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Four studies (N = 639) were conducted to develop and validate a global measure of student communication satisfaction with an instructor. In study one, participants were 155 students who reported on an instructor from their smallest class during the semester. Participants completed the Student Communication Satisfaction Scale (SCSS), the Interpersonal Communication Satisfaction Inventory, and the Conversational Appropriateness Scale. Results indicated that the SCSS is unidimensional, has initial concurrent validity, and is internally reliable. In study two, participants were 161 students who completed the SCSS, Attributional Confidence Scale, Revised Affective Learning Measure, and Student Motives for Communicating Scale in an attempt to establish additional concurrent validity. The SCSS was correlated positively with attributional confidence for the instructor, affect for the course and instructor, and the relational, functional, participatory, and sycophancy motives, while excuse-making was correlated negatively with communication satisfaction. Additionally, results of a confirmatory factor analysis yielded a single-factor solution. In study three, a confirmatory factor analysis of the scale using another sample (N = 165) yielded a single-factor solution. In study four (N = 158), discriminant validity was established as the SCSS loaded on a separate factor than the ICSI and was correlated positively with a host of instructional outcomes, student communication behavior, and perceived instructor communication.

Keywords: Communication Satisfaction; Instructor Communication; Student Communication; Affective Learning; Motivation

A fundamental characteristic of student–teacher relationships is that student affect fosters relational development in the classroom (Frymier & Houser, 2000). The positive development of these relationships is frequently a function of direct communication between the teacher and student. A plethora of teacher communication behaviors such as teacher immediacy (Andersen, 1979; Christophel, 1990; Gorham, 1988; Plax, Kearney, McCroskey, & Richmond, 1986; Richmond, Gorham, & McCroskey, 1987), teacher confirmation (Ellis, 2000, 2004; Goodboy & Myers, 2008; Schrodt, Turman, & Soliz, 2006), and teacher affinity-seeking (Richmond, 1990; Roach & Byrne, 2001) are behaviors teachers employ to create student affect. Ultimately, teachers should be concerned with student attitudes and affect as they relate to actual learning (Bloom, Hastings, & Madaus, 1971; Krathwohl, Bloom, & Masia, 1964). One affective variable that teachers should be concerned with involves promoting a feeling of communication satisfaction.

Communication satisfaction is an affective response to the accomplishment of communication goals and expectations (Hecht, 1978a). Communication satisfaction results when positive expectations are fulfilled and is largely contextual (Hecht, 1978b). Competent communicators report more satisfaction in communication encounters (Spitzberg, 1991).

Although research on communication satisfaction has been conducted in other communication contexts (e.g., Chen, 2002; Myers, 1998), scholars have given little attention to communication satisfaction in the instructional context (Goodboy & Myers, 2007; Plax, Kearney, & Downs, 1986). Even though attitudes and affective learning have received considerable attention in the instructional context (Allen, Witt, & Wheeless, 2006), communication satisfaction remains a largely under-studied outcome in the teacher–student relationship. Accordingly, the purpose of these studies was to develop a measure of student communication satisfaction with an instructor and begin to validate this affective outcome through validity testing.

Study One

Hecht (1978a) developed a widely used measure of communication satisfaction called the Interpersonal Communication Satisfaction Inventory (ICSI). Although Hecht's measure has been established as a valid operationalization of interpersonal communication satisfaction, a different measure may be more appropriate to assess student communication satisfaction with an instructor for several reasons. First, Hecht's measure assesses satisfaction in reference to a particular conversation. Participants completing this measure reference an actual conversation they recently encountered. A global measure of student communication satisfaction would allow assessment in reference to communication with an instructor throughout the semester. Moreover, some of the scale items in Hecht's scale are difficult to adapt globally and irrelevant when measuring global satisfaction (e.g., "I had something else to do.").

Second, although the teacher–student relationship is argued to be an interpersonal one, there are two main characteristics that differentiate it from other relationships: (a) a lack of equality and (b) a time constraint associated with the relationship (Frymier & Houser, 2000). Consequently, communication is not as intimate or personal as in other interpersonal relationships. Much of student communication with an instructor is centered on gaining information about the course or content (Martin, Mottet, & Myers, 2000; Martin, Myers, & Mottet, 1999, 2002). This sort of communication is largely instrumental and does not transpire in other interpersonal relationships (e.g., romantic relationships, friendships). Thus, fulfilling students' expectations about communication and eliciting satisfied feelings in the classroom may not be as personal as some of the items on Hecht's scale (e.g., "I felt that we could laugh easily," "The other person genuinely wanted to get to know me," "I felt like I could talk about anything with the other person"). Although items such as these certainly reflect interpersonal communication satisfaction, student communication satisfaction may not be dependent on perceptions of laughter or the perception that anything could be talked about. Because research on communication satisfaction suggests differences in communication satisfaction when relationships are non-intimate versus intimate (Hecht, Sereno, & Spitzberg, 1984), scale items that reflect student communication satisfaction should be less interpersonal and, instead, reflect more of the fulfillment of classroom expectations. Accordingly, the purpose of this research was twofold: to develop a student communication-satisfaction measure and to begin validating this measure. Therefore, the following research question and hypothesis were presented:

RQ1: What is the underlying factor structure for the developed scale and is it reliable?

H1: A strong correlation will exist between Hecht's (1978a) interpersonal communication satisfaction measure and the student communication satisfaction scale.

Although communication satisfaction can be considered an outcome of communication competence, interpersonal communication competence is frequently considered a function of conversational effectiveness and appropriateness (Egland & Spitzberg, 1996; Spitzberg & Cupach, 1984). Appropriateness refers to when a behavior does not violate expected norms or values in a given context (Egland & Spitzberg, 1996). Canary and Spitzberg (1989) examined conflict strategies and appropriateness and discovered that appropriateness was related positively to integrative conflict tactics. Self and relational partner perceptions of competence are strong predictors of effectiveness and appropriateness (Spitzberg, 1991). Considering that communication satisfaction and conversational appropriateness both rely on the fulfillment of expectations and are theoretically similar constructs, they should be correlated positively. In an attempt to establish concurrent validity, the following hypothesis was posited:

H2: A positive relationship will exist between student communication satisfaction and reported conversational appropriateness with an instructor.

Method

Participants

The participants in study one were 155 undergraduate students (87 men, 68 women) enrolled in an introductory Communication Studies course, attending a large northeastern university. Ages ranged from 18 to 27 years ($M = 19.63$, $SD = 1.41$). Sixty five ($n = 65$) participants were freshmen, 50 participants were sophomores, 27 participants were juniors, and 13 participants were seniors.

Procedures and Measurement

Participants completed a survey at the end of the semester that assessed their general communication satisfaction and the appropriateness of conversations with a particular instructor. The survey included three research measures: the developed Student Communication Satisfaction Scale (see Measure Development section), the Interpersonal Communication Satisfaction Inventory (ICSI; Hecht, 1978a), and the Conversational Appropriateness Scale (Canary & Spitzberg, 1987). Participants were asked to reference general communication with their instructor in their smallest class during the current semester. These instructions were provided because large lecture formats may impede the amount of actual communication between a teacher and student while smaller classes tend to encourage more student communication (Auster & MacRone, 1994; Fassinger, 1995a,b). Participants reported on classes in which they were most likely to converse with a teacher.

The ICSI is 19 items and measures the communication satisfaction an individual perceives when referring to an actual conversation. The shorter 16-item version was used in this study. It utilizes a 7-point Likert response format ranging from (1) *strongly disagree* to (7) *strongly agree*. Sample items include "the other person let me know that I was communicating effectively" and "nothing was accomplished." Previous reliability coefficients have been .93 (Hecht, 1978a) and .88 (Goodboy & Myers, 2007). All scale items were modified to measure individual perceptions of global communication satisfaction with a specific teacher instead of a particular conversation. In this study, a Cronbach alpha of .92 ($M = 4.98$, $SD = 1.04$, Median $= 4.94$, Skewness $= -.46$) was obtained.

The Conversational Appropriateness Scale is 20 items and measures the degree to which communication fulfills one's expectations and does not violate social norms. It uses a 7-point Likert response format ranging from (1) *strongly disagree* to (7) *strongly agree*. Sample items include "s/he said several things that seemed out of place in the conversation" and "s/he was a smooth conversationalist." This scale was modified to measure general perceptions of communication appropriateness with a specific teacher. Previous reliability coefficients have been .80 (Canary & Spitzberg, 1989) and .82 (Canary & Spitzberg, 1987). In this study, a Cronbach alpha of .93 ($M = 5.47$, $SD = 1.00$, Median $= 5.65$, Skewness $= -.96$) was obtained.

Measure Development

The initial step in this study was to develop a global measure of student communication satisfaction. Twenty-six items were created that assessed general and global student satisfaction when communicating with an instructor. The first author created 20 items, which were then reviewed by the second author for face validity. The second author offered revisions to these 20 items and created an additional 6 items. These items were created to reflect Hecht's (1978b) conceptualization of communication satisfaction, this time from an instructional rather than an interpersonal perspective. To avoid acquiescence response bias, 18 of the items were positively worded and 8 were negatively worded. These 26 items were administered to participants. The response format for these items utilized a 7-point Likert-type format ranging from (1) *strongly disagree* to (7) *strongly agree.*

The 26 items from the preliminary pool were subjected to an exploratory factor analysis (using principal axis factoring). Since a single-factor solution was anticipated, an exploratory factor analysis was used without rotation of factors. The number of factors obtained from factor analysis was determined by four criteria. Each factor must (a) have a minimum Eigenvalue of 1.0, (b) account for at least 5% of the variance, (c) have a loading of .60 on one factor but less than .40 on another factor, and (d) not cross load on other factors (Hatcher, 1994; McCroskey & Young, 1979). Two items did not pass the 60/40 test and were consequently deleted. The remaining 24 items (see Table 1) produced a single factor with one Eigenvalue greater than 1.0.

Data Analysis

An exploratory factor analysis (without rotation) and internal reliability analysis were used to test RQ1. Pearson product-moment correlations were used to test H1 and H2.

Results

Research question one inquired about the number of factors in the developed scale and the reliability of the scale. The exploratory factor analysis (see Table 1) produced one factor (Eigenvalue = 15.81, 65.88% of the variance accounted for; $M = 5.49$, $SD = 1.08$, Median = 5.67, Skewness = $-.94$) with a total of 24 items. The scale produced a high internal reliability estimate with an obtained Cronbach alpha of .98.

Hypothesis one predicted a strong relationship between the developed SCSS and the existing but adapted ICSI. This hypothesis was supported. A positive and strong correlation was discovered between the two measures ($r[154] = .90$, $p < .001$) accounting for 81% of the variance.[1]

Hypothesis two examined concurrent validity support by predicting a positive relationship between the Student Communication Satisfaction Scale and the adapted Conversational Appropriateness Scale. This hypothesis was confirmed. Results of a Pearson correlation indicate that this relationship was significant and positive ($r[154] = .56$, $p < .001$) accounting for 31% of the variance.

Table 1 SCSS Items and Factor Loadings

Scale Item	(M, SD)	Factor Loading
1. My communication with my teacher feels satisfying	(5.61, 1.26)	.83
2. I feel pleased after talking to my teacher	(5.54, 1.18)	.85
3. I usually feel positive about my conversations with my teacher	(5.54, 1.27)	.85
4. My teacher makes an effort to satisfy questions I have	(5.87, 1.21)	.84
5. I get a sense of well being when I communicate with my teacher	(5.23, 1.33)	.85
6. I feel comfortable talking with my teacher	(5.67, 1.30)	.73
7. I dislike talking with my teacher	(5.83, 1.38)	.76
8. I am not satisfied after talking to my teacher	(5.72, 1.34)	.78
9. My conversations with my teacher are valuable	(5.26, 1.40)	.76
10. When I talk to my teacher, I feel like it's a waste of time	(5.72, 1.59)	.81
11. Talking with my teacher leaves me feeling like I accomplished something	(5.31, 1.29)	.75
12. My teacher fulfills my expectations when I talk to him/her	(5.39, 1.35)	.86
13. My teacher makes an effort to answer questions I have	(5.69, 1.30)	.85
14. My conversations with my teacher are worthwhile	(5.46, 1.32)	.89
15. I wish my teacher was better at communicating with me	(5.17, 1.54)	.79
16. I feel content when I talk to my teacher	(5.35, 1.26)	.81
17. I wish my conversations with my teacher were more productive	(5.00, 1.69)	.78
18. When I talk to my teacher, the conversations are rewarding	(5.32, 1.21)	.86
19. My teacher makes an effort to satisfy the concerns I have	(5.64, 1.27)	.86
20. My teacher tends to dominate our conversations and not allow me to get my point across	(5.39, 1.40)	.61
21. I can effectively communicate with my teacher	(5.52, 1.30)	.79
22. My teacher genuinely listens to me when I talk	(5.61, 1.31)	.88
23. My teacher can relate to me when I talk to him/her	(5.25, 1.32)	.73
24. My teacher makes time for me when I want to talk to him/her	(5.60, 1.22)	.73

Note. Items 7, 8, 10, 15, 17, and 20 are reverse coded. The abbreviated (and preferred) SCSS consists of items 1, 7, 8, 11, 12, 14, 18, and 19.

Study Two

The purpose of study two was to further validate the Student Communication Satisfaction Scale (SCSS). Validity refers to whether or not a measure is actually measuring what is proposed (Kerlinger, 1986). This study focused on establishing concurrent validity by correlating the SCSS with other established measures with which it should be theoretically related. Specifically, three variables were chosen to establish concurrent validity: attributional confidence, affective learning, and student motives for communicating.

Attributional Confidence/Uncertainty

Uncertainty Reduction Theory (URT; Berger & Calabrese, 1975) proposes that when strangers first meet, their primary concern is reducing uncertainty, which is equivalent to increasing predictability. To increase predictability, individuals make proactive attributions (Clatterbuck, 1979). Proactive attributions are predictions about future behaviors that an individual may employ, and these predictions are

based on prior knowledge and experience resulting from previous communication encounters (Clatterbuck, 1979). Therefore, individuals reduce uncertainty through previous interactions and attempt to predict future communication encounters by making proactive attributions. Attributional confidence is considered the level of (un)certainty an individual has toward another person.

Neuliep and Grohshopf (2000, p. 7) added an axiom of URT, stating that "during initial interaction, as uncertainty decreases, communication satisfaction increases." Goodboy and Myers (2007) found support for this axiom in the instructional context. Based on these findings, student scores on the SCSS should be related to perceptions of attributional confidence. Therefore, the following hypothesis was posited:

> H3:   A positive relationship will exist between student attributional confidence about a teacher and communication satisfaction with that teacher.

Affective Learning

One of the most commonly assessed outcomes in studies examining the teacher–student relationship has been learning. Specifically, affective learning has received a considerable amount of attention from instructional communication scholars. Affective learning involves student feelings, emotions, and degrees of acceptance toward the subject matter (Krathwohl et al., 1964). Affective learning is an important outcome for students, considering it is directly linked to cognitive learning (Rodriguez, Plax, & Kearney, 1996). Extant research suggests that a variety of teacher communication behaviors play a vital role in increasing student affect. For example, researchers have consistently reported positive linear relationships between teacher immediacy and affect toward the teacher and/or course (Andersen, 1979; Christophel, 1990; Gorham, 1988; Richmond et al., 1987). Furthermore, teacher humor orientation (Gorham & Christophel, 1990; Wanzer & Frymier, 1999), self-disclosure (Sorensen, 1989), and argumentativeness (Myers, 2002) are some additional communication behaviors that are related to student affect. Student feelings and degrees of acceptance should be related to whether or not they are satisfied with teacher communication encounters. It is probable that positive student attitudes toward a course and an instructor are developed through satisfying communication encounters with an instructor. To establish more concurrent validity for the measure, the following hypothesis was presented:

> H4:   A positive relationship will exist between student communication satisfaction with an instructor and affective learning (i.e., course affect and instructor affect).

Student Communication Motives

Based on the research of Rubin, Perse, and Barbato (1988), Martin et al. (1999) identified five student motives for communicating with their instructors: relational,

functional, participatory, excuse-making, and sycophancy. The *relational* motive refers to students' attempts to develop a personal relationship with their instructor. The *functional* motive involves acquiring information about the course or content. The *participatory* motive involves communicating in class because instructors may require participation and assign grades based on student participation. The *excuse-making* motive refers to rationalizing why work is late or missing. The *sycophancy* motive refers to a student's desire to make a favorable impression on an instructor.

Student communication motives are influenced by prosocial teacher behaviors, such as nonverbal immediacy (Martin, Valencic, & Heisel, 2001), confirmation (Goodboy & Myers, 2008), assertiveness and responsiveness (Myers, Martin, & Mottet, 2002), verbal approach strategies (Mottet, Martin, & Myers, 2004), teacher self-disclosure (Cayanus, Martin, & Goodboy, 2009), and instructor humor (Dunleavy, 2006). Beyond teacher behaviors, student motives are related to student attitudes and learning. For example, students who communicate for the functional, participatory, and relational reasons report gains in affective and cognitive learning (Martin et al., 2000). Moreover, students with higher amounts of pressure in school but lower levels of anxiety communicate for the functional motive, but students with lower levels of worry and peer pressure engage in sycophantic communication (Martin, Cayanus, Weber, & Goodboy, 2006). Most notably, students communicate for the relational, functional, participatory, and sycophancy motives more frequently when they perceive higher relational quality with an instructor (Myers, 2006). Considering that quality student–teacher relationships may be a result of satisfying communication experiences, the following hypothesis was posited:

H5: A positive relationship will exist between student communication satisfaction with an instructor and the (a) relational, (b) functional, (c) participatory, and (d) sycophancy motives.

Additionally, the following research question was proposed for the remaining student communication motive:

RQ2: Is student communication satisfaction with an instructor related to the excuse-making motive?

Method

Participants

The participants in study two were 161 undergraduate students (65 men, 96 women) enrolled in an upper level Communication Studies course at the same university. Ages ranged from 19 to 46 years ($M = 21.11$, $SD = 2.49$). Twenty-eight ($n = 28$) participants were sophomores, 86 participants were juniors, and 47 participants were seniors. Participants received minimal extra credit.

Procedures and Measurement

Participants completed a survey mid-semester that assessed their general communication satisfaction with an instructor, proactive attributional confidence about the instructor, affective learning, and motives for communicating with the instructor. The survey included four research measures: the SCSS, the Attributional Confidence Scale (Clatterbuck, 1979), the Revised Affective Learning Measure (Mottet & Richmond, 1998), and the Student Motives to Communicate (SMC) scale (Martin et al., 2000). Participants were again asked to reference their general communication encounters with their teacher in their smallest class during the current semester.

The Attributional Confidence Scale is 7 items and measures proactive attributional confidence that has been used as a way of operationalizing uncertainty in the URT framework (Clatterbuck, 1979). It uses a percentage response format ranging from 0% to 100% with a higher percentage indicating more proactive attributional confidence for the reported individual. Previous reliability coefficients have been .86 (Avtgis & Kassing, 2001; Sunnafrank, 1990). In this study, the obtained Cronbach alpha was .84 ($M = 68.53$, $SD = 16.72$, Median = 70.71, Skewness = $-.67$).

The Revised Affective Learning Measure is 32 items and assesses students' feelings and affect for both a course and instructor. It utilizes a 7-point semantic differential response format. Previous reliability coefficients have been .97 (Mottet & Richmond, 1998) and .98 (Myers, 2002) for both the course and instructor affect dimensions. In this study, the obtained Cronbach alphas were .96 ($M = 5.19$, $SD = 1.27$, Median = 5.54, Skewness = $-.56$) for course affect and .95 ($M = 5.59$, $SD = 1.50$, Median = 6.00, Skewness = -1.12) for instructor affect.

The SMC Scale is 30 items and assesses reasons why students communicate with their instructors. It uses a 5-point Likert-type response format ranging from (1) *not at all like me* to (5) *exactly like me*. This measure consists of five subscales that assess the following motives: relational, functional, participatory, excuse-making, and sycophancy. Previous reliability coefficients have been .89 for the relational subscale, .87 for the functional subscale, .82 for the participatory subscale, .87 for the excuse-making subscale, and .82 for the sycophancy subscale (Mottet et al., 2004). In this study, Cronbach alphas for the motives ranged from .85 to .91 (relational: $M = 2.44$, $SD = 0.85$, $\alpha = .89$, Median = 2.33, Skewness = .15; functional: $M = 4.12$, $SD = 0.79$, $\alpha = .91$, Median = 4.17, Skewness = -1.10; participatory: $M = 2.98$, $SD = 0.90$, $\alpha = .88$, Median = 3.00, Skewness = $-.14$; excuse-making: $M = 2.68$, $SD = 1.05$, $\alpha = .90$, Median = 2.50, Skewness = .38; sycophancy: $M = 2.53$, $SD = 0.83$, $\alpha = .85$, Median = 2.50, Skewness = .18).

Data Analysis

An exploratory factor analysis (principal axis factoring without rotation) and internal reliability analysis were used to examine the SCSS. Pearson product-moment correlations were used to test H3–H5 and RQ2.

Results

A second exploratory factor analysis of the SCSS (using the same criteria in study one) revealed that all of the items except item 20 loaded on one factor (Eigenvalue $= 14.47$, 60.30% of the variance accounted for; $M = 5.49$, $SD = 1.06$, Median $= 5.65$, Skewness $= -.98$). Therefore, item 20 was excluded from subsequent analyses. The obtained Cronbach alpha was .97. Hypothesis three examined concurrent validity support by predicting a positive relationship between the student communication satisfaction with an instructor and attributional confidence for that instructor. This hypothesis was confirmed. Results of a Pearson correlation indicated that this relationship is significant and positive ($r[160] = .45$, $p < .001$) accounting for 20% of the variance.

Hypothesis four examined concurrent validity support by predicting a positive relationship between student communication satisfaction with an instructor and affect toward the course and instructor. This hypothesis was supported. Communication satisfaction was correlated positively with course affect ($r[160] = .45$, $p < .001$) and instructor affect ($r[160] = .68$, $p < .001$) accounting for 20% and 46% of the variance respectively.

Hypothesis five a, b, c, and d examined concurrent validity support by predicting a positive relationship between student communication satisfaction with an instructor and the (a) relational, (b) functional, (c) participatory, and (d) sycophancy motives. Hypotheses five a, b, c, and d were supported. Communication satisfaction was correlated positively with each of these motives; relational: ($r[160] = .34$, $p < .001$), functional: ($r[160] = .32$, $p < .001$), participatory: ($r[160] = .22$, $p < .01$), and sycophancy ($r[160] = .16$, $p < .05$), accounting for 12%, 11%, 4%, and 3% of the variance respectively.

Research question two inquired about the relationship between student communication satisfaction and the excuse-making motive. Excuse-making was discovered to be correlated negatively with student communication satisfaction ($r[160] = -.21$, $p < .01$), accounting for 4% of the variance.

SCSS Short Form

A shorter 8-item version of the scale was created for researchers who desire more brevity. Items were selected that appeared to represent content validity according to Hecht's (1978a) conceptualization of communication satisfaction. The 8-item version consists of items 1, 7, 8, 11, 12, 14, 18, and 19 (reverse code 7, 8). Results of an exploratory factor analysis of the short version revealed that all eight items loaded on a single factor (Eigenvalue $= 5.34$, 66.78% of the variance accounted for; $M = 5.49$, $SD = 1.07$, $\alpha = .93$). The 8-item and 24-item SCSS versions are theoretically isomorphic via the result of a Pearson correlation between the two versions ($r[160] = .97$, $p < .001$), accounting for 94% of the variance. Results from study two using the 8-item version were nearly identical.[2]

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was conducted to verify the unidimensional factor structure of the SCSS. Confirmatory factor analysis provides stronger evidence for the dimensionality of a measure than exploratory factor analysis because of model fit and should be performed when using multiple-item linear scales (Levine, 2005). A CFA was performed on the abbreviated SCSS because of a better goodness of fit and more parsimonious model.

Abbreviated SCSS. An initial examination of the data suggested that each of the variables measured in the scale of student satisfaction was negatively skewed. That is, the data suggested that the absolute values of the skew for each of the satisfaction variables was larger than three and sometimes approached a value of five. According to Kline (2005), variables with absolute skew values greater than three are considered extremely skewed in the literature. These results imply that students were positively biased when it comes to communication satisfaction (i.e., most students were satisfied with their teachers). Because the Maximum Likelihood (ML) estimation of LISREL assumes normality, we adjusted the data for this pattern of results. To correct for this skew and to normalize the data we reflected and applied a logarithmic transformation (i.e., log10[8-"variable"]) to each variable. To get the variable scores back into their proper directions, we then reflected each variable again. Results from the updated measures of skew suggest that the correction worked to normalize the data.

The one-factor model was fitted to the data with the ML method of LISREL 8.8. The first model indicated a poor fit: $\chi^2(20) = 118.42$, $p < .01$; $NC = 5.92$; $CFI = .94$; $SRMR = .06$; $RMSEA = .17$. Modification indices suggested allowing the measurement errors of items seven and eight to co-vary. Although some scholars caution against the correlation of error terms, Fornell (1983) stated that doing so is warranted when based on theoretical or methodological grounds. In this case, allowing the error variances to co-vary made sense considering that items seven and eight were both reverse coded (leading us to believe that some of the shared error variance may be due to our sampling procedures). After changing the model to reflect this adjustment, LISREL was run again; the model indicated a good fit. Values of selected fit indices were as follows: χ^2 $(19) = 36.71$, $p < .01$; $NC = 1.93$; $CFI = .99$; $SRMR = .04$; $RMSEA = .08$. All loadings were significant ($p < .05$).

Study Three

The need to replicate results from confirmatory factor analyses is important for researchers who want to demonstrate the utility of their scales. However, replication is somewhat rare. That is, "models are seldom estimated across samples either by the same researchers … or by different researchers" (Kline, 2005, p. 65). Kline suggested that the practice of replicating structural equation models is critical if it is to "ever represent anything beyond a mere statistical exercise" (2005, p. 65). Therefore, study three was conducted to replicate the results of the previous factor

analysis in an attempt to demonstrate the utility of the SCSS in an independent sample. Furthermore, although studies one and two validated the SCSS in small classes, study three also sought to validate the SCSS in both small and large class environments. Therefore, study three assessed a wide array of classes in an attempt to replicate the dimensionality and the internal reliability of the abbreviated SCSS.

Method

Participants/Instrumentation

Participants were 165 undergraduate students enrolled in one of eight introductory or upper-level communication courses at a mid-sized Eastern university. Participants were 64 men and 101 women whose ages ranged from 18 to 30 years ($M = 19.95$, $SD = 1.72$). Thirty five ($n = 35$) participants were freshmen, 79 participants were sophomores, 17 participants were juniors, and 34 participants were seniors. Participants completed the 8-item SCSS in reference to their instructor from their last class during the last week of class (Plax et al., 1986).

Results

Similar to the results in study two, an examination of the data suggested that each of the variables measured in the scale of student satisfaction was negatively skewed. And, also similar to study two, we adjusted the data for this pattern of results. Next, the one-factor model (with error covariances between items seven and eight) was fitted to the data with the ML method of LISREL 8.8. The model converged and an admissible solution was obtained. Values of selected fit indices are as follows: χ^2 (19) $= 27.81$, $p = .09$; $NC = 1.46$; $CFI = 1.00$; $SRMR = .02$; $RMSEA = .05$. The data from the analysis suggest that the model fits the data well. All loadings were significant ($p < .05$). The obtained Cronbach alpha was .96 ($M = 4.98$, $SD = 1.68$, Median $= 5.38$, Skewness $= -.70$).

Study Four

The purpose of study four was to further validate the SCSS. Specifically, this study sought to establish discriminant validity of the measure by examining the SCSS in congruence with Hecht's ICSI, along with similar but distinct instructional outcomes (i.e., student interest, state motivation, affective learning), student communication behavior (i.e., out-of-class communication, functional and participatory motives for communicating), and instructor communication behavior (i.e., teacher confirmation, teacher clarity). Accordingly, this study sought to differentiate the SCSS from the existing but adapted ICSI. Additionally, this study examined relationships between the SCSS and similar constructs to distinguish our operationalization from similar, yet conceptually different measures.

Although the SCSS and ISCI measure are highly correlated, the SCSS should operationalize instructional communication satisfaction while the ISCI has already been validated to tap into interpersonal communication satisfaction. Although the teacher–student relationship certainly shares commonalities with interpersonal relationships (Frymier & Houser, 2000), discriminant validity must be provided to distinguish the two measures. Although strong correlations may indicate overlap in terms of construct (e.g., motivation and affective learning), different measures must have divergent factor structures if they are indeed measuring similar but distinct constructs. Considering that exploratory factor analysis has discriminated between these two measures[1], the next logical step would be to conduct a confirmatory factor analysis on a data set consisting of both the SCSS and ICSI. If the measures are unique to each context and there is support for discriminant validity, we would expect a CFA with all items from both scales to provide a poor fit to a single-factor model. On the other hand, the data should fit a two-factor solution (with SCSS items as one factor and ICSI items as another factor). Therefore, the following research question is posed:

RQ3:   Does a CFA with all of the SCSS and ISCI items provide an acceptable fit for a dual factor structure or is a unidimensional model a better fit?

Instructional Outcome Variables
Student interest. Student interest is an important instructional outcome consisting of three dimensions: meaningfulness, or students' perceived value of completing classroom tasks; competence, or students' evaluations of their own abilities and knowledge; and impact, which refers to students' beliefs that they make a difference in the classroom (Weber, Martin, & Cayanus, 2005; Weber, Martin, & Patterson, 2001). Student interest is related positively to student motivation (Weber et al., 2001) and cognitive learning (Weber, Fornash, Corrigan, & Neupauer, 2003) but related negatively to anxiety in school (Martin et al., 2006). Indeed, satisfied students should feel empowered in their classrooms. Therefore, the following hypothesis was offered:

H6:   A positive relationship will exist between student communication satisfaction with an instructor and student interest consisting of (a) meaningfulness, (b) competence, and (c) impact.

State motivation, affective learning. State motivation to learn refers to student attempts to obtain academic knowledge or skills from classroom activities by finding these activities meaningful (Brophy, 1987). Instructors who develop a rapport with their students (Frisby & Myers, 2008) and who utilize immediacy behaviors (Christophel, 1990) increase student motivation. Students who are motivated to learn are likely to have more satisfying communication experiences with their instructor (Myers, 2002). Furthermore, although affective learning was already reviewed in study two, we decided to replicate this finding in a data set including the ICSI. Therefore, the following two hypotheses were posited:

H7:   A positive relationship will exist between student communication satisfaction with an instructor and state motivation.

H8:   Another positive relationship will exist between student communication satisfaction with an instructor and affective learning (i.e., course affect and instructor affect).

Student Communication Variables
Student motives for communicating. Although the functional and participatory motives were also reviewed in study two, we also included these variables again to replicate previous findings with the SCSS while examining these variables in relation to the ICSI. Therefore, we proposed the same hypotheses:

H9:   A positive relationship will exist between student communication satisfaction with an instructor and the functional and participatory motives.

Out-of-class communication. Research suggests the importance of students' out-of-class experiences in the learning process (McKinney, Saxe, & Cobb, 1998), particularly out-of-class communication (OCC; Cotten & Wilson, 2006; Dobransky & Frymier, 2004). Although Jaasma and Koper (1999) report that OCC is centered around a variety of motivations, research suggests that OCC experiences are relatively infrequent (Cotten & Wilson, 2006). Regardless, research also suggests that instructors who engage in competent interpersonal exchanges with students foster student OCC (Myers, Martin, & Knapp, 2005), whereas instructors who are verbally aggressive to students will deter OCC (Myers, Edwards, Wahl, & Martin, 2007). Because instructors who create satisfying communication experiences within the classroom are likely to encourage student participation in OCC, the following hypothesis was posited:

H10:   A positive relationship will exist between student communication satisfaction with an instructor and out of class communication behavior.

Instructor Communication
Teacher clarity. Teacher clarity refers to an instructor's ability to effectively stimulate the desired meaning of course content and processes in students' minds through the use of appropriately structured verbal and nonverbal messages (Chesebro & McCroskey, 1998). Thus, instructors who are cognizant of clarity are straightforward, clear, and understandable, rather than ambiguous or unclear. Indeed, instructors who are clear foster student learning, motivation, and achievement and decrease student receiver apprehension (Chesebro, 2003; Rodger, Murray, & Cummings, 2007). Instructors who communicate in a clear manner should satisfy student expectations during conversations. Therefore, the following hypothesis was offered:

H11:   A positive relationship will exist between student communication satisfaction with an instructor and teacher clarity.

Teacher confirmation. Teacher confirmation is the process through which instructors communicate to students that they are recognized and acknowledged as valuable and

significant individuals (Ellis, 2000). Teacher confirmation involves three dimensions: responding to student questions/comments, demonstrating interest in the student learning process, and using an interactive teaching style. Students tend to prefer confirming teachers because they are perceived as understanding, caring, and credible (Ellis, 2000; Schrodt et al., 2006). Additionally, students report more motivation, cognitive learning, affective learning, participation, and importantly, student satisfaction when teachers are confirming (Ellis, 2004; Goodboy & Myers, 2008). Considering that students report more overall satisfaction with an instructor when he/she is perceived as confirming (Goodboy & Myers, 2008), it is likely that some of this satisfaction is a result of rewarding communication encounters. Therefore, the following hypothesis is posited:

> H12:   A positive relationship will exist between student communication satisfaction with an instructor and the teacher confirmation dimensions of (a) responding to questions, (b) demonstrating interest, and (c) teaching style.

Participants

The participants in study four were 158 undergraduate students (53 men, 105 women) enrolled in lower- and upper-level Communication Studies courses at the same university in study three. Ages ranged from 19 to 46 years ($M = 21.11$, $SD = 2.49$). Eighteen ($n = 18$) participants were freshmen, 36 participants were sophomores, 67 participants were juniors, 36 participants were seniors, and 1 participant was unreported. Participants received minimal extra credit.

Procedures and Measurement

Participants completed a survey two weeks before the end of the semester to assess their communication satisfaction with an instructor along with instructional outcomes (state motivation, affective learning, student interest), their own communication behavior (out-of-class communication, functional communication, participatory communication), and perceived instructor communication (teacher confirmation, teacher clarity). The survey included nine research measures: the 8-item and 24-item SCSS, the adapted ICSI (Hecht, 1978a), the State Motivation Scale (Christophel, 1990), the Revised Affective Learning Measure (Mottet & Richmond, 1998), the 18-item Learner Empowerment Scale (LES; Weber et al., 2005) adapted from Frymier, Shulman, and Houser (1996), Out of Class Interaction Scale (Knapp & Martin, 2002), two subscales of the Student Motives to Communicate (SMC) scale (Martin et al., 2000), the Teacher Confirmation Scale (Ellis, 2000), and the Teacher Clarity Short Inventory (TCSI; Chesebro & McCroskey, 1998). As in study three, participants again completed the aforementioned measures in reference to their instructor from their previous class (Plax et al., 1986).

Scale information for the SCSS, ICSI, Revised Affective Learning Measure, and SMC scale can be found in study two. Because the results of study two suggest the superiority

of the 8-item SCSS, the SCSS short version was used for this study and produced a Cronbach alpha of .98 ($M = 5.04$, $SD = 1.50$, Median = 5.38, Skewness = $-.84$). The ICSI was again modified to measure individual perceptions of global communication satisfaction with a specific teacher and a Cronbach alpha of .94 ($M = 4.59$, $SD = 1.25$, Median = 4.84, Skewness = $-.91$) was obtained. The Revised Affective Learning Measure produced a Cronbach alpha of .97 for both course affect ($M = 4.76$, $SD = 1.37$, Median = 4.90, Skewness = $-.62$) and instructor affect ($M = 5.12$, $SD = 1.84$, Median = 5.63, Skewness = $-.84$). The SMC Scale produced a Cronbach alpha of .73 for the functional subscale ($M = 3.11$, $SD = .74$, Median = 3.17, Skewness = $-.35$) and .86 for the participatory subscale ($M = 2.53$, $SD = .86$, Median = 2.50, Skewness = $.30$).

The 18-item *LES* measures student interest across three dimensions: meaningfulness, competence, and impact. Responses were solicited using a 7-point Likert-type scale, ranging from (1) *completely disagree* to (5) *completely agree*. Previous reliability coefficients for these subscales have ranged from .81 to .91 (Cayanus & Martin, 2008; Weber et al., 2005). In this study, obtained Cronbach alphas were .95 for meaningfulness ($M = 4.78$, $SD = 1.66$, Median = 5.25, Skewness = $-.75$), .88 for competence ($M = 5.87$, $SD = 1.04$, Median = 6.00, Skewness = -0.93), and .82 for impact ($M = 4.09$, $SD = 1.29$, Median = 4.17, Skewness = $-.21$).

The State Motivation Scale is 12 items and asks participants to report on their levels of state motivation to learn. Responses were solicited using a 7-point bipolar adjective scale. Previous reliability coefficients have been .93 (Edwards, Bresnahan, & Edwards, 2008) and .95 (Myers, 2002) for the summed scale. In this study, the obtained Cronbach alpha was .91 ($M = 4.22$, $SD = 1.39$, Median = 4.17, Skewness = $-.08$) for the summed scale.

The Out of Class Interaction Scale is 9 items and asks participants to report on how frequently they engage in out-of-class communication with an instructor. Responses were solicited using a 5-point Likert scale, ranging from (1) *strongly disagree* to (5) *strongly agree*. Previous reliability coefficients have been .80 (Myers et al., 2005) and .86 (Myers et al., 2007). In this study, the obtained Cronbach alpha was .84 ($M = 2.60$, $SD = 0.82$, Median = 2.56, Skewness = $.27$) for the summed scale.

The TCSI is 10 items and asks participants to report on the degree to which an instructor is able to effectively stimulate the desired meaning of course content and processes. Responses were solicited using a 5-point Likert scale, ranging from (1) *strongly disagree* to (5) *strongly agree*. Previous reliability coefficients have been .86 (Cayanus & Martin, 2008) and .92 (Avtgis, 2001) for the summed scale. In this study, the obtained Cronbach alpha was .91 ($M = 3.76$, $SD = .86$, Median = 4.00, Skewness = $-.89$).

The *Teacher Confirmation Scale* is 16 items and asks participants to report on the frequency with which an instructor exhibits confirming behaviors in the classroom across three dimensions: responding to questions, demonstrating interest, and teaching style. Responses were solicited using a 5-point Likert scale, ranging from (1) *strongly disagree* to (5) *strongly agree*. Previous reliability coefficients for each subscale have ranged from .84 to .87 (Ellis, 2004; Turman & Schrodt, 2006). In this study, obtained Cronbach alphas were .86 for responding to questions ($M = 4.00$,

$SD = .83$,   Median $= 4.20$,   Skewness $= -1.03$),   .87   for   demonstrating   interest ($M = 3.73$, $SD = .90$, Median $= 3.83$, Skewness $= -.92$), and .83 for teaching style ($M = 3.41$, $SD = .98$, Median $= 3.60$, Skewness $= -.44$).

Data Analysis

A confirmatory factor analysis was used to examine RQ3. Pearson product-moment correlations were used to test H6–H12. Partial correlations were conducted as post-hoc analyses.

Results

Results from confirmatory factor analyses suggest that the SCSS and Hecht's (1978a) ICSI are better conceptualized as two independent constructs as opposed to a unidimensional construct. A variety of analyses lend support for this conclusion. The data collected in study four reflect a normal distribution and all models were fitted to the data with the ML method of LISREL 8.8.

First, we examined the SCSS scale on its own to determine whether the data fit our model: the model indicated a good fit. Values of selected fit indices are as follows: $\chi^2(19) = 23.89$, $p = .20$; $NC = 1.26$; $CFI = 1.00$; $SRMR = .02$; $RMSEA = .05$. All loadings were significant ($p < .05$). Data from the ICSI, on the other hand, did not fit the model as well as the SCSS scale: $\chi^2(104) = 276.99$, $p = 0.0$; $NC = 2.66$; $CFI = .96$; $SRMR = .07$; $RMSEA = .13$. In particular, the RMSEA suggests that the model does not fit the data. These results indicate that the SCSS is a better fit with the data than Hecht's (1978a) ICSI.

Next, we examined data from the SCSS and the ICSI scales together as a unidimensional factor and compared the results to a confirmatory factor analysis of a two-factor model. Results from the one-factor model reflected a poor fit: $\chi^2(250) = 456.83$, $p = 0.0$; $NC = 1.83$; $CFI = .98$; $SRMR = .06$; $RMSEA = .11$. The data fit the two-factor model better: $\chi^2(251) = 551.89$, $p = 0.0$; $NC = 2.20$; $CFI = .97$; $SRMR = .06$; $RMSEA = .09$. These results suggest that the fit of the two-factor model is better than the fit of the one-factor model to the data.

Finally, because the two models are hierarchical, we compared the relative fit of the one-factor solution with the two-factor solution using a chi-square difference test. Results from this test ($\chi^2[1] = 95.06$, $p < .01$) suggest that the fit of the two-factor model is statistically better than that of the one-factor model.

Hypotheses six through eleven were supported (see Table 2).

Considering that correlation coefficients between the 8-item SCSS and afore-mentioned outcomes ranged significantly from .15 to .80, the SCSS appears to be measuring a related but distinct construct than these measures. However, because many of the correlations involving the SCSS and ICSI were similar and because of the strong association between the 8-item SCSS and ICSI ($r = .87$ in this study), partial correlations were also computed between the SCSS and hypothesized variables; controlling for variance explained by ICSI scores. Partial correlation coefficients

Table 2 Intercorrelations between Variables in Study Four

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Communication Satisfaction														
1. 8-item SCSS	—													
2. 16-item ICSI	.87†	—												
Instructional Outcomes														
3. SI—Meaningfulness	.55†	.50†	—											
4. SI—Competence	.43†	.51†	.36†	—										
5. SI—Impact	.47†	.48†	.50†	.38†	—									
6. State Motivation	.59†	.65†	.73†	.46†	.52†	—								
7. AL—Course	.51†	.53†	.84†	.46†	.43†	.72†	—							
8. AL—Instructor	.80†	.84†	.54†	.46†	.40†	.61†	.59†	—						
Student Communication														
9. OCC	.50†	.59†	.43†	.33†	.43†	.54†	.40†	.49†	—					
10. Functional Motive	.15*	.10	.18*	.06	.29†	.14*	.03	.14*	.38†	—				
11. Participatory Motive	.18*	.14*	.25**	.05	.40†	.25**	.12	.14*	.28†	.41†	—			
Instructor Communication														
12. Teacher Clarity	.77†	.82†	.54†	.43†	.43†	.59†	.52†	.74†	.41†	.07	.19**	—		
13. TC—Responding to Qs	.76†	.73†	.39†	.28†	.35†	.45†	.42†	.69†	.31†	.07	.13	.69†	—	
14. TC—Demonstrating Interest	.77†	.77†	.48†	.32†	.47†	.53†	.49†	.74†	.41†	.15*	.27†	.66†	.81†	—
15. TC—Teaching Style	.68†	.67†	.47†	.28†	.44†	.56†	.49†	.66†	.35†	.08	.29†	.62†	.68†	.76†

Note. *p < .05. **p < .01. †p < .001. One-tailed.

remained significant between student communication satisfaction (SCSS) and instructor affect, *partial r*(132) = .27, *p* < .01; meaningfulness, *partial r*(132) = .20, *p* < .05; responding to questions, *partial r* (132) = .35, *p* < .001; demonstrating interest, *partial r*(132) = .28, *p* < .01; teaching style, *partial r* (132) = .21, *p* < .01; and teacher clarity, *partial r* (132) = .25, *p* < .01. Therefore, although the SCSS and ISCI measure similar constructs, the SCSS accounts for unique variance beyond interpersonal communication satisfaction, possibly measuring instructional satisfaction.[3]

Discussion

This study attempted to create and validate a measure of student communication satisfaction. The results suggest that the SCSS is preliminarily valid and reliable. First, factor analysis results suggest that both the short and long versions of the SCSS possess a one-factor solution. However, given that the 8-item version provides a better goodness of fit and is more parsimonious, future research should use this version instead of the longer version (see Table 1).

Second, this measure was correlated strongly with a common measure of communication satisfaction. Both communication-satisfaction measures appear to be measuring a similar construct. This lends support for the construct and convergent validity of the SCSS. However, unlike the ICSI, the SCSS needs no adaptation in reference to an instructor. Also, the SCSS scale is highly reliable and focuses more on the functional aspects of communication between teachers and students rather than more personal and relational communication (which may not occur as frequently in the instructional context). Additionally, the scale is only 8 items. Finally, results from study four indicate that the SCSS is indeed different than the ICSI. Our comparison of a unidimensional factor with a two-factor solution showed that conceptualizing the SCSS and the ICSI as different (but related) constructs led to a statistically better fit with the data. Moreover, when we examined the two models on their own, it was apparent that the SCSS measure fit the data better than the ICSI. The combination of these results leads us to believe that the two scales are best conceived of as separate measures and that the SCSS is a more appropriate appraisal of communication between students and teachers than the ICSI.

Third, support for the concurrent validity of the scale was discovered in studies one, two, and four. In study one, conversational appropriateness and student communication satisfaction were correlated positively, yet the correlation was not strong enough to indicate conceptual overlap. In study two, communication satisfaction with an instructor was associated with some positive classroom outcomes including less uncertainty, more affective learning, and more classroom communication for the relational, functional, participatory, and sycophantic motives but less excuse-making communication. In study four, communication satisfaction was associated with a host of instructional outcomes, student communication behavior, and instructor communication behavior. Indeed, the collective results of studies two and four suggest that the SCSS is associated with the hypothesized variables in the

expected directions; yet these associations are not isomorphic, revealing dual evidence of concurrent and discriminant validity.

Collectively, these findings suggest two major implications. First, the communication satisfaction construct should be researched more because it is associated with prosocial outcomes in the classroom. Arguably, student communication satisfaction should be assessed as a dependent variable with other traditional learning outcomes (e.g., cognitive learning, affective learning, motivation). Instructors should strive to create satisfying communication encounters in the classroom, but researchers need to further identify how to create this sort of satisfaction for students. Moreover, research should address how student characteristics or traits influence their perceptions of communication satisfaction with an instructor.

Second, although the developed SCSS may be useful in assessing communication satisfaction in the classroom, more work needs to be conducted with this scale to further validate it. Future research should continue to employ confirmatory factor analysis to revisit the dimensionality of the SCSS (Levine, 2005). Predictive validity tests should be performed to examine if the SCSS can predict future student outcomes (e.g., teacher evaluations, course grades).

Additionally, researchers should examine instructor communication behaviors that may increase (e.g., teacher self-disclosure, relevance) or decrease (e.g., teacher misbehaviors) student communication satisfaction both inside and outside of the classroom. Researchers should also consider student learning perceptions as possible mediators of student communication satisfaction. Moreover, certain teacher communication behaviors that foster student communication satisfaction (e.g., teacher confirmation) may, in turn, result in subsequent student communication behavior (e.g., student affinity-seeking). Such relationships between classroom variables may prove useful in constructing models of instructional communication to provide a comprehensive view of classroom functioning and student learning (McCroskey, Valencic, & Richmond, 2004).

There are several limitations to this study. Not all classrooms, especially large lecture formats, foster communication between an instructor and a student. Some students merely show up to class with an apathetic orientation towards school, and thus the teacher–student relationship may be somewhat distant. It is possible that students reported on communication with their instructor based on only a few interactions. The frequency of communication between the instructor and student was not measured nor was the estimated size of the class. Without the frequency of teacher–student interactions, it is impossible to explain if participants were using a single conversation or multiple conversations with a teacher as a reference point for reporting on communication satisfaction. This oversight was not remedied until study four. An additional limitation is the possibility that participants may have never engaged in communication with the target instructor. Although participants were provided both verbal and written instructions in an attempt to combat this limitation, participants could have completed the survey without referencing actual communication that transpired in or outside of the classroom with that instructor. Also, the methodology employed does not allow for causal statements to be made.

Moreover, halo effects may explain the results discovered in these studies. It is possible that students who simply like a teacher or students who receive good grades will report high levels of communication satisfaction.

Future research using the SCSS could be improved in three ways. First, along with the 7-point Likert-type response format, researchers should add a "not applicable" (i.e., N/A) response format for students who have never conversed with the target instructor. Including this response format in study four allowed students to omit questions (although infrequently) that were irrelevant to them (see endnote). Second, researchers should be explicit in the scale instructions to direct students toward an instructor with whom they have actually conversed. Third, researchers should include an item that asks students to estimate the frequency of communication with the target instructor. This item should ask students to estimate how many conversations they had with the target instructor throughout the semester. This suggestion was also included in study four and allowed us to ensure that participants were accurately reporting on an instructor with whom they had conversed. These three suggestions would ensure that students are reporting on an appropriate instructor while also allowing students who do not converse with an instructor to abstain from responding.

Regardless, student communication satisfaction should be a desired outcome for instructors who provide fulfilling classroom interactions. Instructors concerned with students' needs and the relational goals of instruction (Mottet, Frymier, & Beebe, 2006) would be prudent to concern themselves with researching and creating student perceptions of communication satisfaction in their classrooms. These four studies provided an operationalization of this construct in the instructional context.

Notes

[1]   Although the correlation coefficient was strong enough to support isomorphism, results of an exploratory factor analysis (using principal axis factoring) including all 24 SCSS items and all 16 ICSI items revealed evidence of divergence. All 24 items of the SCSS loaded on one factor using the criteria mentioned previously (Hatcher, 1994; McCroskey & Young, 1979). However, the ICSI items 1, 3, 4, 12, and 16 did not load on the same factor, suggesting that these items may be assessing a different (i.e., more interpersonal) type of communication satisfaction. We suggest using Hecht's (1978a) ICSI for assessing interpersonal communication satisfaction.

[2]   Correlation coefficients obtained with the 8-item SCSS were nearly identical to those obtained with the 24-item version. Student communication satisfaction was correlated positively with attributional confidence ($r[160] = .45$, $p < .001$), course affect ($r[160] = .45$, $p < .001$), instructor affect ($r[160] = .65$, $p < .001$), and the relational ($r[160] = .35$, $p < .001$), functional ($r[160] = .34$, $p < .001$), participatory ($r[160] = .23$, $p < .001$), and sycophancy ($r[160] = .19$, $p < .05$) motives. A negative relationship was discovered for the excuse-making motive ($r[160] = -.19$, $p < .05$).

[3]   In study four, we added a "not applicable" (N/A) response format and also asked participants to estimate how many times they conversed with their instructor in the given semester ($M = 5.73$, $SD = 6.21$). The 8-item SCSS was deemed N/A by participants in two instances. The 16-item ICSI was deemed N/A by 20 participants. It appears that participants perceived the SCSS to be more relevant for classroom self-reports.

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