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The Impact of Perceived Teacher Confirmation on Receiver Apprehension, Motivation, and Learning

Kathleen Ellis

This article reports two studies on teacher confirmation. The first examined (1) students’ feelings of confirmation or disconfirmation as a function of perceived teacher behaviors, and (2) whether teacher confirmation behaviors occur in hierarchically arranged clusters. Sixty-one percent of the variance in students’ feelings of confirmation was attributable to perceived teacher confirmation behavior. A discernible hierarchy of confirmation behaviors failed to emerge. The second study focused on how teacher confirmation operates in instruction to influence students’ receiver apprehension and, ultimately, their motivation, affective learning, and cognitive learning. Half of the variance in students’ receiver apprehension was attributable to teacher confirmation. A learning model comprised of teacher confirmation, receiver apprehension, motivation, affective learning, and cognitive learning was tested. Structural equation modeling revealed that teacher confirmation directly influenced receiver apprehension. The influence of teacher confirmation on motivation, affective learning, and cognitive learning was indirect, mediated through receiver apprehension.

Keywords: teacher confirmation, receiver apprehension, motivation, affective learning, cognitive learning

A plethora of research in instructional communication has demonstrated that effective teacher communication is crucial to learning. Not only do teachers need to be clear in their presentation of course material (Chesebro & McCroskey, 1998;
Sidelinger & McCroskey, 1997), but studies consistently indicate that affective variables such as immediacy (Andersen, 1979; Christophel, 1990; Plax, Kearney, McCroskey, & Richmond, 1986) and teacher caring (Teven & McCroskey, 1997) also play a very important role and are positively related to learning. This article focuses on one such variable, teacher confirmation—the process by which teachers communicate to students that those students are valuable, significant individuals.

Although the fundamental importance of confirmation in interaction has been recognized for more than 40 years (e.g., Buber, 1957; Cissna & Sieburg, 1981; Laing, 1961; Sieburg, 1975, 1985; Watzlawick, Beavin, & Jackson, 1967), little empirical attention has been paid to the construct in general and, in particular, to the role of confirmation as a variable in classroom interaction. Nonetheless, in two studies, Ellis (2000) found that teacher confirmation plays a large and significant role in college students’ learning, underscoring the importance of this line of research. Yet much remains to be learned about teacher confirmation. The current investigation continues this line of research.

This article reports the results of two studies. The first study examined (a) the extent to which students who perceive that their teachers display confirming and disconfirming behaviors actually feel confirmed, and (b) the comparative degree of confirmation or disconfirmation that particular behaviors evoke. The comparative element in this study inquired whether behaviors occur in recognizable clusters that can be arranged in hierarchies from most confirming to least confirming and/or from most disconfirming to least disconfirming. The second study examined how confirming and disconfirming messages operate in instruction to influence students’ receiver apprehension, motivation, and, ultimately, their affective and cognitive learning. In particular, the second study (a) explored the relationship between teacher confirmation and receiver apprehension and (b) proposed and tested a model for learning comprised of teacher confirmation, receiver apprehension, motivation, affective learning, and cognitive learning to determine the direction and strength of the paths between the variables and to identify direct and indirect effects.

**Review of Literature**

Philosopher Martin Buber (1957) was the first to write about confirmation in an interpersonal sense. He argued that confirmation may well be the most significant feature of human interaction and proposed that confirmation is the interactional phenomenon by which we discover and establish our identity as humans. Laing (1961) further developed the construct and emphasized that confirmation is the process that includes actions on the part of others that cause one to feel “endorsed,” “recognized,” and “acknowledged” as a unique, valuable human being. Thus, “confirming behaviors are those that permit people to experience their own being and significance as well as their connectedness with others” (Cissna & Sieburg, 1981, p. 269). Disconfirmation, by way of contrast, negates the other as a valid message source and communicates to the other that he or she is merely a “thing,” an object in the environment, worthless and insignificant as a human being.
Although empirical research about confirmation is limited, much progress has been made toward the clarification of confirmation theory and the identification and systemization of specific communication behaviors that are likely to influence individuals in such a way that they feel confirmed or disconfirmed. Sieburg (1973, 1975) initiated this effort when she extracted the basic dimensions of confirmation and disconfirmation from the conceptual framework provided by Laing (1961) and the descriptive work by Watzlawick et al. (1967). According to the Sieburg (1975) and the Cissna and Sieburg (1981) typology, confirmation includes the interrelated clusters of (a) recognition, (b) acknowledgement, and (c) endorsement; disconfirmation includes (a) indifference, (b) imperviousness, and (c) disqualification of the speaker, his or her message, or both.

In addition to the typology just presented, Sieburg (1969) developed a system for coding and measuring confirming and disconfirming responses observed during interaction. She also developed the first instrument to measure perceived confirmation (1973). As a result of Sieburg’s work, limited empirical study has proceeded from two vantage points: (a) observation of confirming and disconfirming behavior, and (b) receiver perception of feelings of being confirmed and disconfirmed. In general, studies of observed confirmation have provided information about the nature of the confirmation construct, whereas studies of perceived confirmation have revealed information about how confirmation operates in relationship to other variables.

Because studies of observed confirmation have been reviewed elsewhere (e.g., Cissna & Sieburg, 1981; Ellis, 2000, 2002) and are not the focus of the current study, this review concentrates on studies of perceived confirmation. Such studies have been conducted primarily in two contexts: (a) the family, where confirmation has been associated with desirable relational outcomes including marital satisfaction (Clarke, 1973), degree of intimacy (Cissna, 1975), the amount of facilitative communication (Cissna & Keating, 1979), positive father–adult son relationships (Beatty & Dobos, 1992, 1993), and development of sons’ and daughters’ self-perceptions of global self-worth, intellectual ability, creative ability, and appearance (Ellis, 2002); and (b) the classroom, where it has been associated with positive student–teacher relationships (Leth, 1977) and affective and cognitive learning (Ellis, 2000).

Results of the Ellis (2000) study on perceived teacher confirmation behavior are particularly germane to the current study. Ellis (2000) developed and validated a measure of perceived teacher confirmation that delineates specific teacher behaviors that students identified as confirming or disconfirming to them. Analysis of data revealed four general categories of behavioral patterns through which teachers communicate confirmation: (a) teachers’ responses to students’ questions and comments, (b) demonstrated interest in students and in their learning, (c) style of teaching, and (d) absence of general disconfirmation. Additionally, Ellis’s results indicated that perceived teacher confirmation is a strong, significant predictor of learning, uniquely explaining 30% of the variance in affective learning and 18% of the variance in cognitive learning. She also found that the effect of teacher confirmation on cognitive learning was mediated through affective learning.
Study I:

Although the students who participated in the Ellis (2000) focus groups identified the teacher behaviors included in the Ellis instrument as confirming or disconfirming, no attempt has yet been made to measure empirically the extent to which students who perceive that their teachers display these confirming or disconfirming behaviors actually feel confirmed or disconfirmed. Testing whether “observable behaviors influence others in such a way that they feel confirmed or disconfirmed” has been called for by Cissna and Sieburg (1981, p. 262) and is crucial to the growing evidence of construct validity of the Ellis instrument. Further, the comparative degree of confirmation or disconfirmation that particular behaviors elicit has not been examined, nor has the possibility that specific confirming or disconfirming behaviors may cluster together on a continuum to produce hierarchies that range from most to least confirming and/or most to least disconfirming, another question posed by Cissna and Sieburg (1981). With this in mind, the following research questions were posited for the first study:

RQ1: Do students who perceive that their teachers exhibit confirming (or disconfirming) behaviors actually feel confirmed (or disconfirmed)?

RQ2: Do perceived teacher confirmation and disconfirmation behaviors occur in recognizable clusters that can be arranged in hierarchies from most to least confirming and/or from most to least disconfirming?

Method

Respondents and Data-Collection Procedures

Respondents for the first study were 295 undergraduate students enrolled in general education classes (101 men, 194 women). They ranged in age from 18 to 48 years ($M = 22.8$ years) and reported a variety of ethnic backgrounds (231 Caucasians, 23 Asian/Pacific Islanders, 13 Hispanics, 8 African American, 3 Native Americans, and 17 others). The students varied in class standing (62 freshmen, 79 sophomores, 73 juniors, and 81 seniors) and represented 33 different academic majors. Participation was voluntary and anonymous, and no extra credit was given for participation.

The method of data collection developed by Plax et al. (1986) was employed. Respondents were asked to evaluate the teacher and their learning in the class immediately preceding the one in which they were serving as respondents. This method of data collection has been widely used in studies of teacher behavior and student learning and has been found to generate data that evaluate a wide range of subject areas, class sizes, and teachers. Data were collected during weeks 14 and 15 of a 16-week semester, when students were very familiar with their instructors’ typical communication behavior. Although respondents were not asked to provide the name of the instructor they evaluated, respondents were asked to provide the gender of the instructor, the course title, and the course number. This resulted in the evaluation of 123 different courses. For 130 participants, the subject of their evaluation was a male instructor; 164 participants rated female instructors. Class size
varied, with 17% of respondents evaluating classes with fewer than 20 students, 32% evaluating classes with 21–30 students, 36% rating classes with 31–60 students, 11% evaluating classes with 61–100 students, and 4% evaluating classes with more than 100 students. Forty-two percent indicated that they were taking the course as a general education requirement, 35% were taking the course as a requirement for their major, and 23% were taking the course as an elective.

Because data were collected in intact classes, there was a possibility of dependency in the data. However, efforts were made to minimize the potential effects: (a) as mentioned, all data were collected in general education classes that enroll students from all majors of the university, and (b) as suggested by Stevens (1996), a stringent alpha of .01 was set for significance.

**Measurement**

**Teacher confirmation.** The Teacher Confirmation Scale (TCS) developed by Ellis (2000) was used to measure the extent to which students perceived that their teachers exhibited confirming and disconfirming behaviors during the semester. This 27-item Likert scale was developed directly from the results of student focus groups and interviews wherein students identified specific teacher behaviors that communicate to them that they are valuable, significant individuals or, conversely, that they are not valuable, significant individuals. The TCS measures low-inference teachers’ behavior across four dimensions: (a) teachers’ responses to students’ questions—comments, (b) demonstrated interest in students and in their learning, (c) style of teaching, and (d) absence of disconfirmation. In the initial study using the TCS (Ellis, 2000), the instrument cross-validated to a second sample and demonstrated evidence of concurrent and discriminant validity as well as excellent reliability (Cronbach’s alpha = .95). Reliability for the current study, as indicated by Cronbach’s alpha, was .95, with subscale reliabilities of .85 for teachers’ response to students’ questions, .84 for demonstrated interest, .84 for teaching style, and .93 for disconfirmation. Exploratory factor analysis based on principal-components extraction suggested a single-factor solution with all items loading highest on the first unrotated factor (McCroskey & Young, 1979). This solution produced an eigenvalue of 16.23, which explained 60.2% of the variance. Loadings ranged from .54 to .77.

**Perceived confirmation.** The Perceived Confirmation Scale (PCS) developed by Sieburg (1973) was used to assess the extent to which students felt confirmed by their teachers. This instrument is based on the theoretical underpinnings of the confirmation construct and has been widely used in previous studies of perceived confirmation. The PCS operationalizes perceived confirmation as a person’s score on a 6-item, high-inference Likert scale. Respondents indicate their level of agreement on the following items: (a) He or she is not at all interested in what I have to say, (b) He or she accepts me, (c) He or she has no respect for me at all, (d) He or she dislikes me, (e) He or she trusts me, and (f) He or she is aware of me. In previous studies (Cissna, 1975; Clarke, 1973), the PCS has demonstrated adequate test–retest
reliability \((r = .70 \text{ to } .92)\) and adequate internal consistency, with Cronbach’s alpha ranging from .75 to .89. Cronbach’s alpha in the present study was .85.

As a validity check for the PCS, a Pearson correlation was computed between respondents’ overall scores on the PCS and the extent of their agreement to the single item, “The teacher values me as a person.” A correlation of \(r = .77, p < .001\), was found, indicating 59% shared variance. Results of exploratory factor analysis using principal-components extraction revealed a single-factor solution with an eigenvalue of 3.48, which accounted for 58% of the variance. Loadings ranged from .67 to .84.

**Control variables.** Demographic information was collected for use as control variables in the analysis. Respondents were asked to indicate their gender, ethnicity, age, academic major, the particular course they evaluated, gender of the instructor they evaluated, and reason for taking the course (i.e., required general education, required course for major, elective).

**Results**

**Teacher Confirmation Behavior and Students’ Perceived Confirmation**

The first research question asked whether students who perceive that their teachers exhibit confirming (or disconfirming) behaviors actually feel confirmed (or disconfirmed). A multiple regression analysis was conducted to address this question. Perceived confirmation, operationalized as students’ scores on Sieburg’s PCS when referencing their teachers, was the dependent variable. Predictors were teacher confirmation behavior, operationalized as students’ ratings of their teachers on the TCS, and the control variables of gender of student, age, ethnicity, major, reason for taking the class, and gender of teacher.

The regression equation yielded a Multiple \(R\) of .79, \(F(11, 273) = 41.03, p < .0001\). Adjusted \(R^2\) was .61, indicating that 61% of the variance in respondents’ feelings of being confirmed by their teachers could be accounted for by the variables included in the equation. The partial correlation for teachers’ confirmation behavior was .78, \(t(273) = 20.69, p < .0001\), indicating that after controlling for gender of student, age, ethnicity, major, reason for taking the class, and gender of teacher, 60.8% of the variance in students’ feelings of being confirmed by their teachers could be uniquely explained by teachers’ confirmation behavior.

**Hierarchies of Teacher Confirmation and Disconfirmation Behaviors**

The second research question asked whether teacher confirmation behaviors occur in recognizable clusters that can be arranged in hierarchies from most to least confirming and/or most to least disconfirming. This question was examined using canonical correlation analysis, a parsimonious method of describing the association between two sets of variables through the use of linear combinations. One variable set consisted of the 27 individual items included in the TCS; the second variable set
consisted of the composite PCS score and the single item, “The teacher values me as a person.”

Results indicated that the overall amount of variance explained by the canonical equation was significant, Wilk’s lambda = .26, \( p < .001 \). The canonical correlation for the first pair of canonical variates was .82, \( p < .001 \), which explained 67% of the variance in the linear composites. The correlation for the second pair of variates was not significant. Hence, only the first solution was interpreted.

Table 1 reports, in descending order, the function coefficients for each item. The item that was most important to the dependent variable set was, “Takes time to answer students’ questions fully” (function coefficient = .78). Thus, high scores on this item were more strongly associated with high scores on the PCS and the single-item measure than high scores on any other item, suggesting that taking time to answer students’ questions fully is the most confirming behavior of all items included in the TCS. The item of least importance to the dependent variable set was, “Communicates to the class that he or she doesn’t have time to meet with students” (function coefficient = .44).

Examination of the ordered function coefficients revealed that coefficients clustered very closely together, suggesting that all of the teacher behaviors delineated in the TCS are indeed confirming (or disconfirming) to students. No discernible hierarchy could be identified, nor did a natural cut-point emerge in terms of the function coefficients.

Discussion

Study I makes a valuable theoretical and pedagogical contribution to our knowledge of teacher confirmation and its measurement. The strong correlation between students’ feelings of being confirmed, as measured on Sieburg’s Perceived Confirmation Scale, and teachers’ perceived use of confirming behaviors, as measured on Ellis’s Teacher Confirmation Scale (\( r = .79 \)), adds to the growing evidence of the validity of the TCS. This finding, as well as the finding for the second research question, provides evidence that the teacher behaviors included in the TCS as confirming or disconfirming to students do indeed evoke students’ feelings of being confirmed or disconfirmed. The finding is important because a major advantage of the TCS for promoting teaching excellence is that confirmation is defined in discrete teaching behaviors (e.g., answering students’ questions fully), not in abstract terms that are difficult to define, measure, teach, and monitor (e.g., respect, liking). Therefore, we can be confident that when we exhibit the discrete teaching behaviors included in the Teacher Confirmation Scale, we are indeed confirming students’ value as human beings.

Study II:

Having established the reality of teacher confirmation as an object of student perception, the next logical step in teacher confirmation research was to begin to
Table 1 Function Coefficients for Teacher Confirmation Behaviors Ordered by Degree of Confirmation ($n = 280$)

<table>
<thead>
<tr>
<th>Survey item</th>
<th>Function coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes time to answer students’ questions fully</td>
<td>.78</td>
</tr>
<tr>
<td>Makes an effort to get to know students</td>
<td>.74</td>
</tr>
<tr>
<td>Is rude in responding to some students’ comments or questions during class*</td>
<td>.74</td>
</tr>
<tr>
<td>Indicates that he or she appreciates students’ questions or comments</td>
<td>.73</td>
</tr>
<tr>
<td>Focuses on only a few students during class while ignoring others*</td>
<td>.72</td>
</tr>
<tr>
<td>Displays arrogant behavior*</td>
<td>.70</td>
</tr>
<tr>
<td>Demonstrates that he or she listens attentively when students ask questions or make comments during class</td>
<td>.70</td>
</tr>
<tr>
<td>Puts students down when they go to the teacher for help outside of class*</td>
<td>.68</td>
</tr>
<tr>
<td>Talks down to students*</td>
<td>.68</td>
</tr>
<tr>
<td>Intimidates students*</td>
<td>.67</td>
</tr>
<tr>
<td>Communicates that he or she is interested in whether students are learning</td>
<td>.67</td>
</tr>
<tr>
<td>Belittles or puts students down when they participate in class*</td>
<td>.66</td>
</tr>
<tr>
<td>Communicates that he or she believes that students can do well in the class</td>
<td>.66</td>
</tr>
<tr>
<td>Embarrasses students in front of the class*</td>
<td>.65</td>
</tr>
<tr>
<td>Shows favoritism to certain students*</td>
<td>.65</td>
</tr>
<tr>
<td>Is available for questions before and after class</td>
<td>.65</td>
</tr>
<tr>
<td>Uses an interactive teaching style</td>
<td>.62</td>
</tr>
<tr>
<td>Uses a variety of teaching techniques to help students understand course material</td>
<td>.62</td>
</tr>
<tr>
<td>Establishes eye contact during class lectures</td>
<td>.59</td>
</tr>
<tr>
<td>Is willing to deviate slightly from the lecture when students ask questions</td>
<td>.59</td>
</tr>
<tr>
<td>Smiles at the class</td>
<td>.58</td>
</tr>
<tr>
<td>Checks on students’ understanding before going on to the next point</td>
<td>.58</td>
</tr>
<tr>
<td>Asks the class how they think the class is going and/or how assignments are coming along</td>
<td>.57</td>
</tr>
<tr>
<td>Incorporates exercises into lectures when appropriate</td>
<td>.55</td>
</tr>
<tr>
<td>Is unwilling to listen to students who disagree (close-minded)*</td>
<td>.55</td>
</tr>
<tr>
<td>Gives oral or written praise on students’ work</td>
<td>.50</td>
</tr>
<tr>
<td>Communicates to the class that he or she doesn’t have time to meet with students*</td>
<td>.44</td>
</tr>
</tbody>
</table>

*Item was reverse-scored for analysis.

examine how confirmation operates in instruction to impact students’ affect and learning. Such was the objective of Study II.

In a confirming classroom environment, we would expect that students are likely to feel relaxed and comfortable during the learning process. In contrast, we would expect tension to be high in a disconfirming classroom environment. Thus, it seems plausible that one critical element in the classroom process that may be influenced by teacher confirmation is receiver apprehension.

Receiver apprehension (RA), as defined by Wheeless (1975), is “the fear of misinterpreting, inadequately processing, and/or not being able to adjust psychologically to messages sent by others” (p. 263). RA is conceived to be a state or trait condition involving listening competence and concern with having to listen to messages that are psychologically difficult to hear. Research on RA has proceeded
along three fronts: origins, outcomes, and, more recently, treatment. The following brief review concentrates on findings related to the instructional context.

Wheeless, Preiss, and Gayle (1997) discuss four interrelated explanations for RA: (a) situational fear of encountering new information (Wheeless & Scott, 1976), (b) inability to assimilate information based on the listener’s cognitive complexity (Beatty, 1981; Beatty & Payne, 1981), (c) lack of schemata to strategically process information (Delia, O’Keefe, & O’Keefe, 1982), and (d) social evaluation, or the fear of not being able to remember the information when recall is required, particularly for evaluative purposes (Ayres, Wilcox, & Ayres, 1995).

Receiver apprehension has been associated with several negative outcomes, most of which seem to be related to reduced listening effectiveness and information processing (Preiss, Wheeless, & Allen, 1990). Especially relevant to the current study is the finding that RA has been associated with lower short- and long-term recall (Daniels & Whitman, 1979; Roberts, 1986), lower student scores on achievement tests (Scott & Wheeless, 1977), lower self-reported GPAs (Schrodt, Wheeless, & Ptacek, 2000), and lower self-reported cognitive learning (Chesebro & McCroskey, 2001). Students who are experiencing receiver apprehension may be less able to process information adequately and, therefore, less able to learn the course material sufficiently. Impairment of learning by RA is especially likely when messages are highly complex, when processing motivation is high, and when the result of information processing must be displayed and evaluated by others for information-processing defects (Ayres et al., 1995). In addition, students with RA appear to be less motivated to learn (Chesebro & McCroskey, 2001; Schrodt et al., 2000) and are less likely to have positive affect for their instructor and the course (Chesebro & McCroskey, 2001). Wheeless et al. (1997) conclude that “less receptive, informationally apprehensive receivers display an orientation to the information environment characterized by alienation, frustration, and intolerance for ambiguity” (p. 179).

Sparse research exists regarding treatment of RA. Wolvin and Coakley (1985) posit that individuals with RA may need to learn to relax in order to listen effectively. Ayres et al. (1995) suggest that apprehensive listeners might be treated by teaching them how to cope with complex messages. Only recently have scholars attempted to identify strategies that the teacher might use to help reduce receiver apprehension in the instructional context. Chesebro and McCroskey (1998) found that high levels of teacher clarity and immediacy, especially when used simultaneously, may be effective in reducing RA in the classroom. A later study by Chesebro and McCroskey (2001) suggested that clear and immediate teaching may largely overcome the negative effects of receiver apprehension. Since teacher confirmation likewise functions to enhance student affect, the current study examined the possibility that increased teacher confirmation is yet another strategy that may be effective in reducing RA. The following hypothesis was advanced:

H: There is an inverse relationship between perceived teacher confirmation and state receiver apprehension.

Further, given the findings discussed above regarding the negative learning outcomes
of receiver apprehension, coupled with previous findings concerning the positive relationship between teacher confirmation and learning (Ellis, 2000), it is reasonable to inquire about the simultaneous direct and indirect effects on learning of these several instructional variables. Thus, the following research question was posed:

RQ3: What are the relationships, direct and indirect, among perceived teacher confirmation behavior, state receiver apprehension, state motivation to learn, affective learning, and cognitive learning?

Method

Respondents and Data Collection Procedures

The second sample consisted of a separate set of 358 undergraduate students enrolled in general education classes (104 men, 248 women, 6 unreported). Participants ranged in age from 18 to 62 years ($M = 22.4$ years). They reported a range of ethnic backgrounds (273 Caucasians, 26 Asians/Pacific Islanders, 24 Hispanics, 13 African Americans, 3 Native Americans, and 19 others) and college class standing (113 freshmen, 131 sophomores, 66 juniors, 46 seniors, 2 unreported). Twenty-eight different academic majors were represented. Participation was voluntary and anonymous, and no extra credit was given for participation.

Using the data-gathering procedures employed in Study I, respondents in the second study evaluated 129 different classes. For 117 participants, the subject of their evaluation was a male instructor; 236 rated female instructors. The classes referenced by participants ranged in size from fewer than 20 (12%) to more than 100 (5%) students. Three-quarters were comprised of 21–60 students. Forty-one percent of the respondents indicated that they were taking the course they evaluated as a general education requirement, 36% were taking the course as a requirement for their major, and 23% were taking the course as an elective.

Measurement

Teacher confirmation. As in Study I, The TCS developed by Ellis (2000) was used. The reliability in the second study, as indicated by Cronbach’s alpha, was .95, with subscale reliabilities of .81 for teachers’ response to students’ questions, .86 for demonstrated interest, .82 for teaching style, and .91 for disconfirmation. Exploratory factor analysis based on principal-components extraction suggested a single-factor solution with all items loading highest on the first unrotated factor (McCroskey & Young, 1979). This solution produced an eigenvalue of 16.37, which explained 60.6% of the variance. Loadings ranged from .54 to .74.

Receiver apprehension. The State-Receiver Apprehension Test (SRAT) was originally developed by Schumacher and Wheeless (1997) to measure state-receiver anxiety experienced in response to interpersonal communication interaction. For the present study, the SRAT was adapted for use in the classroom to measure state-receiver apprehension experienced in response to the teacher’s communication. The SRAT is
a 12-item, 5-step Likert scale. Results of exploratory factor analysis using principal-component extraction indicated that with the exception of one item, all items loaded highest on the first, unrotated solution. Following procedures recommended by McCroskey and Young (1979), the aberrant item (“I have no fear of listening and adjusting to the teacher’s views”) was deleted. This resulted in a single-factor solution, which produced an eigenvalue of 6.73, accounting for 61.2% of the variance. Loadings ranged from .58 to .78. The scale reliability in previous studies has ranged from .85 to .91. In the current study, Cronbach’s alpha was .90.

State motivation. Richmond’s (1990) motivation scale was used to measure students’ state motivation. Students were asked to describe how they felt about the course in general on five, 7-step bipolar scales: motivated–unmotivated, excited–bored, uninterested–interested, involved–uninvolved, dreading it–looking forward to it. This instrument is an expansion of a 3-item instrument used by Beatty, Forst, and Stewart (1986). The scale reliability in previous studies has ranged from .88 to .94. Cronbach’s alpha in the current study was .94. As a validity check for this instrument, a Pearson correlation was conducted between total scores on the scale and the single item, “On a scale of 0–9, how motivated were you in this course, with 0 meaning that you were not motivated at all, and 9 meaning that you were more motivated than in any other class you’ve had.” Results revealed a strong positive correlation of \( r = .74 \) (\( p < .001 \)) indicating 55% shared variance between the two measures. Exploratory factor analysis using principal-components extraction revealed a single-factor solution with an eigenvalue of 4.12, which accounted for 82.4% of the variance. Loadings ranged from .86 to .94.

Affective learning. Krathwohl, Bloom, and Masia (1964) asserted that affective learning emphasizes a “feeling tone, an emotion, or a degree of acceptance or rejection … [often] expressed as interests, attitudes, appreciations, values, and emotional sets or biases” (p. 7). This type of learning was operationalized as the student’s score on the widely used 12-item affective learning instrument introduced by Scott and Wheeless (1975), further developed by Anderson (1979), and expanded and refined by McCroskey, Richmond, Plax, and Kearney (1985). The McCroskey et al. version has been used in many recent studies on affective learning. The instrument assesses students’ attitudes toward (a) the course content, (b) the course instructor, and (c) the behaviors recommended in the course. Each of these objects is evaluated through four 7-step semantic differential scales: good–bad, worthless–valuable, fair–unfair, and positive–negative. Exploratory factor analysis using principal-components extraction indicated a single-factor solution, which produced an eigenvalue of 8.19, accounting for 68.3% of the variance. Loadings ranged from .75 to .89. The scale reliability for the 12 items has ranged from .91 to .98 in previous studies. In the present study, Cronbach’s alpha was .96.

A second measure of affective learning consisted of a single item which read, “On a scale of 0–9, how much did you like the class, with 0 meaning that you did not like it at all and 9 meaning you liked it more than any other class you’ve had?”
The Pearson correlation between the McCroskey et al. scale and the single item was .75.

Cognitive learning. According to Bloom, Engelhart, Furst, Hill, and Krathwohl (1956), cognitive learning refers to “recall or recognition of knowledge and the development of intellectual abilities and skills” (p. 7). In the present study, cognitive learning was measured by two instruments. The first instrument consisted of the first item of the two-item measure introduced by Richmond, McCroskey, Kearney, and Plax (1987). This measure, which asks students to provide a self-report of their learning, has been widely used by instructional communication researchers for more than a decade and recently demonstrated a moderately strong correlation between students’ performance on a recall test and reports of how much they believed they learned during a lecture (Chesebro & McCroskey, 2000). The item read, “On a scale of 0–9, how much did you learn in the class, with 0 meaning you learned nothing and 9 meaning you learned more than in any other class you’ve had?” (M = 6.23, SD = 2.06).

The second measure of cognitive learning was the 7-item Revised Cognitive Learning Indicators Scale (Frymier & Houser, 1999). This scale is a refined version of one originally developed by Frymier, Shulman, and Houser (1996). Exploratory factor analysis using principal-component extraction indicated a single-factor solution that accounted for 60.2% of the variance (eigenvalue = 4.21). Loadings ranged from .71 to .84. In the current study, reliability as indicated by Cronbach’s alpha was .89. The Pearson correlation between the Revised Learning Indicators Scale and the Richmond et al. (1987) single item was $r = .58$, $p < .01$, indicating 34% shared variance between the two measures.

Results

Perceived Teacher Confirmation and Receiver Apprehension

The hypothesis advanced for this study posited that a negative relationship exists between perceived teacher confirmation and receiver apprehension. A multiple regression analysis was used to test this hypothesis. Receiver apprehension was the dependent variable, and perceived teacher confirmation and the control variables of gender of student, ethnicity, age, academic major, reason for taking the class, and gender of the instructor were predictor variables. The resulting regression equation yielded a Multiple $R$ of .73, $F(11, 332) = 33.88$, $p < .0001$. Adjusted $R^2$ was .51, indicating that 51% of the variance in receiver apprehension could be attributed to the combination of variables included in the equation. The partial correlation for teacher confirmation behavior was $- .71$, $t(32) = 18.17$, $p < .0001$, suggesting that after controlling for all the other independent variables in the equation, 50% of the variance in receiver apprehension was uniquely explained by perceived teacher confirmation behavior. Thus, the hypothesis was strongly supported.
The Learning Model

The third research question called for an examination of the relationships, direct and indirect, between perceived teacher confirmation, receiver apprehension, motivation, affective learning, and cognitive learning. Latent variable path analysis using structural equation modeling (LISREL 8.5; Jöreskog & Sörbom, 2000) was employed to address this question. The fit of a proposed theoretical model was assessed by using goodness-of-fit indices that measure the difference between the covariance matrix predicted by the model and that resulting from the sample data. Goodness-of-fit index levels beyond .90 signal a good fit (Bentler & Bonett, 1980).

Prior to analysis, data were examined to assess the tenability of the statistical assumptions for structural equation modeling. Examination of descriptive statistics, histograms, and scatterplots indicated linearity of data but moderate multivariate skewness (18.63, p < .05), indicating that the data were multivariate nonnormal. However, research has indicated that the potential effect of nonnormality is that most fit indices “underestimate” model fit in that instance, and fit indices should be considered lower bound measures (Hu, Bentler, & Kano, 1992; Hutchinson & Olmos, 1998). Hence, because violation of the normality assumption did not increase the chance for Type I error, the analysis was conducted.

The fit of the model depicted in Figure 1 was tested. A covariance matrix was used as input with maximum-likelihood estimation. For each latent variable, dimension or scale scores were used as indicators as well as the single-item measures for motivation, affective learning, and cognitive learning. This resulted in a total of 12 indicators for the structural model.

Results indicated that the proposed structural model fit the data quite well, $\chi^2 (42, n = 358) = 110.75$, $p < .01$. All goodness-of-fit indices far exceeded the recommended levels. Specifically, the two indices that are insensitive to sample size, the Non-Normed Fit Index (NNFI) and the Comparative Fit Index (CFI), were .97 and .98, respectively. The Goodness-of-Fit Index (GFI) was .95, suggesting that 95% of the variance in the covariance matrix could be explained by the model. As Figure 1 indicates, the loadings of all indicators onto their respective latent variables were significant and large in magnitude, ranging from .66 to .91.

Figure 1 reveals that four of the beta paths included in the model were very strong and statistically significant, ranging from −.84 to .99. Three paths were weak and nonsignificant: the path between teacher confirmation and motivation, the path between teacher confirmation and affective learning, and the path between receiver apprehension and affective learning. These weak direct paths can be better explained by six very large and significant indirect effects of (a) teacher confirmation on motivation (.94), (b) teacher confirmation on affective learning (.52), (c) teacher confirmation on cognitive learning (.70), (d) receiver apprehension on affective learning (−.99), (e) receiver apprehension on cognitive learning (−.99), and (f) motivation on cognitive learning (.99). Thus, this study indicates that the effect of teacher confirmation on motivation and on both affective and cognitive learning is not direct. Rather, the effect of confirmation on motivation, affective learning, and
Figure 1 Path model with standardized parameter estimates for the relationships between teacher confirmation, receiver apprehension, motivation, affective learning, and cognitive learning (n = 356). *p < .01.
cognitive learning is mediated through receiver apprehension. The effect of motivation on cognitive learning is mediated through affective learning. The effect of receiver apprehension on cognitive learning, however, is both direct and indirect.

Discussion

Study II makes two important contributions to our knowledge of teacher confirmation. First, the results clearly support early theorists’ claims of confirmation’s significant impact on interpersonal relations (Buber, 1957; Cissna & Sieburg, 1981; Laing, 1961; Watzlawick et al., 1967). The large direct effect of teacher confirmation on student receiver apprehension and the large indirect effects on motivation, affective learning, and cognitive learning attest to the importance of this variable. One may reasonably ask, however, how teacher confirmation differs from teacher immediacy, another instructional variable that has exhibited a similar impact in previous studies. Although Ellis (2000) demonstrated that the two constructs are not completely redundant, I propose that confirmation includes immediacy. Of course, the present study offers no empirical evidence to evaluate this proposal. Yet, given the potency of teacher confirmation reported here, it is not unreasonable to speculate that confirmation may not only be the underlying latent variable of immediacy, but also may be linked to several other affective variables that appear in instructional communication literature. All are conceptually and empirically overlapping, yet all are important and contribute to our knowledge of behaviors that characterize effective teaching.

Second, this investigation underscores the importance of including receiver apprehension as a significant component in a learning model. It supports theoretical work on receiver apprehension in that the strength and direction of the paths between the latent variables included in the model reflect theorized causes of receiver apprehension. Specifically, the strong direct path between RA and cognitive learning (−.84, p < .05) may be the result of receiver apprehensives’ impaired ability to process information (Beatty, 1981; Beatty & Payne, 1981). Although the present study offers no direct empirical evidence of the mechanism by which cognitive processing can be impaired by apprehension, the effect may be due to impoverished schemata for processing information strategically (Delia et al., 1982), or perhaps due to fear that one may not be able to remember the information when recall is required for an exam or other assessment of learning (Ayres et al., 1995). The particularly strong path linking receiver apprehension to motivation (−.99, p < .05) may be a reflection of psychological comfort or discomfort in listening to the messages the teacher sends. Also of major theoretical significance are the indirect effects identified in this research. Teacher confirmation does not have significant direct effects on any variable included in the model except receiver apprehension. Rather, the effects of teacher confirmation on motivation, affective learning, and cognitive learning are all mediated through receiver apprehension. Further, the effect of receiver apprehension on cognitive learning is both direct and indirect.
Conclusions, Studies I and II

The results of the two studies reported in this article enhance our knowledge of the confirmation construct and how it operates within the instructional process. First, we can expect that when we demonstrate the teacher behaviors delineated in the Teacher Confirmation Scale, our students will feel confirmed. Second, it appears that no hierarchy of confirmation behaviors exists. All confirmation behaviors evoke a high degree of confirmation feelings in our students. Third, this research demonstrates that one way that teacher confirmation appears to operate during instruction is by reducing receiver apprehension. This, in turn, positively influences state motivation to learn, affective learning, and cognitive learning. The strengths of the relationships and beta paths in this study are also worthy of mention. They speak to the importance of the confirmation construct in the instructional setting.

It is also important to note that only a few of the teacher behaviors reflected in the TCS instrument are aimed at the class as a whole (e.g., incorporates exercises into lectures; uses a variety of teaching techniques to help students understand course material). Most teacher confirmation behaviors focus on personalized interaction with individual students (e.g., takes time to answer students’ questions fully; is rude in responding to some students’ comments or questions). This supports recent research by Frymier and Houser (2000) that the teacher–student relationship is driven by both relational and content-related communication and should be viewed as an interpersonal relationship. As such, both teachers and students have goals they wish to achieve (Graham, West, & Schaller, 1992). For college teachers, our goals are usually to facilitate student learning of course content and to have a satisfying relationship with our students. For students, however, goals may be more far-reaching. For example, many students may be striving to find out who they are, where they fit in, whether they should major in the particular discipline, and even whether they can succeed in college in general. In short, many students are discovering and establishing their identities as adults during their college years. The accomplishment of such identity development tasks may be one reason why teacher confirmation plays such a vital role in the teaching and learning process. Reflecting on Buber’s (1957) and Laing’s (1961) early theoretical writings, the role of confirmation is to help individuals discover and establish their identities and personal significance as human beings. This may also be one reason why Frymier and Houser (2000) found that ego support, a construct that is conceptually similar to confirmation, was one of two communication skills that was both most important to students and most predictive of learning. Frymier and Houser’s finding, in combination with the findings of the current study, underscores the importance of continuing research on teaching as an interpersonal relationship.

Regarding limitations of this research, it is important to remember that this investigation was nonexperimental. Statements of causality based on the results of even the most sophisticated statistical techniques for making causal inferences, including the latent variable path analysis used in this study, must be treated with caution. Nonetheless, the strength of the beta paths and effects, direct and indirect,
the strength of the relationships, and the large amount of variance in receiver apprehension that can be explained by teacher confirmation cannot be ignored.

Other limitations include the widely recognized problem of operationalizing cognitive learning. Kearney and Beatty (1994) noted, “no completely valid means of measuring cognitive learning exists” (p. 8). Research in instructional communication, including the present study, needs to progress beyond one- and two-item measures and indicators of cognitive learning to a more thorough operationalization. In addition, the current research assumes that all students react in the same way to particular teacher behaviors, when indeed we know from the immediacy research that such is not the case (Frymier, 1993a, 1993b). More research is needed to clarify the influence of teacher confirmation on students with varying individual characteristics such as differing levels of trait motivation to learn and communication apprehension. Research is also needed to explore the impact of teacher confirmation on other educational outcomes, such as student satisfaction and retention.

In sum, the primary job of a teacher is to foster learning. Given the movement toward greater accountability in higher education and relentless external pressure to increase instructional quality, it is important that we identify teacher behaviors that contribute to that end. Teacher confirmation appears to be one such variable. Not only do the possibilities for productive research regarding this crucial variable provide a rich future research agenda, but the translation of research findings into everyday practice seems promising.

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