NONVERBAL IMMEDIACY AND COGNITIVE LEARNING: A CROSS-CULTURAL INVESTIGATION

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The current research was based on data drawn from the cultures of Australia, Finland, and Puerto Rico as well as the dominant United States culture. The direction *of the relationship between immediacy and perceived cognitive learning did not differ among the cultures studied (a very positive relationship exists within each culture). However, the magnitude of the relationships varied substantially. The results support the theory that in highly immediate cultures the expectations for immediate teacher behavior are very high and violations of those expectations by being less immediate may be very detrimental to cognitive learning. On the other hand, in less immediate cultures where expectations for immediacy are low, the violation of those expectations by being more immediate may have strong positive effects on cognitive learning.*

The early work on immediacy in instruction focused primarily on the impact of immediacy on affective learning. The seminal work of Andersen (1978, 1979) was of particular importance in this area. Her research indicated a strong association between teacher immediacy and affective learning, an effect observed in many subsequent studies (e.g. Christophel, 1990a, 1990b; Frymier, 1992, 1994; Plax, Kearney, McCroskey, & Richmond, 1986; Richmond, 1990; Thomas, 1994). The motivational theory advanced by Christophel (1990b) and Richmond (1990) suggests that immediate behaviors of teachers directly impact the motivation of their students which results in increased positive affect for both the teacher and the subject matter. Their research along with the more recent work of Thomas (1994) has established the correlational links which support the foundations of that theory. Subsequent work by Frymier (1992, 1994) has established that these links are causal, rather than coincidental, in nature.

Nonverbal Immediacy and Cognitive Learning

While verbal messages are generally thought to have their major impact on the cognitive aspects of communication, nonverbal messages are believed to be the stimuli which are primarily responsible for affective communication. Thus, it was reasonable to expect that nonverbal immediacy behaviors would be most associated with the affective elements in the learning process–affect toward teacher, affect toward content taught, motivation to study–and the research has consistently observed such effects. Nevertheless, the domains of learning have been demon-

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strated in many studies to be associated with each other. Thus, it was anticipated from the outset of research in this area that nonverbal immediacy would also be associated with cognitive learning.

Early research

Early research strongly supported the expected relationship between nonverbal immediacy and affective components of student learning. However, early research provided little evidence of the anticipated relationship between nonverbal immediacy and cognitive learning. No relationship between immediacy and cognitive learning was found in the seminal study by Andersen (1978, 1979). A follow-up study by Gardner and Andersen (1980) obtained similar results. It was not until later that a common flaw in these and other studies done around the same time (e.g. Nussbaum & Scott, 1979) was determined to be the probable cause of the consistent finding of non-significant or aberrant relationships between teacher communication behaviors and cognitive learning of students (McCroskey & Richmond, 1992). The classes in which these studies were conducted employed a common textbook, a common workbook that guided instruction in each class period, a common syllabus, learning objectives that were provided the students, and tests based on those objectives. With those objectives and the textbook it was quite possible for a student to master the content tested without ever attending the class. Hence the potential impact of teacher behaviors on cognitive learning was reduced to a minimal level, which was the intended purpose of the course design. Later studies have employed different classes and designs which avoid this problem.

Measurement problems

Research on the relationship between teacher immediacy and cognitive learning has been confronted with the problem of how cognitive learning should be measured. The study of variables that impact cognitive learning has long been impeded by the difficulty in establishing valid measures of this type of learning. While on the surface, this would seem to be answered simply by using whatever learning measure is already being used in a course involved in the study, in practice this is no answer at all. In fact, this "simple" method was the procedure used in the early studies which was so problematic. "Normal" methods of evaluating student learning often are not sufficiently related to teacher behavior to give an accurate indication of what impact the teacher has on student learning. Final grades, for example, tend to have very restricted ranges. Although these grades can be retrieved from university records with little difficulty, they often have little relationship with what students have learned in a given class from a given teacher. Students may know the material when they enroll, they may know so little they cannot catch up with the other students, grades may be based on such irrelevant (to amount learned, that is) matters as class participation, work turned in late, attendance, or "attitude." Worse yet, the exams in most classes are prepared and administered by the individual teachers of the classes; people who, for the most part, have little or no training or knowledge about the development of reliable and valid tests. Such tests have no established norms, usually are not based on publicly stated objectives, and are only marginally related to what is taught in the class.

One option for overcoming these problems would be the use of standardized testing. Although standardized measures of cognitive knowledge within many specific content areas have been developed, comparisons across content areas,

particularly across content areas in disparate fields, suffer from lack of comparability. Use of standard scores would only partially compensate for those differences.

Moreover, two other serious problems confront the use of standardized tests–even if we could concede their validity as measures of what the student has learned, which many people will not concede. First, there is no assurance in most circumstances that the teacher has attempted to teach what is included on the standardized exam. In fact, great care usually is taken to assure that the teachers do not even *know* what is on the exam in order to prevent them from "teaching the test." Thus, the design and execution of these tests, like the courses and tests used in the early immediacy research, make them "teacher proof." Second, administering such tests to students over a wide range of subjects and courses would be extremely expensive, would require the cooperation of their teachers (which many would not give), and would be very time consuming for the students participating in the research project (hence leading to high subject loss). These two problems make use of standardized exams an unrealistic solution to this difficult problem.

These measurement problems typically do not surface in well-controlled, laboratory experiments. For example, Kelley and Gorham (1988) designed a laboratory experiment in which all content to be learned was novel and could not be known by the student participants in advance. Students were taught individually. They were asked to read and recall four groups of six items in each of four conditions. Each group of items consisted of alternating three– to five–letter nouns and two–digit numbers. The word/number sequences provided six unrelated "chunks" for memory storage and recall. The study found that manipulation of the immediacy of the teacher had substantial and significant impact on the students' ability to recall the information taught. This study clearly demonstrated a positive impact of teacher immediacy on student learning. Unfortunately, such experiments have low ecological validity for generalizing to normal classrooms.

This measurement problem is not one restricted to researchers in the area of instructional communication, but rather has impacted instructional research generally. While no solution has been generated that has been universally accepted, self–report measurement has emerged as the most widely accepted method available to instructional researchers at this point.

Self-report measurement

Over the past two decades evidence from the field of education has accumulated which points to the validity of self-reports as a measure of student learning. In a recent summary of this literature, Corrallo (1994) notes that "there is a considerable literature concerned with establishing the validity of student self-reports about cognitive outcomes." He concludes that "self-reports of cognitive gain are indicative of, but not completely coincident with, results obtained through more direct forms of assessment" (p. 23). Of course, given the demonstrated limitations on the validity of the other methods noted above, complete coincidence (extremely high correlations) would point to the **lack** of validity of self-report data.

The use of self-report data in instructional research did not originate in the communication field. As Corrallo (1994) notes, a large portion of the empirical literature in education that attempts to link learning gains with characteristics of students and the learning environment is founded principally upon the use of self-reported data (e.g. Astin, 1977, 1993; Endo and Harpel, 1982; Pace 1984, 1990; Terenzini & Wright, 1987). This approach is used because it generates data that are

consistent with measures of actual outcomes (Baird, 1976). Pace (1990) advanced five reasons to accept the validity of student self-reports of cognitive achievement: a) consistency of results over time and across different populations, b) the fact that patterns of outcomes vary for self-reports across majors and length of study in the same manner as has been established through direct achievement testing, c) the internal consistency of questionnaire responses across different items on the same dimension, d) the fact that reported growth follows expected patterns of experience, and e) apparent student seriousness and engagement with the instrument itself.

Probably the strongest case for the validity of student self-reports in this area comes from Astin's (1977, 1985, 1993) results from over twenty years of experience with the CIRP Freshman and Follow-Up surveys which show patterns of self-reported outcomes that vary consistently by major field and other measures of levels of exposure, just as directly-assessed cognitive outcomes do. Clearly, students generally have a good sense of what they have learned and are willing to self-report their perceptions in educational research.

The above, of course, should not be taken to an extreme. These data should not be used for providing grades for individual students, since honesty in a dispassionate research study certainly is not to be equated with the self-motivated response students might give if they knew it would determine their grade in a course. The case for valid use of student self-reports of cognitive learning in instructional research, however, clearly is strong. That approach was chosen for use in the current research. Cognitive learning in this research, therefore, is student-perceived cognitive learning.

Nonverbal Immediacy and Culture

Previous research on the relationship between teacher immediacy and cognitive learning (using self-report measurement of that learning) has demonstrated a positive relationship. Most of this research (as is the case with most other research in instructional communication) has been conducted with subjects who represent a primarily caucasian, middle-class U.S. culture. The few immediacy studies which have examined other student groups have drawn on students from subgroups still within the overall U.S. culture (mostly in California universities; eg., Powell & Harville, 1990; Sanders & Wiseman, 1990).

Powell and Harville's (1990) research did not include a measure of cognitive learning. Sanders & Wiseman (1990) found that the impact of immediacy on cognitive learning did not differ significantly among African-American, Asian-American, Hispanic (primarily Mexican-American), and non-Hispanic caucasian groups.

Studies which draw from subgroups which represent regional subcultures which are a part of the larger U.S. culture are important. However, the individuals in the ethnic subgroups in these studies may well be more culturally similar to one another (i.e., all members of the California regional subculture) than they are to others in their ethnic subgroup who live in other regions of the U.S. or other countries.

While studies such as the above have value, it is important that we examine the potentially different impact of nonverbal immediacy on cognitive learning in truly different cultures–in circumstances where the teachers and/or the students are from a culture different from that which is predominant in the mainland U.S. In this way, we may be able to develop and/or test theories which will account for systematic

differences which may be introduced when teachers and/or students are from a culture other than that of the U.S. or are not both from the same culture–or, if no such differences actually exist, justify applying U.S.–based theory to other cultural contexts.

THE CURRENT STUDY

In the present study we obtained data from four very divergent cultures: (a) The baseline data were drawn from U.S. college students from the same population employed in many of the previous studies; (b) Australian college students were chosen because they are English speaking and represent a culture presumed to be quite similar to the general U.S. culture, although very different in many surface aspects; (c) Puerto Rican college students were chosen because they represent an expressive and highly immediate Spanish-speaking culture which distinctly differs from that of the general U.S. culture, even though they are U.S. citizens; and (d) Finnish college students were chosen because they represent a low-expressive, nonimmediate northern European culture and language community which is distinctly different from that of the U.S. and the other two cultures chosen.

It was presumed at the outset that if the relationships between nonverbal immediacy and cognitive learning in these diverse cultures were found to be very similar, a presumption for the generalizability of the findings in the U.S. research would be established. Future research would then need to be directed toward identifying the limitations of those generalizations. In contrast, if meaningful differences among the relationships between nonverbal immediacy and cognitive learning were to be found, no presumption of generalizability would be established. Future research would then need to be directed toward identifying the cultural elements which are responsible for the differences observed and developing culturally based recommendations for teachers' behaviors.

Research Questions

There were two research questions posed for this investigation:

RQ1: To what extent is the relationship between nonverbal immediacy and cognitive learning consistent across cultures?

RQ2: To what extent are the relationships between individual nonverbal immediacy behaviors and cognitive learning consistent across cultures?

The first question centers on the overall similarity of relationships among the cultures. Question 2 is concerned with the individual immediacy behaviors (e.g., movement, facial expression, and vocal variety). It was recognized that the global perceptions of immediacy might be similar, but those perceptions might be differentially influenced by the individual behaviors in the different cultures. If this were found to be the case, it would suggest that teacher training regarding nonverbal immediacy would need to include different emphases in different cultures. While we entered this research with the assumption that nonverbal immediacy on the part of teachers would have a positive relationship with students' learning across cultures, we also thought that it would be likely that the impact of nonverbal immediacy might be greater in some cultures than others. We believed it inappropriate to posit directional hypotheses relating to the differences because conflicting rationales led to hypotheses in opposite directions. One could, for example, hypothesize that in more

immediate cultures more immediate teachers would have a stronger impact than in less immediate cultures due to their meeting student expectancies. On the other hand, one could hypothesize that in less immediate cultures more immediate teachers would have a stronger impact than in more immediate cultures due to their violation of expectancies and, thereby, attracting more attention. Given the absence of data from prior research to add credence to either of these hypotheses, we felt posing research questions was the best option.

METHODS

Measures

Immediacy.

Nonverbal immediacy was measured by a 10-item revised version of the 14-item Nonverbal Immediacy Measure (NIM) first used by Richmond, Gorham, & McCroskey (1987). The earlier work of Andersen (1978) and others employed the Generalized Immediacy (GI) measure and/or the Behavioral Index of Immediacy (BII). The GI measure is a high–inference affective measure. While its ease of administration makes it a very attractive measurement option, it is highly subject to problems with redundancy of measurement when similar instruments are being used to measure other affective constructs, such as affect toward course content or instructor. The BII instrument, in contrast, is a low-inference measure which asks students to report their teacher's behavior *in comparison* to other teachers. The problem with this instrument is its comparative aspect. If students do not have similar bases for comparison, they will be providing data on different scales which cannot be legitimately compared to one another. This is a problem in a single culture because teachers in some disciplines have been found to be consistently more immediate (eg., social sciences) than teachers in some other disciplines (eg., physical sciences). This is presumed to be the reason why validity coefficients between teacher and student reports of the same teacher's immediacy behaviors when using the GI or BII are very low (Rodgers & McCroskey, 1984).

The 14-item version of the NIM instrument was developed to be a low-inference measure with a reference base consistent for all students, regardless of subject matter being studied or the culture of the student. It provides the respondent with items which describe individual immediacy behaviors (eg., "Gestures while talking to the class.") and asks the respondent to indicate which of five response options best describes the teacher: Never = 0, Rarely = 1, Occasionally = 2, Often = 3, and Very Often = 4.

The NIM has been found to be reliable when used by either teachers or students and the validity coefficient between teachers' and students' perceptions of teacher immediacy is good (Gorham & Zakahi, 1990). This instrument has been used in most of the recent research on immediacy in instruction, often in conjunction with an instrument intended to measure verbal immediacy (eg. Burroughs, 1990; Christophel, 1990a, 1990b; Frymier, 1992, 1994; Powell & Harville, 1990; Richmond, 1990; Sanders & Wiseman, 1990; Thomas, 1994; Thomas, Richmond, & McCroskey, 1994; Thompson, 1992). It has excellent predictive validity and acceptable reliability (.70–.85 in most reports).

All 14 items of the NIM instrument were completed by the subjects in all samples in this study. However, the items relating to touch and sitting or standing while

teaching were found to be poor items in all of the samples. Examination of available data sets from earlier research indicated they frequently were poor items in those studies as well. The data from the present research indicated that college teachers in all four cultures virtually never touch their students (means ranged from .3 to .6, with the U.S. mean being the highest of the four groups). Subjects in the U.S. sample indicated that college teachers sometimes sit and sometimes stand, but that they are able to be immediate or nonimmediate in either position. Thus, neither sitting nor standing is a reliable predictor of a teacher's immediacy. In reliability analyses it was found that elimination of these items would increase or have no impact on the reliability of the instrument, hence they were eliminated. The revised instrument (RNIM) is presented in Figure 1.

Perceived cognitive learning

Cognitive learning, as noted previously, was measured by use of student self-reports of their learning. The instrument employed was first used by Richmond, Gorham, & McCroskey (1987) and has been used in most studies related to immediacy and cognitive learning since then. The students were asked to respond to two questions: "On a scale of 0–9, how much did you learn in this class, with 0 meaning you learned nothing and 9 meaning you learned more than in any other class you've had?" and "How much do you think you could have learned in the class had you had the ideal instructor?" By subtracting the score on the first scale from the score on the second, a variable labeled "learning loss" was created. This was intended to remove some of the possible bias with regard to estimated learning that could stem from being forced to take a class in a disliked subject. Hence, two different (but substantially correlated) scores were taken to represent students' perceptions of their learning. The first was the raw "learning" score and the second was the "learning loss" score. It was presumed that immediacy should be correlated positively with the former and negatively with the latter if immediacy were positively related to cognitive learning.

Since the two cognitive learning instruments were single–item scales, no alpha reliability estimates were possible. In a pilot test employing only U.S. subjects (n = 162), the test–retest reliability of the learning and learning loss scores over a five day period were .85 and .88, respectively. This was deemed satisfactory for the purposes of this study.

FIGURE 1

PERCEIVED NONVERBAL IMMEDIACY BEHAVIOR SCALE

Directions: Below are a series of descriptions of things some teachers have been observed doing in some classes. Please respond to the statements in terms how well they apply to this teacher. Please use the following scale to respond to each of the statements: Never = 0 Rarely = 1 Occasionally = 2 Often = 3 Very Often = 4

_____ 1. Gestures while talking to the class.
_____ 2. Uses monotone/dull voice when talking to the class.*
_____ 3. Looks at the class while talking.
_____ 4. Smiles at the class while talking.
_____ 5. Has a very tense body position while talking to the class.*
_____ 6. Moves around the classroom while teaching.
_____ 7. Looks at the board or notes while talking to the class.*
_____ 8. Has a very relaxed body position while talking to the class.
_____ 9. Smiles at individual students in the class.**
_____ 10. Uses a variety of vocal expressions when talking to the class.

*Item should be reflected prior to scoring.
**Recommended replacement for #9 in future use: "Frowns at the class while talking."* See note 1.

All instruments were presented to the students in their first language (English in the U.S. and Australia; Spanish in Puerto Rico; Finnish in Finland). The Werner and Campbell (1970) back-translation method was employed for the Finnish and Spanish versions of the instruments.

Procedures

In order to obtain data pertaining to a wide variety of teachers and subject matter in each of the cultures, to avoid problems with having students fill out questionnaires on the teacher of the class in which the data were collected, and to obtain data on teachers who would not otherwise permit their students to complete the questionnaires, we employed the methodology first employed in the Plax et al. (1986) study. This method asks the student to complete the questionnaires on the class that the student had most recently before the class in which the data are collected. Thus, if the student took Physics 100 at 10:00 A.M. and completed this instrument in History 125 at 11:00 A.M., he or she would be completing the instrument on the physics course, not on the course in which the instrument was given to her or him.

Data were collected toward the end of the term in each culture so that the students would have substantial exposure to the teacher and content of the class about which they were responding. All students completed the questionnaires anonymously. The Australian sample included 139 students from the Warrnambool Institute of Advanced Education. The Puerto Rican sample included 431 students from the University of Puerto Rico, Rio Piedras. The Finnish sample included 151 students from the University of Jyvaskyla. The U.S. sample included 365 students from West Virginia University.

Preliminary analyses indicated there were no significant differences on any measure attributable to biological sex of student or teacher, so subsequent analyses did not include the sex variable. Alpha reliabilities for the immediacy instrument are reported in Table 1. All reliabilities were satisfactory, although the lower reliability of the RNIM with the Puerto Rican sample (.69) was suggestive of translation problems.[1]

Data Analyses

Scores on the three measures were subjected to analyses of variance to determine whether there were any general differences in perceptions of immediacy or cognitive learning among the students in the four cultures. Differences between correlations of immediacy with the cognitive learning measures among the cultures were tested by *t*-tests for independent samples (employing the usual r to z transformations; Bruning & Kintz, 1968).

A supplementary analysis was conducted employing some of the individual items on the RNIM as discrete predictors of cognitive learning. Six scores were selected to

TABLE 1

Alpha Reliability Estimates for Measure

Measure	Sample			
	Australia	Finland	Puerto Rico	U.S.A.
Nonverbal Immediacy	.79	.89	.69	.85

represent six different nonverbal codes (gesture, voice, eye contact, facial expression/smiling, movement, and body position). The simple correlations were obtained as well as the multiple correlation of these six with each of the cognitive learning measures. These analyses permitted examination of the comparative importance of the various nonverbal behaviors across the four cultures.

RESULTS

Table 2 reports the means and standard deviations for the immediacy and cognitive learning measures, including the means for the individual items on the immediacy measure. Analysis of variance indicated that the students in the various cultures differed in the degree to which they perceived their teachers to be immediate ($F = 32.49$, *d.f.* 3, 1082, $p < .0001$). Post hoc *t*-tests indicated that the Puerto Rican and U.S. samples did not differ from each other but reported their teachers as being significantly more immediate than did the students from either Australia or Finland. The Finnish teachers were reported to be less immediate than the teachers from any other culture.

Significant differences were found in the analyses of variance of the learning ($F = 6.19$, *d.f.* 3, 1082, $p < .01$) and learning loss scores ($F = 4.77$, *d.f.* 3, 1082, $p < .01$). The Puerto Rican students reported more learning in their classes than did the students in Australia or Finland. The U.S. students did not differ from any other group. The Australian students indicated a greater learning loss than did the students from the other three groups. The U.S. students reported the least learning loss of the four groups.

Table 3 reports the simple correlations of the cognitive learning measures with the total RNIM scores and the scores on the individual items as well as the multiple correlations of the six selected RNIM items with each cognitive learning measure. The correlations of the RNIM scores with the learning scores were higher for Finland than any other group. In all cultures, teacher nonverbal immediacy was

TABLE 2

MEANS AND STANDARD DEVIATIONS OF MEASURES

	Sample							
	Australia		Finland		Puerto Rico		U.S.A.	
Measure*	M	SD	M	SD	M	SD	M	SD
Revised Nonverbal Immediacy Measure	25.6_{ab}	6.1	23.9_{ab}	7.9	28.8_{a}	5.6	28.2_{b}	7.8
1. Gesture	3.0	.8	2.3	1.2	2.9	1.1	3.0	1.1
2. Voice	2.3	1.1	2.4	1.3	2.7	1.4	2.8	1.4
3. Eye Contact	3.5	.7	3.2	.9	3.7	.7	3.6	.8
4. Smiling	2.6	1.1	2.5	1.1	3.3	1.0	3.0	1.2
5. Body Position	2.8	1.0	3.3	1.0	3.2	1.1	3.0	1.2
6. Movement	2.0	1.2	1.5	1.4	2.5	1.4	2.5	1.4
7. Eye Contact	2.1	1.0	2.2	1.1	2.5	1.3	2.5	1.2
8. Body Position	2.8	.9	2.6	1.1	3.3	.9	3.1	1.1
9. Smiling	2.0	1.0	1.6	1.0	1.9	1.1	2.1	1.2
10. Voice	2.4	1.0	2.2	1.2	2.8	1.1	2.7	1.3
Learning	5.5_{a}	1.9	5.3_{b}	1.9	6.4_{ab}	1.9	6.0	2.0
Learning Loss	2.2_{ab}	1.9	1.8_{a}	1.8	1.8_{b}	1.8	1.4_{ab}	1.8

*Ranges of scores (possible) for the measures are as follows: Total immediacy 0–40; each learning score, 0–9. Obtained ranges were consistent with possible ranges.

$_{abc}$Means with same subscript on same measure are significantly different, $p < .05$.

TABLE 3

CORRELATIONS AND MULTIPLE CORRELATIONS OF NONVERBAL IMMEDIACY MEASURES WITH COGNITIVE LEARNING MEASURES

Predictor(s)	Criterion	Sample			
		Australia	Finland	Puerto Rico	U.S.A.
Total Immediacy Score	Learning	$.36_{a}$	$.59_{abc}$	$.45_{b}$	$.40_{c}$
Six-Item Scores (multiple-r)	Learning	.40	.61	.44	.41
1. Gesture	Learning	.17	.32	.13	.24
2. Voice	Learning	.31	.54	.43	.35
3. Eye Contact	Learning	.23	.52	.27	.24
4. Smiling	Learning	.34	.37	.34	.33
6. Movement	Learning	.03	.19	.22	.19
8. Body Position	Learning	.29	.51	.34	.35
Total Immediacy Score	Loss	$-.33_{ad}$	$-.68_{abc}$	$-.42_{b}$	$-.50_{cd}$
Six-Item Scores (multiple-r)	Loss	.38	.69	.42	.52
1. Gesture	Loss	−.13	−.37	−.10	−.30
2. Voice	Loss	−.34	−.60	−.41	−.41
3. Eye Contact	Loss	−.17	−.59	−.22	−.33
4. Smiling	Loss	−.25	−.45	−.33	−.43
6. Movement	Loss	−.03	−.31	−.22	−.26
8. Body Position	Loss	−.30	−.59	−.35	−.41

$_{abcd}$Correlations with same subscript involving the total immediacy score are significantly different, $p < .05$.

found to be positively correlated with learning, with correlations ranging from .36 to .59. The multiple correlations based on the six selected items followed the same pattern, ranging from .40 to .61 ($F > .05$). These correlations are best described as moderately high and of approximately the same magnitude observed in previous research. Examination of the correlations of the individual items with perceived learning did not indicate any striking variations from culture to culture, although the correlations obtained from the Finnish data were nearly all higher for each item than for the other cultures.

The correlations of the RNIM scores with the scores on learning loss ranged from −.33 for Australia to −.68 for Finland. The relationship for Finland was significantly stronger than for any other culture. The U.S. correlation (−.50) was significantly stronger than that for Australia. Other comparisons were not significant. The multiple correlations of the six selected items with learning loss showed a similar range. Examination of the simple correlations of the items with learning loss indicated that the correlations for the Finnish sample were nearly all higher than those for the other cultures.

DISCUSSION

Our first research question addressed the extent to which the relationship between nonverbal immediacy and cognitive learning is consistent across cultures. Our results indicate that in all four cultures increased teacher immediacy is associated with an increase in perceived learning and a decrease in learning loss. The correlations between teacher immediacy and cognitive learning were all positive and accounted for substantial variance (13–35 percent). The correlations between immediacy and learning loss were all negative and accounted for 11 to 46 percent of the variance. In addition, the two cultures with the highest reported teacher immediacy were also the two with the highest reports of perceived learning.

While the differences in teacher immediacy among the cultures were not particularly large, differences in the degree to which immediacy was associated with perceived cognitive learning were very substantial. In Finland, immediacy could predict over 46 percent of the variance in cognitive learning loss, but in Australia only about a fourth of that was predictable. Clearly, this difference is not trivial. However, it is very important to stress that the *direction* of the relationship between immediacy and cognitive learning does not differ among the cultures studied (a very positive relationship exists within each culture), it is only in the magnitude of the relationship where important cultural variation appears. Thus, it must be stressed that, in spite of the important cultural variation observed, the recommendation to teachers in all of these cultures would be to attempt to be more immediate in order to enhance cognitive learning.

If the above pattern of differing magnitude of association between immediacy and perceived cognitive learning can be identified in other diverse cultures, and/or in diverse subcultures within a larger culture (such as in the U.S.), we may postulate the existence of a baseline student need for teacher immediacy which varies inversely with the normative level of immediacy in the culture. Thus, in immediate cultures we might expect the positive impact of immediacy to be high, but in non-immediate cultures the impact of immediate teachers in contrast to nonimmediate teachers may be comparatively even larger. The recommendation to teachers, however, would remain the same regardless of the culture–be sure to keep immediacy high.

These results permit us to advance the theory that in highly immediate cultures the expectations for immediate behavior are very high and violations of those expectations by being less immediate are very detrimental to cognitive learning. On the other hand, in less immediate cultures where expectations for immediacy are low, the violation of these expectations by being more immediate will have strong positive effects on cognitive learning. This theory, of course, needs to be more directly tested in a variety of additional cultures.

Our second research question was directed toward possible differences with regard to individual immediacy behaviors from culture to culture. No unusual pattern became evident in this research. Rather, the pattern for the individual nonverbal behaviors is reflected in the pattern for the total immediacy score. In most cases, movement and gesture were the nonverbal immediacy behaviors that were least associated with cognitive learning across the cultures studied. Vocal variety, eye contact, and smiling were generally the nonverbal behaviors most highly related to learning. It is reasonable to anticipate similar patterns will appear in data from other cultures. However, given some cultures' unique reactions to various nonverbal behaviors (such as direct gaze), it would be helpful to examine these individual behavior effects in future research in other cultures.

NOTES

[1]Subsequent to completion of these data analyses and preparation of the initial report of this research, students from the same population included in this study were engaged in focus groups to determine whether translation problems existed. These discussions indicated that there were no problems with the literal translation of the instrument. However, one item (#9 "Smiles at individual students in the class") was interpreted by many of these students in a way very different from the students in the other cultures, and in a way which was not consistent with the intent of the item on the measure. Instead of seeing this behavior as a positive indication of teacher immediacy, many of these students saw it as an indication of the teacher showing prejudicial favoritism toward some students over others. Omission of this item was subsequently found to raise the reliability of the RNIM so as to be consistent with its reliability in the other cultures. Consequently, we recommend substituting a new item in place of item 9 in future use of this instrument. The new item is "Frowns at the class while talking." This item should be reflected prior to scoring the instrument.

REFERENCES

Andersen, J. F. (1978). *The relationship between teacher immediacy and teaching effectiveness.* Unpublished doctoral dissertation, West Virginia University, Morgantown.

Andersen, J. F. (1979). Teacher immediacy as a predictor of teaching effectiveness. In D. Nimmo (Ed.), *Communication Yearbook 3* (pp. 543–559). New Brunswick, NJ: Transaction Books.

Astin, A. W. (1977). *Four critical years.* San Francisco: Jossey-Bass.

Astin, A. W. (1985). *Achieving educational excellence.* San Francisco: Jossey-Bass.

Astin, A. W. (1993). *What matters in college?* San Francisco: Jossey-Bass.

Baird, L. A. (1976). Structuring the environment to improve outcomes. In O. T. Lenning (Ed.), *Improving educational outcomes.* (New Directions for Higher Education, No. 16, pp. 1–24). San Francisco: Jossey-Bass.

Bruning, J. L., & Kintz, B. L. (1968). *Computational handbook of statistics.* Glenview, IL: Scott, Foresman.

Burroughs, N. F. (1990). *The relationship of teacher immediacy and student compliance-resistance with learning.* Unpublished doctoral dissertation, West Virginia University, Morgantown.

Christophel, D. M. (1990a). *The relationships among teacher immediacy behaviors, student motivation, and learning.* Unpublished doctoral dissertation, West Virginia University, Morgantown.

Christophel, D. M. (1990b). The relationships among teacher immediacy behaviors, student motivation, and learning. *Communication Education, 37,* 323–340.

Corrallo, S. (1994). *A preliminary study of the feasibility and utility for national policy of instructional 'good practice' indicators in undergraduate education* (Contractor Report). National Center for Higher Education Management Systems, U. S. Department of Education, National Center for Education Statistics 94–437.

Endo, J., & Harpel, R. (1982). The effect of student-faculty interaction on students' educational outcomes. *Research in Higher Education, 16,* 115–138.

Frymier, A. B. (1992). *The impact of teacher immediacy and affinity-seeking on students' motivation and learning.* Unpublished doctoral dissertation, West Virginia University, Morgantown.

Frymier, A. B. (1994). A model of immediacy in the classroom. *Communication Education, 42,* 133–144.

Gardner, J., & Andersen, J. F. (1980). *The impact of lecturer nonverbal expressiveness on improving mediated instruction.* Paper presented to the Eastern Communication Association convention, Ocean City, MD.

Gorham, J., & Zakahi, W. R. (1990). A comparison of teacher and student perceptions of immediacy and learning: Monitoring process and product. *Communication Education, 39,* 354–368.

Kelley, D. H., & Gorham, J. (1988). Effects of immediacy on recall of information. *Communication Education, 37,* 198–207.

McCroskey, J. C., & Richmond, V. P. (1992). Increasing teacher influence through immediacy. In V. P. Richmond and J. C. McCroskey (Eds.), *Power in the classroom: Communication, control, and concern* (pp. 101–119). Hillsdale, NJ: Lawrence Erlbaum.

Nussbaum, J., & Scott, M. D. (1979). The relationship between communicator style, perceived self-disclosure, and classroom learning. In D. Nimmo (Ed.), *Communication Yearbook 3,* (pp. 561–584). New Brunswick, NJ: Transaction.

Pace, C. R. (1984). *Measuring the quality of student experiences: An account of the development and use of the College Student Experiences Questionnaire.* Los Angeles: Higher Education Research Institute, University of California, Los Angeles.

Pace, C. R. (1990). *The undergraduates: A report of their activities and progress in college in the 1980's.* Los Angeles: Center for the Study of Evaluation, University of California, Los Angeles.

Plax, T. G., Kearney, P., McCroskey, J. C., & Richmond, V. P. (1986). Power in the classroom VI: Verbal control strategies, nonverbal immediacy, and affective learning. *Communication Education, 35,* 43–55.

Powell, R. G., & Harville, B. (1990). The effects of teacher immediacy and clarity on instructional outcomes: An intercultural assessment. *Communication Education, 39,* 369–379.

Richmond, V. P. (1990). Communication in the classroom: Power and motivation. *Communication Education, 39,* 181–195.

Richmond, V. P., Gorham, J. S., & McCroskey, J. C. (1987). The relationship between selected immediacy behaviors and cognitive learning. In M. A. McLaughlin (Ed.), *Communication yearbook 10* (pp. 574–590). Newbury Park, CA: Sage.

Rogers, M. A., & McCroskey, J. C. (1984, March). *Nonverbal immediacy of teachers in classroom environments.* Paper presented at the annual convention of the Eastern Communication Association.

Sanders, J. A. & Wiseman, R. L. (1990). The effects of verbal and nonverbal teacher immediacy on perceived cognitive, affective, and behavioral learning in the multicultural classroom. *Communication Education, 39,* 341–353.

Terenzini, P. T., & Wright, T. (1987). Influences on students' academic growth during four years of college. *Research in Higher Education, 26,* 161–179.

Thomas, C. E. (1994). *An analysis of teacher socio-communicative style as a predictor of classroom communication behaviors, student liking, motivation, and learning.* Unpublished doctoral dissertation, West Virginia University, Morgantown.

Thomas, C. E., Richmond, V. P., and McCroskey, J. C. (1994). The association between immediacy and socio-communicative style. *Communication Research Reports, 11,* 107–114.

Thompson, C. C. (1992). *The relationships among teachers' immediacy behaviors, credibility, and social style and students' motivation and learning: Comparisons among cultures.* Unpublished doctoral dissertation, West Virginia University, Morgantown.

Werner, O., & Campbell, D. (1970). Translating, working through interpreters, and the problems of decentering. In R. Naroll and R. Cohen (Eds.), *A handbook of method in cultural anthropology.* New York: American Museum of Natural History.