CURRENT RESEARCH ON LEARNING AND TEACHING

Larry Heien and Raymond Moody

Factors which influence language learning are a vital concern of several members of the Department of European Languages and Literature. Those factors currently under investigation include modes of presenting materials and practice, student attitudes toward the culture of the new language, and teacher variables and student evaluation of teaching effectiveness. Since space does not permit a detailed account of all these activities, only two are described here. The first section deals with two approaches for developing listening comprehension. The second section outlines studies concerning the evaluation of teaching effectiveness.

AN EXPERIMENT IN THE DEVELOPMENT OF LISTENING COMPREHENSION

The Listening Comprehension (LC) skill plays an extremely important role in the teaching of Foreign Language (FL) for communication, but the development of this skill has been woefully neglected and is still insufficiently studied in terms of psychological theory and the building of systematic training procedures.

For the most part American research in FL methodology has been conducted within the framework of American theory. This situation is understandable and probably well advised given the special needs and educational goals of any country. However, the work of the theorists and methodologists who are native speakers of the FL should not be overlooked. The Soviets, for example, have in recent years taken a great interest in the teaching of FL and particularly Russian as a FL. Consequently, they have conducted a considerable amount of theoretical and applied research in language learning. There is interest at the University of Hawaii in incorporating Soviet theories into the empirical testing of theory in order to widen the scope of the search for a more effective and efficient methodology. The preliminary research described below represents a step in that direction in that American teaching experience and the results of American research were combined with certain theoretical propositions of Soviet psychologist V.B. Belyaev in devising an experiment to assess the effectiveness of two approaches to LC development.

The Present Situation and What Can Be Done

Existing materials used for training in LC are designed essentially for the learning of lexical-grammatical structure in general and for developing the speaking skill in particular. Some of these materials can be classified as "synthetic." They include dialogs, teacher talk, oral exercises, and taped versions of the dialogs and exercises. All are carefully confined to the basic structure of a given lesson. Other materials may be labeled as "controlled." These include work in "real language" practice: (1) questions which are limited in structure and concern the content of the dialog or relate to the student's life and (2) limited conversations between teacher and student or between students. A few texts have recorded materials which are variations of the basic dialogs and thus may be said to be specifically designed as LC exercises.

After activities of the kinds described the development of the LC skill usually breaks down to a generally accepted aphorism, "The more they listen, the better they'll hear." Or as one Soviet methodologist has put it (Sheviakova, 1971), students are sent to the lab and told to "listen to the material," without any specific goal and without any particular preparation for listening.

A systematic approach to the development of LC should involve more "controlled" work before the student is suddenly confronted with "real language" in the form of live or recorded dialogs and monologues. But the question is what kind of "controlled" work should it be?

In order to determine the best ways of teaching specific elements of the FL or developing given skills, including listening comprehension, Heien (1973, 1971) has recommended small-scale, teacher-conducted experiments which test various theoretical propositions. Such experiments in essence should compare two distinctly different presentations or "methods" involving the learning of a given language element or the development of a particular skill.

Theoretical Considerations and the Two "Methods"

The concern in the experiment was with the step which follows existing teaching-learning activities. Since training presently stops with old (in the sense of previously introduced) vocabulary and structure presented in different combinations, it seems to follow that the next step might be dialogs containing familiar structure with *new* vocabulary and/or *new* content.

Interest was concentrated on the development of preparatory materials which attempt to establish a particular "anticipation set" for listening to new dialogs. "Anticipation set" here means listening strategies or approaches to understanding new speech situations. Two groups of students were prepared for listening to new materials, i.e., familiar structure with new vocabulary and in a new situation, by receiving two different kinds of training. Each group was prepared to concentrate on different ways of comprehending the new material. Through distinct kinds of training the students' attention was directed towards different modes of reception.

The first approach was derived from teaching experience. The question was put to several teachers, that if they were to prepare students to hear a new dialog which consisted of familiar structures, but contained new vocabulary or which presented familiar structures in a new context, how would they go about it. All agreed that teaching the vocabulary would be appropriate. In other words, teachers believed that learning vocabulary first would be a good learning strategy for developing LC. This "logical" approach became one method of preparation (Group I). The so-called "logical" method was not without theoretical bases. The training followed certain psychological learning strategies (described below) found to be effective in vocabulary learning (Belyaev 1965), the intent being to test the best presentation of this type. It should be noted, however, that well-founded strategies for vocabulary learning need not necessarily be effective training in developing *listening comprehension*. Rivers (1968), e.g., has suggested that in listening, concentration on individual vocabulary items results in confusion and in fact hinders over-all comprehension.

The second method of preparation might be designated as the "psychological" approach (Group II), since it incorporated certain theoretical notions concerning (1) the use of literal translation as a pedagogical bridge in the learning of a FL (Parent and Belasco, 1970) and (2) the role of intuition or the "feeling for a language" described by Belyaev (1965). Briefly stated, Belyaev contends that a FL is not truly mastered until one has a "feel" for it, i.e., until he has an intuitive grasp of the linguistic structure; this feeling for a language must be gradually but constantly developed; a practical command of a FL requires the ability to concentrate on the content of speech rather than on its components; a literal translation aids in the comprehension of thoughts and ideas and also in understanding the peculiarities of thinking in a foreign language.

The Experiment

The participants in the experiment were students of the University of Hawaii's first-year Russian classes. A pilot study was conducted on two consecutive days in the language laboratory for twenty minutes of a regular class period each day. The students were told that they were participating in an experiment, but they did not know that they were receiving different treatments.

The printed materials for the two programs were distributed randomly by handing out the programs alternately to the students of both groups. Groups I and II heard the same dialogs (two dialogs played twice each) and the same sets of test questions (one set for each dialog). The time of the preparatory period was equal for each group.

Group I, the "logical" vocabulary training approach, heard each Russian vocabulary item twice, then an interpretive definition in English,

which aimed at teaching the foreign concept, and then English equivalents of the Russian word. The students were asked to repeat the word twice after the speaker and finally to write it. The printed materials included a list of the Russian vocabulary as well as a written text of the taped instructions.

Group II, the "psychological" approach, received a literal translation of the dialog which they were about to hear. This translation was written in an English which closely represented Russian structure and syntax. Since Russian has no articles and no verb "to be" in the present tense, forms of "to be" were deleted and "the," "a" had a line drawn through them (the, a). The second group was told that the dialog which they would hear was translated literally to represent the Russian structure. They were instructed to read through and study the translation as many times as possible during the preparation period. Group II was then instructed to listen to the dialog once while reading the translation, then during the second playing to listen only.

There were then two different "methods" of preparation for listening to new dialogs. One ("logical," Group I) directed the students' attention to individual vocabulary items, the other ("psychological," Group II) to overall meaning or content by means of a literal translation designed to help the student get a feel for thinking in Russian and, hopefully, over the long run, to build an intuition for structure.

Results

The results of the pilot experiment indicated that the "psychological" method was better. Sixty percent of Group II placed in the upper score range whereas only 20 percent of Group I placed there. Sixty percent of Group I placed in the middle score range. Unfortunately, since the groups were small (10 and 11) we cannot draw any statistically reliable conclusions. The indications, however, were encouraging. Group II did better than Group I on each test and on total test scores. Furthermore, even though the groups were randomly assigned, final grades showed that Group II had weaker students than Group I.

A questionnaire was also administered eliciting student opinions of suitability and productivity of the two approaches. The majority of Group II agreed that the literal translation was a relevant preparation. All but one agreed that it was helpful training for understanding the dialog. Although the majority of Group I found the vocabulary training relevant, three disagreed that the training was helpful stating, for example, that "This method places emphasis on listening only for new vocabulary, and as a result, one tends to ignore everything but those sentences containing the new words."

All of these factors suggest the desirability of repeating the experiment with larger groups.

MEASURING TEACHER EFFECTIVENESS

Effectiveness as the General Impact on the Learner

The major difficulty in measuring teacher effectiveness is first to define it. One approach views teaching excellence very broadly in terms of its constructive influence on the life of the learner. It includes such things as the effect on his spiritual, emotional, social, intellectual and skill development. It is concerned with the whole individual and recognizes that effective teaching contributes to the student in several ways. The most effective teacher is defined as the one who carries the learner farthest in these endeavors.

The problem here is to figure out how to measure changes in those areas. While it may be easy to define learning itself as a change in skill, how does one describe precisely a change in spiritual or emotional development? Further, how can we decide whether or not such changes are *constructive*? With competing ideas and values within our own complex society, what may be constructive for one person may be the opposite for another.

Perhaps the easiest way to determine what teaching effectiveness is is to allow students to define it themselves. They are the ones most intimately involved in and affected by the teaching-learning process. The most popular mechanism for this end is the student evaluation questionnaire, in which the students rank their instructor on various items.

Considerable research has been done on these questionnaires, and there is general agreement as to the components of teaching effectiveness: (1) rapport with students—teacher warmth and sympathy, (2) teacher enthusiasm and interest in the course and subject, (3) course organization and clarity of presentation, (4) interactions between the instructor and the class, and (5) the teacher's ability to deal with the material analytically and synthetically. (For recent investiga-

tions see Caffrey, 1969; Coats, 1970; Cohen & Berger, 1970; Flanders, 1969; Guthrie, 1954; Hildebrand, et. al., 1971; Kerlinger, 1967; Musella & Rusch, 1968; Solomon, et. al., 1964.)

In a model study, Hildebrand and his associates (1971) found excellent agreement between faculty and students in the evaluation of effectiveness of given teachers. The characteristics by which each group evaluated teaching, however, were quite distinct. While the students' evaluation followed the general characteristics listed above, colleagues evaluated teachers according to five different dimensions: (1) research activity and publications, (2) intellectual breadth, (3) participating in the academic community, (4) availability to students outside of class, and (5) concern for teaching. Thus, faculty and students tend to agree on which teachers are effective even though their criteria for evaluation are very different. A study of Maslow and Zimmerman (1956) reached similar conclusions.

Students are affected in their evaluation of teachers by many factors. Sex is one. Female students give higher ratings to male instructors who are perceived as "warm" (Isaacson, et. al., 1964; McKeachie, 1961; Pogue, 1967; Turner, et. al., 1969; Veldman & Peck, 1967). Second, students at different levels of achievement rate instructors differently (Bledsoe, et. al., 1971; Holmes, 1971; Spraights, 1967; Veldman & Peck, 1967). Third, undergraduates and graduates disagree on the qualities they respond to in the same instructors (Gates & Burnett, 1969; Gerald Meredith, 1971; Moody, 1972). Similarly students of different subjects—sciences versus arts and social sciences—do not follow the same criteria when they evaluate teachers (Musella & Rusch, 1968; Gerald Meredith, 1971; Veldman & Peck, 1967). Finally, Hildebrand and others (1971) found that instructors teaching seminars received higher ratings than instructors teaching lecture courses. They also found that teachers rated "best" may have quite different sets of characteristics, according to student perception, and concluded that effective teaching may be achieved in a variety of ways.

One element of concern which exerts little influence on the students' rating of their teachers is the course grade. In reviewing the research, Costin and others (1971) cite fifteen studies which found no relationship between grades and teacher ratings and twelve others in which the positive correlation was so small as to be negligible, rarely accounting for more than five percent of the variance.

It appears that because there is some agreement among students and colleagues about the identity of good and not-so-good teachers and about their general characteristics, student questionnaires may serve as a global though obviously partial index of teaching effectiveness. Evaluation by colleagues provides a separate but complementary source of evaluation.

Effectiveness as Achievement of Specific Goals

A second approach for defining teaching effectiveness is to consider how much of the course material the students learn. In this view, the students of a more effective teacher learn more than the students of a less effective teacher. Stated in another way, this approach defines effectiveness in terms of the learner's achievement of predefined course objectives.

Relatively little research has been directed toward investigating the relationship between residual gains in learning and the students' evaluation of their teachers. Morsh and others (1956) found a strong correlation between achievement and teacher evaluation by students in aircraft mechanics training. In academic fields, three studies found no relationship better than chance (Bryan, 1963; Lins, 1946; Russel & Bendig, 1953).

Moody (1973) used step-wise regression analysis to investigate teacher ratings and residual gain scores of students in first semester Spanish. For teacher evaluation the dimensions were similar to the student-determined factors listed earlier and accounted for 67 percent of the variance in teacher rating scores. For student achievement the dimensions were quite distinct. As one would expect, student attributes accounted for most of the variance (49 percent): background and aptitude, initial interest in the course, and the amount of time students spent studying. Course-related activities, i.e., number of quizzes, the perceived value of the language laboratory and of the homework, and the teacher's organization and clarity explained, respectively, 3 percent and slightly more than one percent of the differences in adjusted achievement success. (Adding five items with negative beta weights, including the perceived teacher's sympathy toward the students, brought the total variance accounted for to 56 percent.) These results, focusing on appreciation

of the course rather than of the instructor, match those found by Rubenstein and Mitchell (1970).

Thus, the criteria for the students' evaluation of teacher effectiveness and for their explanation of differences in achievement overlap only to a very small degree with the teacher's organization and clarity. The power of student questionnaires to measure teacher effectiveness defined in terms of student achievement is quite limited. The qualities of teaching effectiveness which students find most important exert little influence on how much they actually learn. The reason is that they base their assessment primarily on the teacher's personality characteristics rather than his performance in guiding learning activities.

In summary, then, student evaluation questionnaires when carefully interpreted can serve to assess teacher effectiveness in two ways: first and foremost, in terms of his general impact upon the students; second, in terms of a very minor influence on gains in knowledge.

Evaluation to Improve Teaching

A second function of teacher evaluation is to enhance the teaching-learning processes by identifying those areas where change seems desirable. Just how much change in teaching behaviors can be effected is open to question. Three studies showed that teachers did not improve as a result of examining student reactions (Gate, et. al., 1960; Savage, 1975; and Seager, 1971). However Murdoch (1969) found that the instructor's knowledge that he would be rated by the students improved his rating but not the student's grades.

Perhaps one reason little change in teaching behavior takes place is that questionnaires do not provide enough information to teachers so that they know where to direct their efforts. Numerical summaries of questionnaire results in the form of means, standard deviations, and percentile ranking, particularly for teachers in the humanities, where numbers maintain an aura of mystery, do not suggest any kind of action which might improve the course. Informal studies at the University of Hawaii show that evaluations which solicit specific comments on specific course content and instructor activities can, on the other hand, provide such information.

Work in progress, then, is aimed at developing a teacher evaluation questionnaire which will provide three kinds of information: (1) a measure of effectiveness in terms of the instructor's general impact on the students, (2) a measure of effectiveness in terms of how much of the material they learn, and (3) specific suggestions for improving the course.

Bibliography

Anderson, Harold M. "A Study of Certain Criteria of Teaching Effectiveness," *Journal of Experimental Education*, Vol. 23, September, 1954, pp. 41-77.

Anikeef, A.M. "Factors Affecting Student Evaluation of College Faculty Members," *Journal of Applied Psychology*, Vol. 37, 1953, pp. 458-60.

Bail, Fredrick T. and Peter Dunn-Rankin. "The Evaluation of Teaching Effectiveness," *Educational Perspectives*, Vol. 11, May, 1972, pp. 26-32.

Belyaev, V.B. *Očerki po psixologii obučenija inostrannym jazykam. (Essays on the Psychology of Learning Foreign Languages.)* Izd. 2, M., "Prosveščenie," 1965.

Bendig, A.H. "Ability and Personality Characteristics of Introductory Instructors Rated Competent and Empathic by Their Students," *Journal of Educational Research*, Vol. 48, 1955, pp. 705-9.

Blank, Logan F. "Relationship Between Student Instructional Ratings and Student-Faculty Psychological Types," Oshkosh, Wisconsin State University, March, 1970.

Bledsoe, Joseph C., Iva D. Brown and Arthur D. Strickland. "Factors Related to Pupil Observation Reports of Teachers and Attitudes Toward Their Teachers," *Journal of Educational Research*, Vol. 65, November, 1971, pp. 119-26.

Bryan, Roy C. "Reactions to Teachers by Students, Parents and Administrators," USOE Cooperative Research Project No. 668, Kalamazoo, Western Michigan University, 1963.

Burkhard, M.I. "Discernment of Teacher Characteristics by TAT Sequence Analysis," *Journal of Educational Psychology*, Vol. 53, 1962, pp. 279-87.

Caffrey, B. "Lack of Bias in Student Evaluations of Teachers," *Proceedings of the 77th Annual Convention of the American Psychological Association*, Vol. 4, 1969, 641-2.

Coats, William D. "Student Perceptions of Teachers—A Factor Analytic Study," Washington, D.C., American Educational Research Association, March, 1970.

Cohen, S.A. and W.G. Berger. "Dimensions of Students' Ratings of College Instructors Underlying Subsequent Achievement on Course Examinations," *Proceedings of the 78th Annual Convention of the American Psychological Association*, Vol. 5, 1970, pp. 605-6.

Costin, Frank, William T. Greenough and Robert J. Menges. "Student Ratings of College Teaching: Reliability, Validity, and Usefulness," *Review of Educational Research*, 1971, pp. 511-35.

Della Piana, G.M. and N.L. Gage. "Pupils' Values and the Validity of the Minnesota Teacher Attitude Inventory," *Journal of Educational Psychology*, Vol. 46, 1955, pp. 167-78.

Domas, S. and D.V. Teideman. "Teacher Competence: An Annotated Bibliography," *Journal of Experimental Education*, Vol. 19, December, 1950, pp. 101-218.

Flanders, Ned A. "Teacher Effectiveness," *Encyclopedia of Educational Research*, 4th ed., New York, Macmillan and Company, pp. 1423-37.

Gage, N.L., P.J. Runkel and B.B. Chatterjee. "Equilibrium Theory and Behavior Change: An Experiment in Feedback from Pupils to Teachers," Urbana, Bureau of Educational Research, University of Illinois, 1960.

Guthrie, E.R. *The Evaluation of Teaching: A Progress Report*, Seattle, University of Washington, 1954.

Heien, L.G. "Language Teaching in Different Keys," *The Modern Language Journal*, Vol. XVII, No. 4, April, 1973, p. 185.

———. "Student Goals and Sound Pedagogy: Some Different Directions for Programmed Materials," *Proceedings of the Pacific Northwest Conference on Foreign Languages*, Vol. XXII, April, 1971, p. 285.

Hildebrand, Milton and others. *Evaluating University Teaching*, Berkeley, University of California Center for Research and Development in Higher Education, 1971.

Holmes, David S. "The Relationship Between Expected Grades and Students' Evaluation of Their Instructors," *Educational and Psychological Measurement*, Vol. 13, 1971, pp. 951-7.

Isaacson, Robert L., Wilber J. McKeachie and John E. Milholland. "Correlation of Teaching Personality Variables and Student Ratings," *Journal of Educational Psychology*, Vol. 54, 1963, pp. 110-17.

Isaacson, R.I. and others. "Dimensions of Student Evaluation of Teaching," *Journal of Educational Psychology*, Vol. 55, 1964, pp. 344-51.

Kerlinger, Fred N. "The Factor Structure and the Content of Perceptions of Desirable Characteristics of Teachers," *Educational and Psychological Measurement*, Vol. 27, 1967, pp. 643-56.

Lewis, Edwin C. "An Investigation of Student-Teacher Interaction as a Determiner of Effective Teaching," *Journal of Educational Research*, Vol. 57, March, 1964, pp. 360-3.

Lins, Leo Joseph. "The Prediction of Teaching Efficiency," *Journal of Experimental Education*, Vol. 15, 1946, pp. 2-60.

Locksley, Norman. "A Mathematical Look at Evaluation of Teaching," *School Science and Mathematics*, Vol. 67, 1967, pp. 797-8.

Maslow, A.H. and W. Zimmerman. "College Teaching Ability, Scholarly Activity and Personality," *Journal of Educational Psychology*, Vol. 47, 1956, pp. 185-9.

McKeachie, Wilber J. "Motivation, Teaching Methods and College Learning," in M.R. Jones, ed., *Nebraska Symposium on Motivation*, Lincoln, University of Nebraska Press, 1961, pp. 111-46.

Moody, Raymond, unpublished research, 1972.

———. "Student Achievement and Student Evaluation of Teaching in Spanish," unpublished research, 1973.

Morsh, J.E., G. Burgess and P.N. Smith. "Student Achievement as a Measure of Instructor Effectiveness," *Journal of Educational Psychology*, Vol. 47, 1956, pp. 79-88.

Murdock, Royal P. "The Effect of Student Ratings of Their Instructor on the Student's Achievement and Rating," Final Report, Salt Lake City, University of Utah, October, 1969.

Musella, Donald and Reuben Rusch. "Student Opinion on College Teaching," *Improving College and University Teaching*, Vol. 16, Spring, 1968, pp. 137-40.

Parent, P. Paul and S. Belasco. "Parallel-Column Bilingual Reading Materials as a Pedagogical Device: An Experimental Evaluation," *The Modern Language Journal*, Vol. XIV, No. 7, November, 1970, p. 493.

Phillips, Beeman N. "The 'Individual' and the 'Classroom Group' as Frames of Reference in Determining Teacher Effectiveness," *Journal of Educational Research*, Vol. 58, November, 1964, pp. 128-31.

Pogue, F.G. Jr. "Students' Ratings of the 'Ideal Teacher'," *Improving College and University Teaching*, Vol. 15, Spring, 1967, pp. 133-6.

Rivers, Wilga M. *Teaching Foreign-Language Skills*, Chicago, The University of Chicago Press, 1968.

Rubenstein, Joseph and Herman Mitchell. "Feeling Free, Student involvement and Appreciation," *Proceedings of the 78th Annual Convention of the American Psychological Association*, Vol. 5, 1970, pp. 623-4.

Russell, H.E. and A.W. Bendig. "An Investigation of the Relation of Student Ratings of Their Psychology Instructors to Their Course Achievement When Academic Aptitude Is Controlled," *Educational and Psychological Measurement*, Vol. 13, 1953, pp. 626-35.

Savage, M.L. "Changes in Student Teachers Through the Use of Pupil Ratings," Diss. Urbana, University of Illinois, 1957.

Seager, G. Bradley, Jr. "Evaluation of a Diagnostic Instrument of Supervision," Paper presented at the annual meeting of the American Educational Research Association, New York, February, 1971.

Sheviakova, V.E. "Osnovnye metodičeskie principy raboty s ozvučennym materialom," ("Basic Methodological Principles of Working with Listening Comprehension Materials") *Prepodavanie inostrannyx jazykov: teorija i praktika*. M., Izd-vo "Nauka," 1971, p. 282.

Slobin, Dan Y. and David G. Nichols. "Student Ratings of Teaching," *Improving College and University Teaching*, Vol. 17, Autumn, 1969, pp. 244-8.

Solomon, D., L. Rosenberg and W. Bezdek. "Teacher Behavior and Student Learning," *Journal of Educational Psychology*, Vol. 55, 1964, pp. 23-30.

Spraights, Earnest. "Students Appraise Teachers' Methods and Attitudes," *Improving College and University Teaching*, Vol. 15, Winter, 1967, pp. 15-17.

Stewart, Clifford T. and Leslie F. Malpass. "Estimates of Achievement and Ratings of Instructors," *Journal of Educational Research*, Vol. 59, April, 1966, pp. 347-50.

Tuckman, B.W. and W.F. Oliver. "Effectiveness of Feedback to Teachers as a Function of Source," *Journal of Educational Psychology*, Vol. 59, 1968, pp. 297-301.

Treffinger, D.J. and J.F. Feldhusen. "Predicting Students' Ratings of Instruction," *Proceedings of the 78th Annual Convention of the American Psychological Association*, Vol. 5, 1970, pp. 621-2.

Turner, Richard L. and others. "How Do Student Characteristics Affect Their Evaluations of Instructors," *Bulletin of the School of Education, Indiana University*, Vol. 45, 1969, pp. 47-97.

Veldman, Donald J. "Pupil Evaluation of Student Teachers and Their Superiors," *Journal of Teacher Education*, Vol. 21, Summer, 1970, pp. 165-7.

———, and Robert F. Peck. "The Pupil Observation Survey; Teacher Characteristics from the Students' Viewpoint," Austin, University of Texas Research and Development Center for Teacher Education, 1967.

Walker, C.R. and G.A. Fischer. "Assessment of the Teaching-Learning Process at the College Level: A Review of Research," *Journal of Research Services*, Vol. 5, 1965, pp. 20-31.

Weigel, Richard G. and others. "Differences in Course Grades and Student Ratings of Teacher Performance," *School and Society*, Vol. 99, January, 1971, pp. 60-2.