA and a preference for the *concrete experience* and *active experimentation* learning modes as well as the *accommodating* learning style. In the following, I discuss this study's results in greater detail and, where applicable, link them to findings from previous investigations. I also provide some theoretical explanations behind the findings.

As expected, employees' high traitlike CA and high CA in all four communication contexts were correlated with a preference for the *reflective observation* mode, or learning by watching. This finding is corroborated by results from previous studies (Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990). One explanation behind this relationship is that employees with high CA prefer to work alone and learn through independent reflection and observation (Comadena, 1984; Dobos, 1996; Jablin et al., 1977; Jablin & Sussman, 1978; McCroskey et al., 1976; McKinney, 1982). On a related note, this study found that employees' high traitlike CA and high CA in all four contexts were correlated with an affinity for the *diverging* learning style, or learning by creating. This finding is unsurprising as divergers typically prefer to play a passive role in learning situations by observing, listening, and analyzing (Armstrong & Anis, 2008; Kayes, 2002; A. Y. Kolb & Kolb, 2005b, 2006; D. A. Kolb, 1984). This study also revealed that employees' high CA in group discussions and interpersonal contexts were correlated with an affinity for the *assimilating* learning style, or learning by planning. This result is corroborated by a similar finding in previous research (Dwyer, 1998). A plausible explanation behind this relationship is that assimilators prefer learning via independent analysis and observation (Armstrong & Anis, 2008; Kayes, 2002; A. Y. Kolb & Kolb, 2005b, 2006; D. A. Kolb, 1984).

As predicted, employees' low traitlike CA and low CA in all four contexts demonstrated were correlated with a proclivity for the *active experimentation* mode, or learning by doing. This finding supports the revelation of similar relationships revealed by previous research (Andersen & Bell-Daquilante, 1980; Bourhis & Berquist, 1990; Johnson, 2003). One explanation behind this correlation is that employees with low CA feel comfortable collaborating with and influencing others (Comadena, 1984; Dobos, 1996; Jablin et al., 1977; Jablin & Sussman, 1978; McCroskey et al., 1976; McKinney, 1982). Such behavioral characteristics are traits of individuals who prefer

to learn by doing (Armstrong & Anis, 2008; Kayes, 2002; A. Y. Kolb & Kolb, 2005b, 2006; D. A. Kolb, 1984). Likewise, employees' low traitlike CA and low CA in all communication contexts except public speaking were correlated with a preference for the *concrete experience* mode, or learning by feeling. One explanation behind this relationship is that employees with low CA typically feel comfortable working with others and managing human dynamics (Comadena, 1984; Dobos, 1996; Jablin et al., 1977; Jablin & Sussman, 1978; McCroskey et al., 1976; McKinney, 1982). These behavioral traits are linked to individuals who prefer the "feeling" learning mode (Armstrong & Anis, 2008; Kayes, 2002; A. Y. Kolb & Kolb, 2005b, 2006; D. A. Kolb, 1984). Results from this study also revealed that employees' low CA were correlated with a preference for the *accommodating* style, or learning by acting. This finding corroborates a similar relationship revealed by Dwyer (1998). The nature of this relationship likely reflects the fact that accommodators are often comfortable interacting with and influencing others to translate ideas into action; characteristics often associated with individuals with low CA.

There were a few unexpected findings in this study including no significant negative correlations between low CA and the *converging* learning style; however, all results in this area trended in the anticipated direction. Another unexpected result was the significant negative correlation between public speaking CA and the *abstract conceptualization* mode, or learning by thinking. A possible explanation behind this finding is that employees who prefer to conceptualize learning experiences abstractly are comfortable assimilating large amounts of data into concise, logical forms (Kayes, 2002; A. Y. Kolb & Kolb, 2005b, 2006; D. A. Kolb, 1984). Such competencies are often advantageous when developing and delivering professional presentations (Smith, Sawyer, & Behnke, 2005). Another plausible explanation behind this unexpected finding is that employees who prefer the abstract conceptualization mode have significantly less CA in formal public speaking situations because of greater perceived control over the content and flow of communication. Conversely, these individuals likely exhibit higher CA in more dynamic and interactive communicative contexts (e.g., meetings, group discussions, and interpersonal exchanges) because of a lower amount of perceived control. Future investigations should test such speculations behind these unexpected findings.

Results from this study demonstrate several practical implications in that they provide a composite sketch of how employees with varying CA levels like to learn. Findings from this study can provide practitioners a roadmap for identifying how employees with varying CA levels prefer to learn as well as how employees can flex to other learning modes and adapt to diverse learning styles. The information in Table 2 synthesizes this information for practitioners. Specifically, the table highlights: (a) the learning preferences of individuals with high and low CA orientations, as demonstrated by the findings from this study and (b) growth opportunities for "flexing" one's learning style; that is, adapting to less-preferred learning modes/styles. This information is based on the results of this study as well as previous theoretical scholarship (A. Y. Kolb & Kolb, 2005b; see also A. Y. Kolb & Kolb, 2006; D. A. Kolb, 1984) and past research elucidating the behaviors of differing CA orientations (Comadena, 1984;

Table 2. Learning Preferences and Growth Opportunities of Low and High CA Individuals

	Learning Preferences: *May prefer to learn by . . .*	Growth Opportunities: *May need to learn how to . . .*
Individuals with low CA	• Interacting with and influencing others	• Solve problems independently
	• Focusing on action-oriented behaviors that produce immediate results	• Take a cognitive-oriented and observational approach to learning
	• Taking immediate action on what has been learned	• Listen to and analyze opposing viewpoints
	• Acting on "gut" feelings versus detailed, logical analysis	• Analyze data to make decisions versus just relying on intuition
	• Adapting quickly to meet evolving demands and changing circumstances	• Ascertain a holistic perspective of a problem or issue before taking action
Individuals with high CA	• Working independently	• Collaborate with others
	• Carefully listening to and observing others	• Actively influence and persuade others
	• Assuming an analytic and observational approach	• Manage interpersonal dynamics and conflicts
	• Using a collection of different viewpoints to analyze learning experiences	• Take action based on intuition versus in-depth analysis
	• Creating, testing, and refining theoretical models	• Display tolerance for the unpredictability of human behavior

Note. CA = communication apprehension.

Dobos, 1996; Jablin et al., 1977; Jablin & Sussman, 1978; McCroskey et al., 1976; McKinney, 1982).

As outlined in Table 2, employees with low CA may prefer to learn by interacting with and influencing others; taking immediate action on what has been learned; focusing on action-oriented behaviors that produce immediate results; acting on "gut" feelings versus detailed, logical analysis; and adapting to meet evolving demands and changing circumstances. To be more effective, employees with low CA may need to learn to occasionally take a cognitive (versus active) approach to learning, try to solve problems independently, use data versus "gut" feelings to make decisions, assume an observational (versus active) role during learning experiences, and listen to and analyze opposing viewpoints to gain a holistic perspective of a problem.

The nature of this relationship likely reflects the fact that accommodators are often comfortable interacting with and influencing others to translate ideas into action; characteristics often associated with individuals with low CA.

On the other hand, employees with high CA may prefer to learn by working independently, carefully listening to and observing others to ascertain a holistic perspective of a problem or issue, assuming an analytic and observational approach, using a collection of different viewpoints to analyze learning experiences, and creating, testing, and refining theoretical models. To be more effective, employees with high CA may need to learn to occasionally collaborate with and persuade others, manage social and interpersonal dynamics and conflicts, display tolerance for the unpredictability of human behavior, take action based on intuition versus in-depth analysis, and demonstrate agility when faced with unexpected challenges.

Results from this study may prove useful to individuals responsible for developing employees (e.g., supervisors, training professionals, peer coaches/mentors). This information can aid practitioners in identifying employees' learning preference based on their respective CA levels as well as pinpoint ways to help employees become more versatile and comfortable in diverse learning contexts. Helping employees become more versatile with a diverse range of learning modalities can help them perceive and process learning experiences in a more dynamic, complex, and rigorous manner (A. Y. Kolb & Kolb, 2005b; see also A. Y. Kolb & Kolb, 2006; D. A. Kolb, 1984). Additionally, this information may prove valuable to employees to help them drive their own learning, growth, and development. Such information can aid in the development and maintenance of a dynamic learning organization (Barker & Camarata, 1998; Russ, 2010).

Before employees enter the workforce they may benefit from communication instruction during their college years. Indeed, results from this investigation support previous calls for business educators to infuse communication training in collegiate business curriculum (Laster & Russ, 2010; Russ, 2009). Findings from this invitation also suggest that it may prove worthwhile for business educators to assess students' CA levels at critical turning points (e.g., on entry to business school, between each academic year, and on graduation). Information gleaned from such assessments can aid business educators in tailoring a range of pedagogical initiatives (e.g., programs, classes, and projects) to ensure students are more comfortable with and capable of demonstrating effective communication competencies necessary for success in the workplace.

While this study reveals several important findings, some limitations do exist. One limitation of this study is that participants were recruited from a single organization. While this investigation provides preliminary data regarding the relationship between CA and learning preferences in an actual organization, future research should extend these findings by examining the existence of this relationship in diverse organizational settings and industries as well as on multiple hierarchal levels. Additionally, to provide a more complete understanding of the relationship between communication and learning predispositions, future research could explore whether CA is an antecedent of learning preferences (or vice versa), and how these variables evolve over time in relation to each other. In a related vein, future investigations could explore whether CA influences (either positively or negatively) a person's ability to learn in a nonpreferred

learning mode/style. Another related research question is whether instructional diversification is more likely than differentiated instruction to aid students in increasing their confidence and competence in diverse communication and learning situations. To put it a little differently, what are the pedagogical consequences of limiting students' learning experiences based on their communication and learning preferences? Finally, this study involved a broad range of correlations which increased the possibility of findings statistical significance due to chance. Additionally, while a number of significant correlations were observed, a limited number were above .40, indicating that the effects found, although significant, were moderate. This, in addition with the sampling of respondents from one organization, limits—to some extent—the generalizability of the study's findings. Despite these limitations, this study advanced a broader understanding of the relationship between CA and learning preferences in an organizational setting. By confirming a link between these variables, this study revealed a number of implications for practitioners and academic alike. Hopefully, future research will continue broadening and deepening the landscape of literature on communication and learning.

Declaration of Conflicting Interests

Funding

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Bio

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