RECONCEPTUALIZING TEACHER-STUDENT RELATIONSHIPS

Applicability of the Working Alliance within Classroom Contexts

ABSTRACT

Relationships with teachers have been found to be particularly salient for elementary-age students, as they relate to successful adjustment to school. The construct of working alliance reconceptualizes traditional definitions of relationship to consider elements of emotional connection, as well as the collaboration central to the working relationship between two individuals. The current study sought to examine the construct validity of the Classroom Working Alliance Inventory (CWAI). Multilevel confirmatory factor analyses supported a two-factor model, representing the emotional and collaborative elements of relationship. These findings provide evidence for the validity of the construct of classroom working alliance in capturing the working relationship between teacher and student.

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SCHOOL and classroom environments play a central role in children's development, and interactions within these contexts are critical to our understanding of student well-being and positive adjustment (Masten & Coatsworth, 1998; NICHD-ECCRN, 2002, 2004). A relationship with a teacher can be an important source of security and stability for students (Birch & Ladd, 1998; Pianta, La Paro, Payne, Cox, & Bradley, 2002; Wentzel, 2002). These relationships have been found to enhance children's social and emotional well-being, academic performance, and their sense of belonging (e.g., Beck & Malley, 1998; Hamre & Pianta, 2001; Hughes, Cavell, & Wilson, 2001; Murray & Greenberg, 2001). It has been

argued that children who have positive relationships with their teachers are able to acquire skills and knowledge more easily through participation and engagement in the classroom (e.g., Buhs, Ladd, & Herald, 2006; Diperna, 2006; Hamre & Pianta, 2001). Additionally, it has been shown that students with higher-quality relationships are better able to communicate effectively in instructional exchanges by using their teachers as a secure base from which to explore their surroundings (e.g., Birch & Ladd, 1997; Pianta, 1994).

Employing a definition of the quality of relationship between teacher and student as a bond, connectedness, closeness, and lack of conflict, teacher-student relationship was been thought to be associated with myriad positive outcomes for children. Indeed, the results of a number of investigations conducted with students at various developmental stages indicate that the quality of the teacher-student relationship is associated with overall adjustment in psychosocial, behavioral, and academic domains (e.g., Baker, 1999; Hamre & Pianta, 2001; Ladd, Birch, & Buhs, 1999; Murray & Malmgren, 2005; Wentzel, 2002).

Measurement of Relationship Quality

In reviewing the literature on teacher-student relationships, there appear to be inconsistencies related to issues of measurement that make interpretation of these findings difficult. First, there are a number of ad hoc scales used to measure the quality of relationship in various studies. Teacher-student relationships have typically been measured either as a subdimension embedded in a larger scale of social support (e.g., Baker, 1999; Malecki & Demaray, 2002) or as a single dimension, but based on single items extracted from scales such as school satisfaction, student behavior, or motivation (e.g., Blankemeyer, Flannery, & Vazsonyi, 2002; Ryan & Patrick, 2001). The difficulty with this method of assessment is that the quality of relationship is then defined in terms specific to the theories from which these measures were derived. For example, teacher-student relationship becomes defined simply as social support and fails to capture the many other aspects of classroom interactions. At this time, only two validated scales exist that serve as independent measures of teacher-student relationship: the Student-Teacher Relationship Scale (STRS; Pianta, 1992) and the Teacher-Student Relationship Inventory (TSRI; Ang, 2005).

This leads us to a second issue; although these scales have been used extensively in research, they employ a specific definition of relationship. In past research, teacher-student relationships have been measured largely as the degree to which teachers or students feel that there is a liking, trust, connectedness, or a general absence of conflict (e.g., Baker, 1999; Birch & Ladd, 1997). Although it is important to encourage teachers to foster these connections with their students, there are instances when the individual personalities or attitudes of students and teachers may make it difficult for this bond to develop. It can be challenging to teach someone how to "like" or "trust" or "connect with" a student. Further, it could be argued that teacher-student relationships require a broader conceptualization due to the nature of the classroom environment—the fact that this is not a social or personal but a *working* relationship that needs to develop between teacher and student. When relationship is defined exclusively as an emotional connection (e.g., liking, bond), we may be overlooking the potential difficulties that teachers and students have in forming these connec-

tions. Therefore, the characteristics tapped by current definitions of teacher-student relationship (e.g., emotional connections) should be understood as one essential element of an effective working relationship. In the counseling context, the working relationship has been termed the "working alliance."

Working Alliance

The construct of working alliance has been extensively studied and validated. In essence, alliance refers to the quality and strength of the collaborative relationship (Horvath & Bedi, 2002). Research has demonstrated that quality of the relationship, or "alliance," between client and counselor is one of the best predictors of positive outcome in psychotherapy (e.g., Barber, Connolly, Crits-Cristoph, Gladis, & Siqueland, 2000; Green, 2006; Horvath, 2000; Joyce, Piper, & Ogrodniczuk, 2007; Martin, Garske, & Davis, 2000; Norcross, 2002).

Bordin (1979) conceptualized the working alliance as consisting of three interdependent components: bond, task, and goal. The aspect of bond represents the emotional component of a relationship and includes positive attachments based on mutual trust, liking, respect, and caring—elements that have been well elaborated in the teacher-student relationship literature. The notion of working alliance also encompasses more collaborative and cognitive aspects of relationship. Task can be envisioned as the understanding and agreement of task relevance, and willingness to complete tasks that relate to goals. Finally, goal is considered the degree to which both parties develop shared objectives, and how they consider the client's individual needs.

A number of instruments have been developed to measure aspects of the therapeutic alliance. The most frequently used of these, the Working Alliance Inventory (WAI; Horvath & Greenberg, 1986, 1989), has been shown to be a reliable measure of alliance. It has subscales that measure the three components of alliance that are central to the definition proposed above: bond, task, and goal. While other scales have been developed to represent the differing theoretical constructs of various schools of psychotherapy, the WAI is pantheoretical, meaning that it allows researchers to measure and compare alliances regardless of the theoretical background and type of interventions used by the therapist. In addition, the scale was constructed to measure alliance from the perspective of both the counselor and client. The construct of alliance provides a clear definition of relationship and captures something unique to the working relationship. Although the WAI would not be suitable in its original form for the examination of teacher-student alliance, there is a clear indication that the construct of working alliance may share some of the features necessary to develop positive teacher-student relationships in the classroom.

Accordingly, the WAI was adapted for use within a classroom setting through modification of the questions for teacher and student respondents, simplification of question complexity for upper-elementary-age students, and reduction of the number of items on the inventory based on the previously validated WAI Short Form (WAI-S; Tracey & Kokotovic, 1989, from Horvath & Greenberg, 1986). The WAI-S was initially validated with a sample of 124 pairs of clients and their therapists, demonstrating internal consistency estimates of the three subscales ranging from .90 to .92 on the client version, and .83 to .91 on the therapist version (Tracey & Kokotovic,

1989). In a review conducted by Hanson, Curry, and Bandalos (2002), reliability generalization was used to examine five versions of the WAI. They found that, for both the client and therapist versions of the WAI-S, internal consistency estimates ranged from .92 to .98 ($M = .95$, $SD = .03$, $n = 3$) and .90 to .95 ($M = .93$, $SD = .04$, $n = 2$), respectively. This instrument, revised for use in classroom contexts, has been administered in several studies to date.

Development of the Classroom Working Alliance Inventory

A study by Toste, Heath, and Dallaire (2010) was the first to employ the Classroom Working Alliance Inventory (CWAI; Heath, Toste, Dallaire, & Fitzpatrick, 2007). This study examined perceptions of 53 students in third through sixth grades (25 female) and classroom teachers ($n = 14$; 11 female) on the CWAI and questions related to students' school performance. Findings supported the need to consider both teacher and student ratings in evaluations of relationship. Results revealed significant correlations between teachers' and students' ratings on the task and bond subscales of the CWAI, indicating that elementary-age children are capable of evaluating their relationships with teachers. In previous studies of teacher-student relationship, students' perceptions have often not been considered alongside those of their teachers, which is likely due to the young age of the students in these samples (e.g., Hamre & Pianta, 2001, 2005; Pianta, 1994). Furthermore, this study reported that students' perceptions of working alliance were significant in predicting both teacher- and self-ratings of classroom performance, whereas teachers' perceptions of alliance only predicted their own ratings of students' performance.

Toste and Heath (2007) further examined the classroom working alliance in relation to students' school satisfaction among 50 elementary students in grades 4 to 6 (17 female) and their teachers ($n = 8$; 7 female). Results revealed that both teacher and student ratings of working alliance demonstrated a significant contribution to the prediction of students' school satisfaction. Not surprisingly, students' perceptions of alliance were more highly related to their satisfaction than those of their teachers. That is to say, students who felt that they had strong, positive working alliances with their teachers were more likely to enjoy and have positive attitudes toward school, engage in classroom experiences, and express affiliation with their schools. Toste, Bloom, and Heath (2014) further examined the differential role of working alliance in predicting specific classroom outcomes among 122 third- through sixth-grade students (80 female) with and without high-incidence disabilities (i.e., learning and/or behavioral difficulties) and their teachers ($n = 17$; 14 female). Teachers reported less positive relationships with students with disabilities than with their peers, although students' reports of working alliance did not differ between those with and without disabilities. Strong working alliance, as rated by the teacher, predicted positive social and behavioral outcomes for all students—but students' ratings of the collaborative elements of alliance (i.e., task/goal) were found to predict greater academic competence and school satisfaction for students with disabilities when compared to their peers.

Despite the promising findings and basic internal consistency reported in these early studies, both utilized quite small samples that made it impossible to further explore the construct validity of the CWAI. In order to consider the use of the CWAI as a meaningful instrument for assessing this broadened conceptualization of

teacher-student relationship, there is a need to first validate its underlying factor structure and investigate this construct as it relates to various indicators of student outcome.

Research Objectives

Thus, the present study seeks to investigate applicability of the construct of working alliance within classroom contexts and the effectiveness of the CWAI as a measure of the working relationship between teachers and students. The primary objective of this study is to assess the fit of one-, two-, and three-factor models of classroom working alliance. To explore this objective, a construct-validation approach was used to substantiate the presumed dimensionality of working alliance. As noted by Pike (2006), construct validity calls for a systematic examination of the extent to which an item relates to other observable variables. Simply put, items that measure the same factor should correlate strongly with one another (convergent validity) while displaying low correlations with those items indexing different factors (discriminant validity; e.g., Kline, 2005). Further, the external validity of the CWAI is observed by exploring its relationship to several variables that are known to be associated with teacher-student relationship (i.e., students' self-perceptions in the academic, social, and behavioral domains).

Method

Participants

The final sample included 430 third-grade students nested within 33 teachers. Participants included 518 students (275 female, 243 male) from seven schools, involved in a large-scale study of classroom instruction in the third grade, in an ethnically and economically diverse north Florida district. Eighty-eight students were no longer participating in the study at the time that the instrument of interest to the current investigation was administered and were removed from the sample. Thus the present study included 430 third-grade students (222 female, 208 male). Fifty-two percent of students were Black, 36% White, and the remaining 12% belonged to other ethnic groups.

Thirty-three teachers (2 male, 31 female) with 1 to 31 years of teaching experience ($M = 10.77$, $SD = 9.97$) participated in the study. The teachers' ethnic background was reported as follows: 67% White, 30% Black, and 3% Hispanic.

Measures

Classroom Working Alliance Inventory (CWAI; Heath, Toste, Dallaire, & Fitzpatrick, 2007). The CWAI is a 12-item questionnaire assessing the teacher-student relationship using a 5-point Likert scale. Parallel teacher and student forms are used (CWAI-T and CWAI-S, respectively), in order to tap both perceptions of relationship. Questions for both version of the CWAI are presented in Table 1.

This inventory consists of the three subscales (four items each) that represent the critical components of alliance: bond, task, and goal. The Bond subscale captures the respect, liking, and trust between the teacher and the student. For example, this subscale includes items such as "I believe my teacher likes me" on the student version

Table 1. CWAI Original Subscale Items

	Classroom Working Alliance Inventory—Teacher Version
Bond	I believe _____ likes me.
	I am confident in my ability to help _____ at school.
	I enjoy working with _____.
	_____ and I trust one another.
Task	_____ and I agree about the things he/she needs to do to improve his/her schoolwork.
	I am confident that what _____ is doing in school will help him/her learn better in the areas that he/she has difficulty.
	I think _____ and I agree on what is important for him/her to work on.
	I believe that what I work on in school with _____ is useful.
Goal	I believe that _____ and I agree on what he/she needs to get out of school (what he/she needs to learn and why).
	We are working towards goals that we have agreed upon together.
	_____ and I agree about what his/her difficulties are.
	We agree about what _____ needs to do differently in school.
	Classroom Working Alliance Inventory—Student Version
Bond	I believe _____ likes me.
	I am confident that _____ can help me at school.
	I feel that _____ enjoys working with me.
	_____ and I trust one another.
Task	_____ and I agree about the things I need to do to help me improve my schoolwork.
	What I am doing in school helps me learn better in the areas that I have difficulty.
	We agree on what is important for me to work on.
	I believe that what I work on in school with _____ is useful.
Goal	_____ understands what I want to get out of school (what I want to learn at school and why).
	_____ and I are working towards goals that we both agree on.
	_____ and I agree about what my difficulties are.
	We agree about what I need to do differently in school.

or "I enjoy working with _____" on the teacher version. The Task subscale focuses on the agreement and understanding of task relevance within the classroom setting. This subscale taps whether teachers and students feel that the tasks assigned in the classroom are relevant to the student's individual learning (e.g., "What I am doing in school helps me learn better in the areas that I have difficulty") and whether the teacher feels that these tasks will help the student achieve success (e.g., "_____ and I agree about the things I need to do to help improve his/her schoolwork"). Finally, the Goal subscale measures the extent to which the teacher and student feel that they are collaborating on the goals set within the classroom. This subscale is tapping the teachers' and students' agreement and mutual understanding about classroom objectives (e.g., "My teacher and I agree about what my difficulties are" or "We are working towards goals that we have agreed upon together").

Previous research employing the CWAI has demonstrated moderate internal consistency for all three subscales, with Cronbach's alpha levels ranging from .76 to .91 on the teacher scale and .59 to .71 on the student scale (Toste, Heath, & Dallaire, 2010). However, internal consistency was assessed with fairly small samples; as such, the stability of these findings and the CWAI's ability to support the assumed factor structure are unclear.

Self-Perception Profile for Children (SPPC; Harter, 1985). The SPPC was used to assess variables in domains that have been previously shown to be correlated with teacher-student relationship. This self-report scale is designed to assess the domain-specific self-perceptions in children between the ages of 8 and 13. The SPPC comprises 36 questions; for each item, children are first asked to select which of two statements, describing different types of children, is most like them, and then they must specify whether it is somewhat or very characteristic of themselves (*sort of true* or *really true of me*). For example, "Some kids often forget what they learn BUT other kids can remember things easily." Responses are scored on a four-point scale with higher scores indicating greater perceptions of competence in that domain.

The SPPC taps six domains: Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Behavioral Conduct, and Global Self-Worth. The analyses in the present study examine self-perceptions in three domains: Scholastic Competence, which taps the child's perception of their ability within the realm of academic performance; Social Acceptance, which taps the degree to which one has friends, feels popular, and feels liked by others; and Behavioral Conduct items that draw on the degree to which children like the way they behave or act in ways they are supposed to. Subscale reliability results range from .71 to .86 (Harter, 1985).

Procedure

Data were collected within the context of a larger research project related to classroom instructional practices. All third-grade classroom teachers at the seven schools participated in the study and were randomly assigned as treatment or alternative treatment control classes. For the 33 classrooms with participating teachers, parental permission was sought for students to complete assessments, with an overall consent rate of 78%. Children were administered the CWAI-S and SPPC during winter 2009 to ensure that there had been adequate time to form a relationship. This session lasted approximately 30 minutes and was completed on an individual basis with each participating student by a trained research assistant. Due to the young age of the participants, research assistants read each item aloud to the students in order to maintain standardization and ensure comprehension.

Teachers were asked to complete the CWAI-T for each participating student in their classes. Questionnaires were completed independently by teachers and returned to the project coordinator. Completion of these instruments was included within the context of the larger project and teachers were compensated for participation.

Results

The objectives of this study were to test the factor structure of the teacher and student versions of a measure of working alliance applied to the classroom context (i.e., CWAI) and examine its relationship with a set of theoretically relevant variables. Two sets of analyses were performed to address these objectives: multilevel confirmatory factor analyses to test the factor structure, and correlational analyses to determine the relationships with other variables. Descriptive statistics are presented in Table 2.

Table 2. Descriptive Student Information

Variables	*M*	*SD*
CWAI-Student:		
Total score (mean)	4.14	.58
Bond subscale	4.35	.75
Task subscale	4.16	.67
Goal subscale	3.93	.77
CWAI-Teacher:		
Total score (mean)	4.31	.67
Bond subscale	4.49	.63
Task subscale	4.22	.76
Goal subscale	4.21	.72
Self-Perceptions (SPPC):		
Scholastic Competence	2.82	.65
Social Acceptance	2.76	.64
Behavioral Conduct	2.90	.69

Note.—Mean scores are presented for the CWAI subscales (range 1.00–5.00) and the SPPC subscales (range 1.00–4.00).

Factor Structure of the CWAI

We used confirmatory factor analysis (CFA) to test the underlying factor structure and internal consistency of the CWAI. Byrne (2006) states that it is appropriate to conduct a CFA for a measuring instrument if previously validated. As mentioned, the CWAI has been developed based on the WAI-S, which has been developed and validated for use in counseling settings. Although the questions were modified on the CWAI, a similar hypothesized factor structure was maintained and, as such, meets this requirement for the use of CFA. We sought to test one-, two-, and three-factor models to explain the structure of both the teacher and student versions of the 12-item CWAI. The three-factor structure aligned with the subscales of the WAI-S (bond, task, and goal). Based on the conceptualization of working alliance as including emotional and collaborative aspects of relationship, we also test a two-factor structure that merges the two collaborative subscales (bond and task/goal). And, finally, we test a one-factor structure that considers all items representing the unitary construct of working alliance.

Prior to conducting analyses, assumptions of normality were evaluated. Kline (2005) suggests using absolute cut-off values of 3.0 for skewness and 8.0 for kurtosis for all items. CFA does not necessarily confirm a model as correct, but simply demonstrates that the data fit with a tested model (Klem, 2000). As such, alternative models were tested for each version of the CWAI: one-, two-, and three-factor models. More precisely, one-factor (i.e., working alliance), two-factor (i.e., bond and task/goal), and three-factor (i.e., bond, task, and goal) models were tested for the CWAI-T and CWAI-S. Because our data were nested within teachers, we used multilevel modeling with Mplus 6.12, with level 1 indicating the student level and level 2 the teacher level. Type = Complex was used for this analysis (Muthén & Muthén, 2014) to account for the fact that there is likely to be shared variance due to students being in the same classroom and having the same reporter.

Teacher version. To ensure that the conditions of normality were met for the CWAI-T model, the normalized estimate was used to examine multivariate kurtosis. Bentler (2005) suggests that values greater than 5.00 are indicative of non-normally

Table 3. Overall Fit Statistics for Classroom Working Alliance Inventory—Teacher (CWAI-T)

	Models		
Measures of Fit	One-Factor	Two-Factor	Three-Factor
S-B χ^2	220.51	173.97	172.92
Df	.54	.53	.51
p-value	<.001	<.001	<.001
CFI	.92	.94	.94
TLI	.91	.93	.93
RMSEA	.09	.07	.08
AIC	7165.95	7057.17	7058.08

Note.—CFI = comparative fit index; TLI = Tucker Lewis index; RMSEA = root mean square error of approximation; AIC = Akaike information criterion. The final two-factor model for the CWAI-T is presented in Figure 1.

distributed data. As such, the value of 122.33 indicated the need to use the LM robust estimation method.

Model fit was evaluated by examining a number of model fit indices (Hu & Bentler, 1999; Kline, 2005). Specifically, we examined S-B χ^2 (Satorra-Bentler scaled chi-square), CFI (comparative fit index), TLI (Tucker Lewis index), and RMSEA (root mean square error of approximation). It is considered desirable model fit if S-B χ^2 is not significant, CFI and TLI are larger than .90, and RMSEA is smaller than .08. To compare different models, we chose two indices. First, the chi-square difference test ($\Delta \chi^2$); if $\Delta \chi^2$ is not significant, the most parsimonious model should be chosen. The other was AIC (Akaike information criterion), with the lower values indicating better fit (Kline, 2005).

As Table 3 shows, for the one-factor model, the overall fit indices were acceptable: S-B χ^2 (54, $N = 430$) = 220.51, $p < .001$, CFI = .92, TLI = .91, and RMSEA = .09. The model testing the two-factor structure of the CWAI-T also resulted in good overall fit: S-B χ^2 (53, $N = 430$) = 173.97, $p < .001$, CFI = .94, TLI = .91, and RMSEA = .07. In testing the validity of the three-factor structure of the CWAI-T, findings were consistent in revealing good overall fit: S-B χ^2 (51, $N = 430$) = 172.92, $p < .001$, CFI = .94, TLI = .93, and RMSEA = .08. Generally, all three models showed a relative good fit. While a nonsignificant chi-square indicates good model fit with the data, this statistic is known to be sensitive to sample size and must be interpreted in combination with other fit indices (Byrne, 2006; Kline, 2005). The two-factor model and the three-factor model were better than the one-factor model (e.g., RMSEA of the two-factor and the three-factor models was smaller than the one-factor model). The chi-square differences between the one-factor model and the other two models were significant ($\Delta \chi^2 = 46.54–47.59$, $p < .001$), and the two-factor was more parsimonious than the three-factor model (e.g., the AIC of the two-factor model was smaller than that of the three-factor model). The chi-square difference between the two- and three-factor models was not significant ($\Delta \chi^2 = 1.05$, $p = .59$). Therefore, the two-factor model was deemed to be the most appropriate for the CWAI-T based on the model fit indices. This model represents "the one that best fits the data from the perspectives of both parsimony and substantive meaning" (Byrne, 2006, p. 227). Furthermore, the standardized regression weights presented in Figure 1 indicate that each of the CWAI-T items

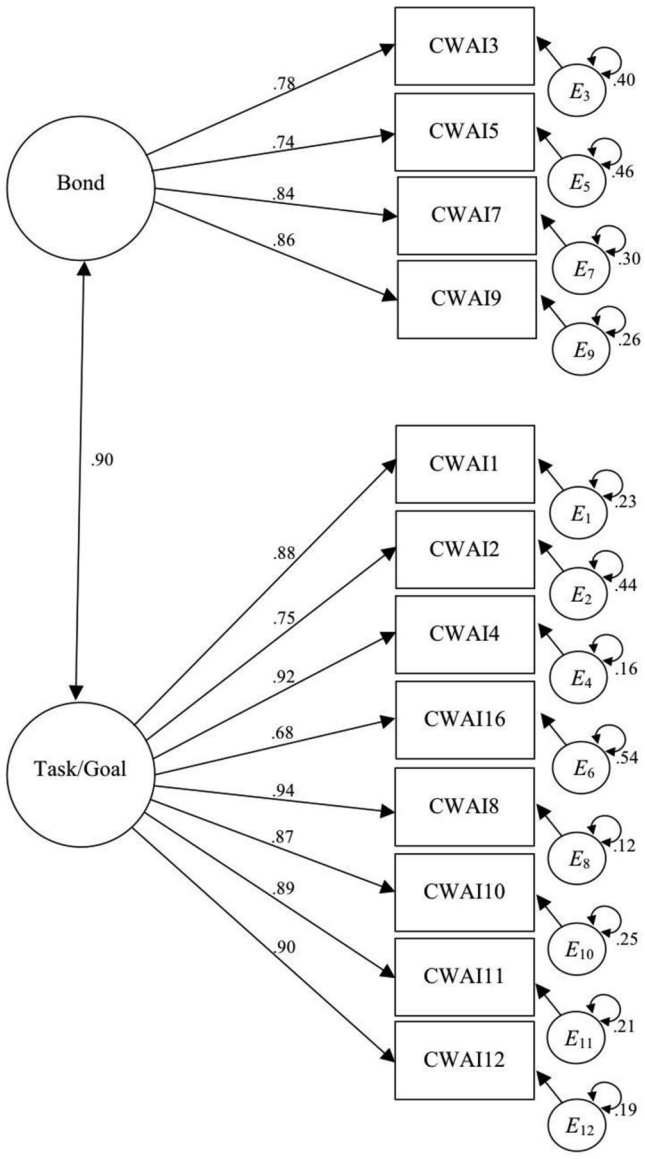

Figure 1. Confirmatory factor analysis (controlling for cluster effects) for the Classroom Working Alliance Inventory—Teacher Version (CWAI-T).

had moderate to high loadings for the tested factors. All loadings were significant at the .05 level. These results provide support that the teacher version of the CWAI corresponds to a structure in which the scale's items assess two distinct factors (i.e., bond and task/goal).

Student version. As with the teacher version of the CWAI, the normalized estimate for the student version was above 5.00 (27.74); thus, the model was respecified using the LM robust method. The one-factor model for the CWAI-S did not reveal a good fit to the data: S-B χ^2 (54, N = 430) = 120.37, $p < .001$, CFI = .89, TLI = .87, and RMSEA = .05. The two-factor structure of the CWAI-S resulted in good overall fit: S-B χ^2 (53, N = 430) = 65.45, p = .12, CFI = .98, TLI = .98, and RMSEA = .02. The findings of the three-factor structure were also consistent in revealing good overall

Table 4. Overall Fit Statistics for Classroom Working Alliance Inventory—Student (CWAI-S)

	Models		
Measures of Fit	One-Factor	Two-Factor	Three-Factor
S-B χ^2	120.37	65.45	63.18
Df	.54	.53	.51
p-value	<.001	.12	.12
CFI	.89	.98	.98
TLI	.87	.98	.97
RMSEA	.05	.02	.02
AIC	14838.43	14772.81	14774.94

Note.—CFI = Comparative fit index; TLI = Tucker Lewis index; RMSEA = root mean square error of approximation; AIC = Akaike information criterion. The final two-factor model for the CWAI-S is presented in Figure 2.

fit: S-B χ^2 (51, N = 430) = 63.18, p =.12, CFI = .98, TLI = .97, and RMSEA = .02. See comparison of model fit indices presented in Table 4.

In line with the previous discussion of the two-factor model considered for the CWAI-T, this model was also deemed to be the better fitting and more parsimonious model for the CWAI-S. More precisely, the two- and three-factor models were better than the one-factor model (e.g., the chi-square differences between the one-factor model and the other two models were significant, $\Delta\ \chi^2 = 54.92–57.19$, $p < .001$), and the two-factor was more parsimonious than the three-factor model (e.g., the AIC of the two-factor model was smaller than that of the three-factor model). The chi-square difference between the two- and three-factor models was not significant ($\Delta\ \chi^2 = 2.27$, $p = .32$). Thus, as with the CWAI-T, the two-factor model for the CWAI-S was deemed to be most appropriate from the perspective of both parsimony and meaning, which will be further discussed later in this article. The items of the CWAI-S had moderate loadings for the hypothesized factors, as indicated by the standardized regression weights presented in Figure 2. All loadings were significant at the .05 level, indicating that the student version also supports the internal structure of the CWAI.

Relationships between Working Alliance and Self-Perceptions

It was of further interest to evaluate the associations between CWAI ratings and a set of variables that have been found to be related to teacher-student relationship in previous studies. Specifically, self-perceptions in the academic, social, and behavioral domains were measured by subscales of the Self-Perception Profile for Children (SPPC). Bivariate Pearson correlations were computed between the total working alliance rating (CWAI), two factors from the CWAI, and the three subscales of the SPPC. Due to the number of correlational analyses being run, a Bonferroni correction was used to set the alpha to a more stringent level of .008.

Table 5 presents correlations related to teacher ratings on the CWAI-T, while Table 6 presents those related to student ratings on the CWAI-S. The factors represented by the CWAI-T—bond and task/goal—were differentially related to students' self-perceptions. Self-perceptions in the scholastic domain were not related to either subscale. However, self-perceptions in the social domain were related to bond,

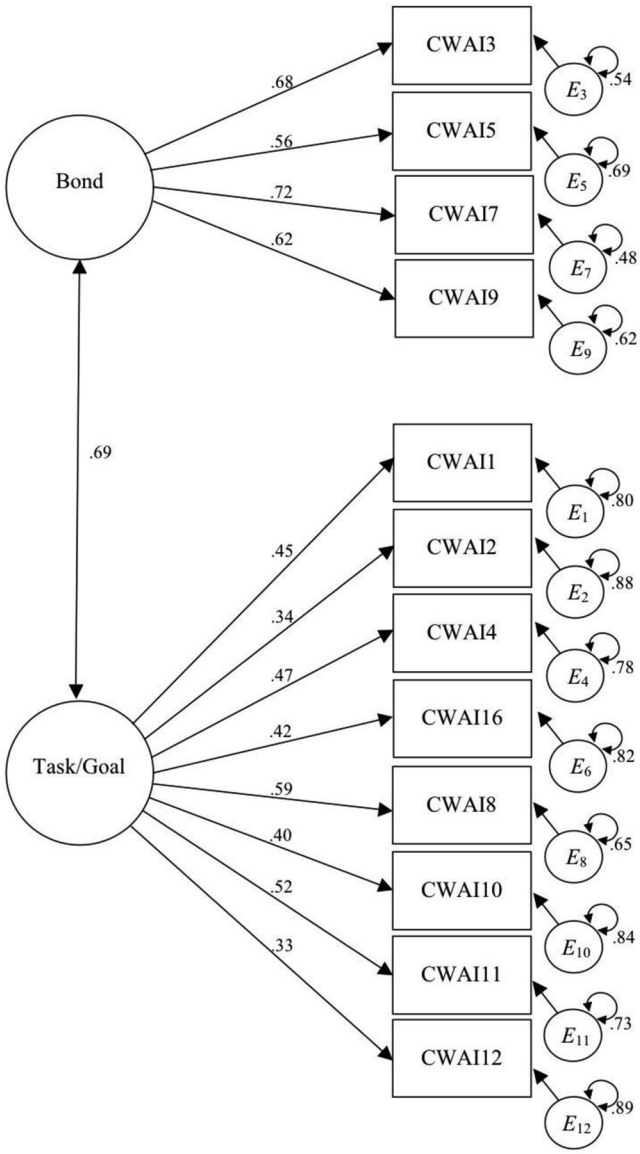

Figure 2. Confirmatory factor analysis (controlling for cluster effects) for the Classroom Working Alliance Inventory—Student Version (CWAI-S)

and self-perceptions in the behavioral domain were related to both bond and task/goal. In examining students' ratings of working alliance, similar to teacher ratings, both subscales of the CWAI-S were related to self-perceptions in the behavioral domain, although only task/goal was found to be significantly associated with perceptions in the scholastic and social domains.

Discussion

A positive relationship with one's teacher is an important factor related to learning and psychosocial outcomes for elementary-age students (e.g., Hamre & Pianta, 2001, 2005; Rey, Smith, Yoon, Somers, & Barnett, 2007). To advance research in this field,

Table 5. Correlations between Teacher Working Alliance Ratings (CWAI-T) and Students' Self-Perceptions

Subscale	1	2	3	4	5
1. Bond [a]	–				
2. Task/goal [a]	.837**	–			
3. Scholastic Competence [b]	.102	.125	–		
4. Social Acceptance [b]	.143*	.100	.500**	–	
5. Behavioral Conduct [b]	.221**	.210**	.332**	.334**	–

[a] Classroom Working Alliance Inventory—Teacher (CWAI-T) subscales.
[b] Self-Perception Profile for Children (SPPC) subscales.
*$p < .008$.
**$p < .001$.

the present study sought to investigate a broader construct of teacher-student relationship—the classroom working alliance. Evidence was found to support the internal consistency and external validity of the Classroom Working Alliance Inventory (CWAI) as a valid measure of teacher-student relationship. The confirmatory factor analyses applied to the 12-item CWAI-T and CWAI-S revealed that both scales solidly measure the two factors that represent the emotional and collaborative aspects of relationship.

The two-factor model was deemed to be the most appropriate for several reasons. For the CWAI-T and CWAI-S, analyses supported slightly better fit for the two-factor model. This also respected the rule of parsimony, the preference for the least complex explanation for an observation or analyzed effect (Kline, 2005). Further, although the working alliance is represented by three indicators, it truly represents two key elements of relationship: emotional connection and collaboration. Bond clearly represents a separate element of relationship—the ability to connect with one another, and mutual liking, trust, and respect that the teacher and student have for one another. Whereas it may be possible to separate the evaluation of tasks and goals in a counseling setting, these elements are often intertwined with the classroom. For example, the perception of collaboration can be enhanced when a student understands the relevance of assigned tasks and how they will help him/her learn, agrees with the teacher about what is important to work on, feels that the teacher understands what he/she wants to learn at school, and sees that the teacher accurately

Table 6. Correlations between Student Working Alliance Ratings (CWAI-S) and Students' Self-Perceptions

Subscale	1	2	3	4	5
1. Bond	–				
2. Task/goal	.480**	–			
3. Scholastic Competence	.122	.136*	–		
4. Social Acceptance	.086	.129*	.500**	–	
5. Behavioral Conduct	.221*	.209**	.332**	.334**	–

[a] Classroom Working Alliance Inventory—Student (CWAI-S) subscales.
[b] Self-Perception Profile for Children (SPPC) subscales.
*$p < .008$.
**$p < .001$.

recognizes his/her areas of difficulty. The interactions that support task agreement will also likely support a perspective of shared goals, and vice versa. For this reason, the two-factor model was believed to more accurately represent the reality of classroom interactions and the development of teacher-student alliance.

Establishing the internal structure of the CWAI signifies an important contribution to the investigation of classroom working alliance. This is the first study to extend our understanding of the teacher-student relationship beyond emotional connection (i.e., bond) to include the collaboration that characterizes a working relationship (i.e., task, goal). These findings provide substantiation for this broader reconceptualization of relationship and evidence that the working alliance captures an important aspect of the classroom context.

In addition, evidence was found to support the internal consistency of both the teacher and student versions of the CWAI. There are two important implications of this finding: the first is that upper-elementary-age students can be reliable reporters of relationships with their teachers, and the second, which follows from the first, is that future examination of ratings from both participants in the relationship is possible with the CWAI. Although the model for the CWAI-S demonstrated good fit to the data, it is interesting to note that the items revealed moderate loadings on the two factors, while the teacher version (CWAI-T) items had high loadings on these same factors. Items that have strong loadings on the same factor provide evidence for being conceptualized as measuring the same construct (Tabachnick & Fidell, 2007). Although all individual item loadings were significant, this finding suggests that there may be a small degree of overlap in the content represented by the two factors on the student version of the CWAI. It may be that, while teachers are able to easily distinguish between these two elements of relationship, students tend to have a generalized sense of the quality of their relationship. That is to say, a student may be more likely to develop an overall perception of the relationship he/she has with a teacher, and this perception could influence the way that he/she perceives both the emotional and collaborative aspects of the relationship. In order to explore differences in how teachers and students understand working alliance, future research must continue to evaluate perceptions of both relational participants.

Ratings of working alliance were examined in association with students' self-perceptions. Interestingly, teacher and student ratings based on bond and task/goal were found to be differentially related to domains of self-perceptions. Specifically, for teacher-rated alliance, bond was found to be related to the self-perceptions in the social and behavioral domains, while task/goal was related only to the behavioral domain. Neither of the factor scores was found to be associated with self-perceptions of academic competence. From these findings, one might posit that teachers' perceptions of their relationships with students are primarily influenced by their observations of classroom behaviors. In considering teachers' attitudes and beliefs, previous studies have reported that teachers tend to prefer children who are cooperative and prosocial, as opposed to those that they perceive to be antisocial and disruptive (Montague & Rinaldi, 2001; Tournaki, 2003). Furthermore, they report having warmer relationships and more supportive interpersonal interactions with students who are less active and disruptive in the classroom (Hamre & Pianta, 2001). The current findings suggest that both aspects of teacher-student working alliance, emotional connection and collaboration, are related to behavioral indicators. It is possible that teachers tend to have stronger emotional connections with students who are

well-behaved and engage in positive social interactions, and that they tend to perceive a stronger sense of collaboration with students who demonstrate appropriate classroom behaviors. However, this requires further investigation as the current study measured students' self-perceptions, which may not necessarily accurately reflect their performance across these domains.

A slightly different pattern of relationships was observed for students' ratings on the two alliance factor scores. Students' perceptions of bond were associated with self-perceptions in the behavioral domain, while the task/goal factor was related to self-perceptions across all three domains. Students who report displaying appropriate classroom behaviors tend to be the same students who feel that they have positive emotional connections with their teachers. The finding that task/goal was related to self-perceptions across domains is particularly interesting as it supports the importance of examining the collaborative element of relationship. Students' ratings of the collaborative aspect of working alliance are oriented toward the work of the classroom and a sense of mutual understanding that they share with their teachers about the tasks and goals in this context. Given that classrooms are social environments, it is not hard to imagine that being out of sync with the tasks and goals of the classroom will influence students' sense of competence in the way that they behave, interact with peers, and complete academic activities.

Implications

The CWAI can serve as a tool that allows for a broader conceptualization of teacher-student relationship, which includes both emotional connection and collaborative elements. The present results indicate that this inventory can be used reliably with both teachers and students to assess working relationships within the classroom setting. Ultimately, the ability to demonstrate the working alliance as a predictor of student classroom performance will have implications for the educational system in regard to the development and promotion of quality teacher-student relationships.

The importance of alliance is central to training in the field of counseling psychology (Castonguay, Constantino, & Holtforth, 2006), and guidelines for building an effective alliance have been proposed (Crits-Christoph & Connolly, 1999; Crits-Christoph et al., 2006). It is possible that teacher professional development related to alliance building may result in significant changes within the classroom context and subsequent improvements in students' school-related outcomes. The obvious impact of teacher-student relationships on students' functioning (e.g., Hughes, Cavell, & Jackson, 1999; Rey et al., 2007) makes it imperative that teacher professional development emphasizes the importance of understanding and promoting relationship. This serves as a critical contribution to practice as it is difficult to provide concrete guidelines and tools within the confines of the current definition of teacher-student relationship. That would require providing teachers with instructions on how to develop emotional connections (or "liking") with each of his/her students. However, classroom working alliance provides a new conceptualization of relationship that expands beyond the emotional elements to consider the cognitive and collaborative elements of effective working relationships that can be explicitly discussed and negotiated between a teacher and his/her students. This collaboration can be targeted in the classroom and provides an avenue for teachers to connect with students with whom it may be more difficult to form emotional bonds.

Directions for Future Research

This study offers several suggestions for future research endeavors related to the investigation of teacher-student relationship and, more specifically, classroom working alliance. First, these early findings suggest that future investigations may benefit from simultaneously considering both teacher and student perceptions in order to truly understand the influence of relationship on various outcomes. Further, it would be of interest to examine specific student characteristics that may influence perceptions of working alliance. For example, teacher-student alliance may differ based on students' academic or cognitive skills, classroom behaviors, or a number of other individual differences.

Consideration of how teacher characteristics (e.g., gender, ethnicity) interact with these student characteristics to influence the perceptions of either rater might also be another avenue for future research. The professional counseling literature has suggested that the convergence of counselor and client expectations can be of importance in the formation of a positive and effective working alliance (Shaw, McMahon, Chan, & Hannold, 2004). Thus, it could be posited that there is a need to examine discrepancies between teacher and student ratings of classroom working alliance. If congruence between teacher-student expectations was demonstrated to be a critical variable in enhancing working alliance, as it has been shown in counseling research, schools could focus on the implementation of a training protocol to assist teachers in reducing these discrepancies.

It is clear that the conceptualization of teacher-student working alliance can contribute to a classroom atmosphere that fosters student success and positive adjustment. The working alliance is a construct that has not yet been fully explored within an educational context. As such, the findings of the current study make an important contribution to this line of inquiry through validating a unique measure of classroom working alliance.

Note

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