PERCEPTUAL LEARNING STYLE PREFERENCES

OF SECOND LANGUAGE STUDENTS

A Literature Survey and Research Report
by

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INTRODUCTION TO LEARNING STYLE

What exactly is "learning style", and how or why is it relevant to students and instructors? Can a person's learning style be adapted to the environment he/she is in? How important is a "match" of learning style to instruction?

Questions similar to these have been examined extensively by educators, particularly since the 1960s. Only recently, however, has the subject begun to be explored within the field of teaching English as a Second Language. This paper will discuss current relevant issues in learning style, particularly in the area of perceptual learning style, as it relates to ESL students and instruction. A research study will be presented and discussed in which a perceptual learning styles inventory was administered to American and Japanese language students. The paper will attempt to help raise awareness of learning style among instructors dealing with students from a variety of backgrounds and a variety of learning histories and experiences, to encourage sensitivity to the variety of learning styles that exists, and to acknowledge the importance of recognizing individual differences in ways of learning.

I. DEFINITION OF LEARNING STYLE

A major problem with the research on learning style to date is that of finding a satisfactory working definition; the term has been used in various and sometimes confusing ways in the literature. It is often used interchangeably with the terms "cognitive style", " learning strategy", or "affective style". Although a conclusive definition is still elusive at this point, I will begin by presenting various ways that researchers have attempted to define and differentiate among these terms.

The term "cognitive style" was first used by Allport in 1937 to refer to "a quality of living and adapting influenced by distinctive personality types"(Keefe, 1979, p.5). Other researchers have since defined it as "information processing habits representing the learner's typical mode of perceiving, thinking, problem solving, and remembering"(Messick, 1969, quoted in Keefe, 1979, p.8). Or, "a superordinate construct...involved in many cognitive operations [that] accounts for individual differences in a variety of cognitive, perceptual, and personality variables" (Vernon, 1973, p. 141). Or, "cognitive characteristic modes of functioning that we reveal through our perceptual and intellectual activities in a highly consistent and pervasive way."(Witkin, 1976, p. 39) Keefe defined it similarly (1979, p.8): "Each learner has preferred ways of perception, organization, and retention that are distinctive and consistent. These characteristic differences are called cognitive styles". Cognitive style, according to Reid (1987), refers to how the mind functions, processes information, or is affected by an individual's perceptions.

Keefe (1979) differentiates between cognitive style and "intellectual ability" (variously called intelligence, IQ, aptitude, etc.) by differentiating between content and process. Ability deals with the kind (or quality) of information processed, style deals with how the information is processed. Abilities also are "value directional", (more is better than less), whereas styles are "value differentiated" (each style has value in and of itself, given the right circumstances).

Herman A. Witkin has done the most extensive, in-depth research on cognitive style to date. (Claxton and Murrell, 1987). His work focuses on the issue of field dependence (when a person is influenced by the surrounding field) and field independence (when a person is not influenced by the surrounding field) in perception. Research emphasizing cognitive style also includes the work of Kolb, who divides people according to their preferences into accommodators, divergers,

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convergers, and assimilators. Gregorc similarly divides people by their preferences for learning as concrete sequential, abstract sequential, abstract random, or concrete random thinkers. (Claxton and Murrell, 1987).

The Myers-Briggs Type Indicator is an example of a testing instrument that uses Jungian psychology to determine aspects of a person's cognitive style as an aid for counseling, teaching, and business. The Myers-Briggs focuses on the ways people take in information, or perception; the ways people make decisions, or judging; the ways people perceive the world, sensing vs intuition; and the ways people reach conclusions about the world, thinking vs feeling (Claxton and Murrell, 1987).

Other cognitive style research has focused on the differences between people who are reflective vs impulsive in decision-making; those who think analytically (parts specific, objective) vs relationally (global, subjective), and those who are splitters vs lumpers (similar to field independent/dependent and analytical/relational)(Claxton and Murrell, 1987; Kirby, 1979).

Messick (1976) describes twenty dimensions of cognitive style. Keefe (1979) divides these into two main categories of processes of 1) reception, and 2) concept formation/retention. Reception styles are those styles involved with the perception and analysis of data, and include such processes as perceptual modality preferences--preferred reliance on different sensory modes to take in information-- and field independence vs dependence. Concept formation and retention styles deal with problem solving, hypothesis generation, and memory processing. These include such processes as reflection vs impulsivity, and analytical vs relational thinking. Claxton and Murrell (1987) divide cognitive style somewhat differently, into levels they call 1)personality and 2) information processing. The personality level is the "deepest", or least amenable to change, and includes processes such as field dependence/independence, reflectivity vs

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impulsivity, and the Myers-Briggs inventory characteristics. The information processing level

is slightly more changeable, and includes processes such as those described by Kolb and Gregorc.

Keefe (1979) describes "learning style" as a general term for the conglomorate of an

individual's way of learning, including all of his/her cognitive, affective, and physiological styles.

He defines "affective style" as encompassing "those dimensions of personality that have to do with

attention, emotion, and valuing"...a network of "motivational processes viewed as the learner's

typical mode of arousing, directing, and sustaining behavior" (p.11). Examples of this, according

to Keefe, include such variables as need for structure, curiosity, persistence, level of anxiety,

frustration tolerance, locus of control, achievement motivation, etc. This definition is similar to

that of Krashen, (1982), who uses the term "affective variables" to refer to such characteristics

as learner motivation, self-confidence, and anxiety.

"Physiological styles", by Keefe's definition, are "biologically-based modes of response that

are founded on sex-related differences, personal nutrition and health, and accustomed reaction to

the physical environment" (1979, p.15). Included in this are such factors as time rhythms,need

for mobility, and level of light, temperature, and sound.

In differentiating between the terms "learning strategy" and "learning style", Schmeck

(1983, p. 233) has stated that learning style is "a predisposition on the part of some students to

adopt a particular learning strategy regardless of the specific demands of the learning task. ..a

style is simply a strategy that is used with some cross-situational consistency". Reid

(1987, p.89) similarly states that learning style is "a pervasive quality in the learning

strategies or learning behavior of an individual " that remains constant even though the content

varies. The term "learning strategies", according to Reid (1987), refers to the methods

employed by a learner in mastering material (e.g. review, monitoring, practice, negotiation of

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meaning). Keefe (1979, p.4) defines styles as " hypothetical constructs that help to explain the learning (and teaching) process... persistent qualities in the behavior of individual learners regardless of the teaching methods or content experienced." The idea of pervasiveness or consistency in learning style seems to be a theme common to all these various definitions. R. Dunn (1983, p. 496) has differentiated between the two terms by stating that learning style is "the way individuals concentrate on, absorb, and retain new or difficult information or skills..not the materials, methods, or strategies that people use to learn; those are the resources that complement each person's style". The difficulty here lies in distinguishing between what is meant by "the way individuals concentrate on, absorb, and retain new or difficult information or skills" apart from "materials, methods, or strategies that people use to learn" (Tarone, pers corr).

Other definitions of learning style include the aforementioned by Keefe (1979. p. 4): "cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment "; or that of Gregorc (1979, p. 234): "distinctive behaviors which serve as indicators of how a person learns from and adapts to his environment". Claxton and Ralston (1978, p.7) have defined learning style as "a student's consistent way of responding to and using stimuli in the context of learning". Claxton and Murrell (1987)believe that Keefe's definition is probably the best, and that "learning style" is a general, inclusive term; they recommend that it be approached from two levels of cognitive style, personality and information processing, as well as levels they term social interaction (including aspects similar to the affective style discussed above) and instructional methods (including inventories that "map" styles of students/instructors and can be used in an attempt to match learning styles; cf. Cognitive Style Mapping Inventory, Joseph E. Hill, 1964). The

Learning Styles Inventory, by Dunn, Dunn, and Price (1975) also takes a multi-dimensional approach, differentiating among twenty-one aspects of learning style, including environmental, emotional, sociological, physical, and psychological elements.

More research is needed to lead to a more refined theoretical basis for a working definition of learning style (Claxton and Murrell, 1987). The definition as it now stands is still somewhat vague, and emcompasses so much. It is therefore of utmost importance that anyone writing about or doing research on learning style specify exactly what aspect of learning style is being studied.

For this study I chose to concentrate on the perceptual learning style preferences of beginning language students, following a study designed by Reid (1987). Reid defines perceptual learning style as "the variations among learners in using one or more senses to understand, organize, and retain experience" (p.89). Perceptual preferences are treated as a part of the reception category in Keefe's breakdown of cognitive style (1979); Keefe describes three perceptual modes: 1) kinesthetic or psychomotor, 2) visual or spatial, and 3) auditory or verbal. R. Dunn (1983) treats perceptual learning style as a subcategory of the physical learning style elements, and divides this subcategory into four perceptual modalities . They are:

1. Visual learning: reading, studying graphs, charts, pictures

2. Auditory learning: listening to lectures, audiotapes

3. Kinesthetic: experiential, total body involvement

4. Tactile: hands-on experience

These perceptual learning style elements are part of the Learning Styles Inventory (Dunn, Dunn, and Price, 1975), a comprehensive, self-reporting questionnaire for grades 3-12, and the Productivity Environmental Preference Survey (PEPS), designed by Price, Dunn, and Dunn (1982) for adults.

James and Galbraith (1985, p. 20) define the perceptual modalities as "the means through which information is extracted from the environment by the senses ", and divide perceptual learning style into seven modalities, distinguishing print (reading, writing) from visual (observation) and including modalities called interactive (verbalization) and olfactory (smell). James and Galbraith use a self-report inventory and a questionnaire designed to help learners become more aware of their preferred modalities.

Reinert (n.d.) has developed a self-report inventory (ELSIE) based on four perceptual modalities; Visualization, Written Word, Sound-Understanding (listening), and Feeling (activity). The test administrator says a word out loud, as the individual notes whether s/he reacts to that word with 1. a mental picture of some object or activity, 2. a picture of the word spelled in his/her mind, 3. hearing the word and understanding the meaning by its sound, or 4. having some physical or emotional feeling about the word.

An explanation following Reid's questionnaire (1987) describes and elaborates on the four perceptual modalities of Dunn as follows (credited in part to the C.I.T.E. Learning Styles Instrument, Murdoch Teacher Center, Wichita, Kansas 67208):

VISUAL: "You learn well from seeing words in books, on the chalkboard, and in workbooks. You remember and understand information and instructions better if you read them. You don't need as much oral explanation as an auditory learner, and you can often learn alone, with a book. You should take notes of lectures and oral directions if you want to remember the information."

AUDITORY: "You learn from hearing words spoken and from oral explanations. You may remember information by reading aloud or moving your lips as you read, especially when you are

learning new material. You benefit from hearing audio tapes, lectures, and class discussion. You benefit from making tapes to listen to, by teaching other students, and by conversing with your teacher."

KINESTHETIC: "You learn best by experience, by being involved physically in classroom experiences. You remember information well when you actively participate in activities, field trips, and role-playing in the classroom. A combination of stimuli—for example, an audio tape combined with an activity—will help you understand new material."

TACTILE: "You learn best when you have the opportunity to do "hands-on" experiences with materials. That is, working on experiments in a laboratory, handling and building models, and touching and working with materials provide you with the most successful learning situation. Writing notes or instructions can help you remember information, and physical involvement in class-related activities may help you understand new information." [Underlining mine—note here the similarity to the kinesthetic definition].

II. IMPORTANCE OF IDENTIFYING PERCEPTUAL LEARNING STYLE

Why are there differences in learning styles? Gregorc (1979) attributes this to three influences; 1. genetic or biological, 2. environment and culture, and 3. properties of the self, or soul. There is still debate over how much of a person's learning style is adaptable and how much is permanent or fixed (Reid, 1987); but in all cases, the importance of making both students and teachers aware of perceptual learning style preferences seems evident. A table of results from ten studies in R. Dunn (1983) shows in each case how native English speakers learned better

when taught through their different preferred learning styles (including perceptual), and conversely, how students who were mismatched achieved significantly less, from elementary school through the college level. "Research has verified repeatedly", states Dunn,"that when new information is introduced through the strongest perceptual strength, reinforced through the second, and used creatively, statistically significant increases occur in academic acheivement" (p. 499). Other theorists agree that since perceptual learning style has proved to have a direct impact on how much information is processed and retained, awareness and utilization of an individual's preferred perceptual learning style will lead to more effective learning (James and Galbraith, 1985).

Gregorc (1979) in particular writes about the difficulties of alignment; some students can align themselves more readily to a given teacher's style, using both natural (inherent) and artificial (learned) means of adapting to the class. Other students are not as adept in this alignment process, and fall behind when their learning styles are mismatched. Oftentimes discipline problems can be traced to a mismatch in learning styles.

III. RELEVANCE OF PERCEPTUAL LEARNING STYLE TO TEACHING AND LEARNING ENGLISH AS A SECOND LANGUAGE

So far, research on learning style has been done almost exclusively from a white, Western middle-class perspective and value system (Claxton and Murrell, 1987). Claxton and Murrell state that the most pressing need on the research agenda today is to learn more about the learning style preferences of minority students: "This void in the literature is particularly serious in light of the increasing numbers of minority and international students higher education will serve" (p.78)..."As our culture becomes more pluralistic, higher education will have to face

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squarely its shortcomings in dealing adequately with its diverse clientele...Because the purpose of

studying learning style is to acknowledge and understand individual differences, the cultural

antecedents of style will have to be addressed"(p. 71). In the United States, for example, studies

have shown the education system to be primarily analytical (parts-specific, objective, material

can be learned out of context) whereas U.S. minority cultures have been shown to favor a more

relational way of learning (global, subjective, context is considered) (Cohen, 1969;

Hale-Benson, 1982). A study with Native American students showed the Native Americans to be

more visual and less verbal than white Americans at the same school, who were more auditory and

more verbal (Claxton and Murrell, 1987). Mexican-American cultures have been found to be

very field-sensitive, while Anglo schools encourage field independence that may conflict with

cultural values (Kirby, 1979).

Research with speakers of languages other than English has also shown that different modes of

thinking (cognitive styles) characterize different cultures, and ESL learners with unique

learning style characteristics may expend most of their time and effort just trying to adapt to a

new learning situation (Reid, 1987). As Reid writes, "Preuniversity ESL students, with their

variety of language and cultural backgrounds and their differences in age and previous education,

often come together in intensive English language programs in which they are taught

homogeneously by teachers who have little knowledge of learning styles. ESL instructors often

use methods and materials that have been developed with the learning needs of native speakers of

English in mind. In many cases, neither students nor teachers are aware that difficulty in

learning class material, high frustration levels, and even failure may not rest solely in the

material itself" (p. 91).

Research in second language learning before 1987 includes work on some areas of cognitive

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styles, affective styles, culture-specific modes of learning and cultural factors, and learning strategies (Reid, 1987). Reid's study, however, is the first published research describing the perceptual learning style preferences of non-native speakers of English (NNSs). Perceptual learning style is an area of learning style that is relatively defineable; research on it can be narrowed down and focused . It is observable and measurable; self-report questionnaires can be used (research done so far on learning style with native speakers of English (NSs) shows that most students can correctly identify their learning style, including perceptual preferences) (Dunn, 1984). Finally, because of the implications drawn from perceptual learning style work done on U.S. ethnic groups, it seems evident that further research in this area will have relevance to the teaching and learning of English as a Second Language.

IV. REID'S STUDY AND RESULTS

Reid (1987) reports on a study she conducted to examine perceptual learning style preferences of NNSs and to compare them to each other and to those of NSs. Reid developed a self-report questionnaire of 30 questions with randomly arranged statements (5 each) in six areas of learning style preference; the four perceptual modalities of Dunn--visual, auditory, kinesthetic, and tactile; and two additional areas, individual vs. group learning. The survey was validated by the split-half method; correlation analysis was done on an original set of 60 statements (10 per learning style) to determine the 5 statements that would remain within each subset. Reid mailed these questionnaires out to 43 university-affiliated intensive English language programs across the United States, and received a total of 1,234 completed questionnaires from respondents representing 98 countries, 29 majors, and 52 different language backgrounds. One hundred and fifty-four NSs from Colorado State University also

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completed the survey. Reid statistically analyzed these reponses along with eight student

variables: age, first language, TOEFL score, length of time in the U.S., length of time studying

English in the U.S., class (graduate or undergraduate), major, and sex. Preference means for

each set of variables were divided into three categories: major, minor, or negative learning style

preferences.

The results of Reid's study showed that the ESL students in this study overall strongly

preferred kinesthetic and tactile learning styles; native speakers of English, on the other hand,

had a lower preference mean in the area of kinesthetic learning (although it was still a major

learning style preference), and were less tactile than NNSs of all language backgrounds studied.

Most groups also showed a negative preference for group learning; NSs rated group work lowest

of all.

Nine language groups were analyzed and compared: Arabic, Spanish, Japanese, Malay, Chinese,

Korean, Thai, Indonesian, and English. The breakdown by language group showed these findings:

VISUAL: Korean students were the most visual; Arabic and Chinese students were also strong

visual learners. NSs had only a minor visual preference, in contrast with previous perceptual

learning style research that shows visual preferences for NSs as a major style (Reid, 1987).

AUDITORY: Arabic, Chinese, Korean, Indonesian, and English speakers chose auditory learning

as a major learning style preference; Thai, Malay, and Spanish students chose auditory learning

as a minor learning style. Japanese students were the least auditory of all learners.

KINESTHETIC: All language groups identified kinesthetic learning as a major learning style

preference except the Japanese, for whom it was a minor learning style preference. Even the NSs

indicated that kinesthetic learning was a major learning style preference for them, a result that

seems surprising given traditional U.S. classroom emphasis on visual/auditory learning.

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TACTILE: All groups showed a major learning style preference for tactile learning except the Japanese, Indonesian, and English, for whom it was a minor learning style preference. NSs had the lowest preference means of all groups in this area.

GROUP VS INDIVIDUAL : Every language group analyzed showed a minor or negative preference for group work. NSs had the lowest preference mean for group work.

Reid found that the graduate students in this study had a significantly greater preference for visual and tactile learning than the undergraduates; undergraduates were significantly more auditory than graduates. Both undergraduates and graduates had strong preferences for kinesthetic and tactile learning. Males also preferred visual and tactile learning significantly more than females. All six major fields reported (Engineering, Business, Humanities, Computer Science, Hard Sciences, Medicine, and Other) showed kinesthetic learning as a major learning style preference; group learning was a negative learning style in all majors except computer science. Other variations occurred by major; this is consistent with NS research that has identified certain major fields as being more compatible with certain cognitive styles (Reid, 1987). Reid suggests future research that focuses on the learning style preferences of NNSs in particular major fields.

Significant differences did not occur by age or TOEFL score, but Reid notes two interesting trends: the older a student was, the higher were his/her preference means for visual, auditory, kinesthetic, and tactile learning; and those with higher TOEFL scores had preferences more similar to the NSs.

It is intriguing to note that the perceptual learning style preferences of the NNSs who had studied and lived in the U.S. the longest more closely resembled the perceptual preferences of NSs in Reid's study. For example, the longer students had lived in the U.S., the more auditory was

their stated preference; those who had been in the U.S. more than three years were significantly

more auditory in their stated preferences than those who had spent less time in the U.S.

This raises the question, Reid notes, of whether students who have more experience in the U.S.

classroom adapt themselves to auditory learning (still an artificial modality for them), or

whether they in fact become more auditory (changing natural modalities). There is evidence

from research done with native speakers of English that perceptual preference evolves for most

students from the tactile/kinesthetic modality to the visual/aural modality as the learner

matures (Keefe, 1979; R. Dunn, 1981; R. Dunn, 1983). Dunn (1981) reports that

kindergartners tend to be strongly tactile/kinesthetic; around grade 3-4 the visual modality

begins to develop, and by grade 5-6 most children begin to become auditory (girls become

auditory earlier and faster than boys). If young NS children experience a change in their

preferred learning style as they mature, might it not also be possible, as Reid suggests, that NN

adult learners of English also experience a change in preferred learning style; in fact, might it

not be possible that beginning language learners in general could have learning style traits in

common that change as they become more proficient in the second language, or more comfortable

with the second culture? Further research is needed to address these questions.

V. RESEARCH DESIGN

The study I designed and conducted is a beginning attempt to determine whether or not there are

learning style characteristics particular to language learners in general. Although Reid collected

data from NSs in her study, the survey instrument was designed for subjects to respond to

questions "as they apply to your study of English", and so the NSs responding would not

necessarily be using the same frame of reference (second language study) as the NNSs.

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A. Subjects

I decided to administer a questionnaire to three groups of students. The three groups were:

1. American students learning French at The American College in Paris, France, or similar French as a Second Language programs in Paris, Fall 1988. Betsy Parrish, an M.A. graduate from the University of Minnesota, assisted me in collecting this data. Thirty-one American students completed surveys that could be used for this study. They are represented on the table from A-1 (least # of years of French) to A-31 (most # of years of French).

2. Japanese students enrolled in the Summer Intensive English Language and Orientation Program (SIELOP), University of Minnesota, Summer 1988. There were 22 Japanese SIELOP students who completed the questionnaire, represented on the table from J-1 to J-22, from the lowest level of instruction (01) to graduate student level (D). The breakdown by section was as follows: J-1 through J-3 = 01; J-4 through J-8 = 02; J-9 through J-16 = R; J-17 through J-22 = D.

3. Japanese Teachers of English participating in the University of Minnesota's JET program, Summer 1988. These teachers all had a considerable number of years experience both learning and teaching English, and so were not gradated on the table from lowest level to highest level.

B. Instrument

I corresponded with Reid, and obtained a copy of the questionnaire she designed and administered for her study, the self-scoring sheet and explanation supplement that accompanied it, and a description of the norming process she went through. In reading through the questionnaire, however, I had some misgivings about the wording of some of the questions; for

example, most of the questions use comparatives without the relative clause: "When the teacher tells me the instructions I understand better ". (Better than what? Better than if I don't get any instructions at all?) I spoke with Reid about this, and she said she had initially designed the questions with the relative clause ("better than if I read the instructions", for example) but that when she went through the questions one by one with several NNS informants, she was told that the sentences were too complicated, and would be easier understood without the relative clause. I also was concerned about the abundance of ambiguous words such as "something", "someone", "things", e.g. "When I do things in class, I learn better"; and the use of "understand" as in "I understand better when I read instructions", since "understand" could relate to a language problem rather than a learning style preference. I finally decided to design a self-report questionnaire similar to that designed by Reid, with questions representing the four perceptual modalities (visual, auditory, kinesthetic, tactile) as well as group vs individual learning, but to make some modifications to account for the above concerns. By administering the questionnaire in the subject's first language I hoped to eliminate any misinterpretation of the questions, as well as any bias from students' trying to translate as they took the questionnaire.

The first decision to make was regarding the format of the questionnaire. Initially I attempted to design a forced-choice questionnaire, with pairs of sentences in juxtaposition describing aspects of two different perceptual modalities, and a scale between them to mark which style a person favored over the other. In this way I hoped to show more clearly which preferences stood out above others for an individual. The difficulty in this procedure, however, was in trying to create reasonable pairs of opposites and still stay true to the nature of the modality. Some pairs were relatively easy: "When I read the instructions, I remember them better" vs "When I hear the instructions, I remember them better "; others were more awkward. The questionnaire ended

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up being general, ambiguous, and much too repetitive, exactly what I was trying to avoid. It seemed likely that subjects would answer down the middle on most items. So I switched over to the 5 point scale used by Reid, where each item requires a person to choose from 5 responses in a range from "Strongly Agree" to "Strongly Disagree". I considered eliminating the middle reponse, "Undecided", and forcing subjects to make a middle choice between "Agree" and "Disagree", but decided it was more realistic to include all five values, since there were certain to be questions that subjects would not have an opinion about.

After studying several existing questionnaires and collecting/formulating at least six or seven questions for each perceptual modality, and after discussing the issues involved with several colleagues in the field of Education, I met with Charles Johansson, PhD. from the Office of Measurement, University Counseling Services, Univ of MN to go over the questions and to discuss what I was attempting to measure. He discussed each question in turn with me, gave his interpretation of it and made suggestions on how to better the questionnaire. He noted that I should combine group/individual preferences into one category, since they represent opposite ends of the same scale. He also suggested that I account for response set (the tendency of some individuals' responses on a value scale to be all on one side of the scale, which suggests they have not read the questions thoroughly and are responding in a"set" mode). Questions #1, 6, and 9 on my questionnaire and the accompanying values in scoring are reversed to account for this. Question 6, for example, "I like to stay seated in class", is negative kinesthetic and so a response of "Strongly Agree" in this case would have a score value of 1, and "Strongly Disagree" would have a score value of 5.

Dr. Johansson made many suggestions on the wording of each question, and his input helped me to narrow each category down to the five questions I used for the final version. Ideally at this

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point it would have been best to run a pilot study with 7-10 possible question forms, do correlations, and choose the most reliable questions for the final version. But for this study I did not do this. Besides time constraints, I found it difficult to find/write even five questions that covered the same area of perceptual modalities without sounding repetitive. The questions I finally chose used the verbs learn vs remember vs prefer or like to vary the form and meaning somewhat. Some questions deliberately contrast one preference with another, as in #16: "I remember more of what I hear than what I read" (+Auditory, -Visual), and #14: "I would rather learn by experience than by reading or hearing about a subject" (+Kinesthetic, -Visual, -Auditory). Although this makes these questions longer and more difficult to understand, I hoped this would give information similar to the forced-choice format.

I randomly arranged the final set of twenty-five questions into a two-page questionnaire, including an introductory page almost identical to Reid's, requesting background information from the subject (Name, Age, Native Country, Native Language, Sex, Years Studying English/French, Years in the U.S./France, Major Field or Occupation, Number of Years in College/Degrees) and explaining very generally what the questionnaire is about (Appendix). The introduction specifically asks that the respondent answer the questions as they apply to his/her study of the language. This is important, in that I wanted to compare perceptual learning style preferences specifically as they relate to language learning.

The next major project was getting the questionnaire translated into Japanese, which I hoped would reduce the chance of error due to a misunderstanding of the questions themselves. For this I relied on two Japanese students, one a JET program participant who was recommended by her instructor and who did the initial translation, and the other a Japanese graduate student at the University of Minnesota who checked the translation and typed it up on the computer. The

questionnaire was administered to the 0-1 SIELOP class first as a sort of trial run; one of the students complained about the questionnaire and didn't want to take it. I went back to the typist and we went over each question again, trying to determine where the difficulties lay. My typist felt that there were two overriding concerns: One, the difficulty with translating some of the concepts, which had no practical equivelant in Japanese classroom experience, for example, #7: "When I can get up and move around in class I seem to learn best" is a strange concept to the Japanese, since this type of behavior is not typical for students. The second concern my typist had was with administering a questionnaire to Japanese, whom she said were "not good subjects" and who did not like taking questionnaires in general. This was also mentioned to me later by a colleague who stated that the Japanese tend to be "highly critical" subjects and may resist taking questionnaires or being singled out for study.

Other language difficulties the typist and I discussed while reworking the translation included the following:

#5: "I prefer to learn" needs to be compared to something, as in "I prefer_____ over _____"

We substitued "I like to learn" in this case.

#6,19, 20, 24: Need to distinguish between "classroom/class"meaning the physical space, vs

"classroom/class" meaning the group of people, in translation.

#8,etc?: Relative clause makes some questions wordy in translation; placed at the

beginning of the sentence in the first translation, with commas.

#10: Emphasis needed to distinguish between "with hands" or "with my own hands" in Japanese

#17: "new information" sounds strange in translation; we substituted "new things"

#20: substituted "drama" for "role plays"

My typist also added a pronoun antecedent to the beginning of each question in the second version in a further attempt at clarification. This, however, was not appreciated by at least one group of students who took the second version (SIELOP-D, graduate students). Section D of SIELOP, in fact, was the only group that complained about the second version of the questionnaire. Comments I received from them suggested that the translation was still awkward, "too literal", for example, in the characters used for the words"Directions" and "Undecided". They also complained that certain questions were ambiguous--in particular, #4,10, and 19, and some even asked to see the English version before deciding on their response! But in most cases the English version did not satisfy them either.

At this point I asked John Plagens to help me out with the translation. John is an American graduate student in TESL at the University of Minnesota who has lived many years in Japan, and is fluent in Japanese. He read the second Japanese version of the questionnaire back to me, in English, without having seen the English version first. I was surprised (and relieved) that his translation from Japanese back into English followed the exact letter of the original English version and in no case did John hesitate or seem unsure about the meaning of the translation. I was satisfied at least that the meaning I intended was there; this still left unexplained, however, the reaction of the Japanese graduate students. It is significant to note that the Japanese English Teachers (JET) did not have any questions or complaints when they took the questionnaire.

VI. RESULTS AND DISCUSSION

The questionnaires were scored according to a scale developed by Reid (appendix). Each response was given a value from 5-1, with 5 being the response most favorable to the modality being questioned. The five responses for each modality were added, and then multiplied by two.

Major learning style preferences were considered to be final totals that were between 38-50; Minor learning style preferences, between 25-37; and Negligible preferences, between 0-24.

Reid presented the data in her article (1987) in the form of preference means; however, it is unclear from the article how the means were arrived at. Figuring the means before the total responses are multiplied by two, for example, should result in a major learning style preference scale from 19-25, but her table lists major preferences from 13.5 and above. I still felt I could compare relative preference means in my study to Reid's, and so I used the scores I had arrived at by the method described above. The results are shown in Table I:

TABLE I - MEANS

PERCEPTUAL LEARNING STYLE PREFERENCE MEANS
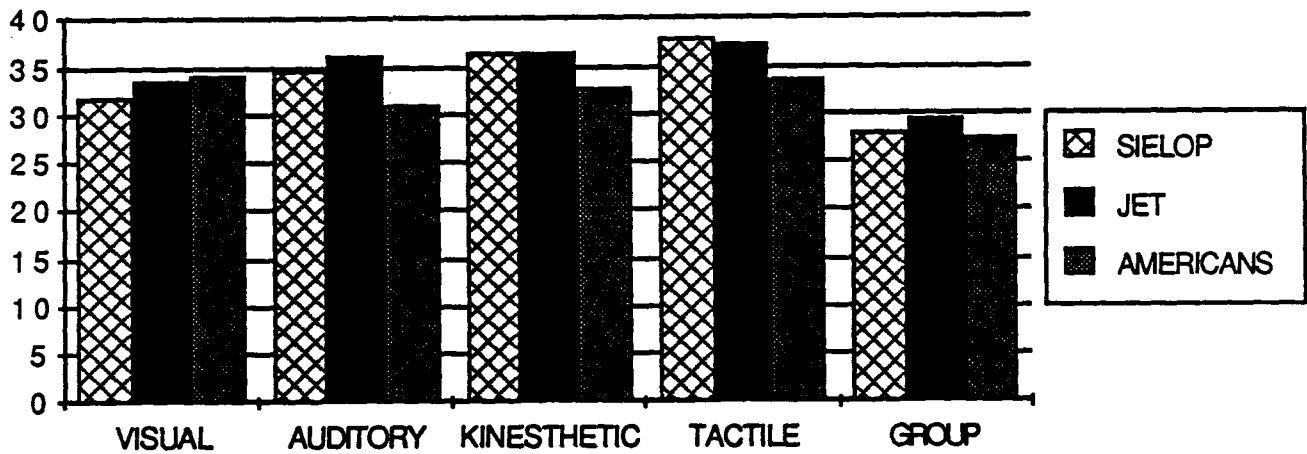
Preference Means

	A	B	C	D	E	F
1		VISUAL	AUDITORY	KINESTHETIC	TACTILE	GROUP
2	SIELOP	31.73	34.82	36.55	37.91	28
3	JET	33.71	36.1	36.48	37.24	29.52
4	AMERICANS	34.26	30.97	32.58	33.61	27.36

Preference Means: All three groups (Japanese JET, Japanese SIELOP, and Americans) had all minor preference means, except for tactile learning for the SIELOP students; at 37.91 (rounded up to 38) it was a major preference means. The Japanese groups were only .07 apart on kinesthetic (36.55-SIELOP, 36.48-JET) and less than 1.00 apart on tactile preference means (37.91-SIELOP, 37.24-JET). Both Japanese groups were higher in auditory, tactile, kinesthetic, and group preferences than the Americans. The Japanese groups were lower than the Americans only in visual preferences (SIELOP-31.73, JET-33.71, Americans-34.26).

The following tables show the results of my study by the percentage of major, minor, and negligible learning style preferences for each group. Although Reid did not present her results in this manner, I thought it would be another interesting way to look at the data. Table II shows, for each modality, the percentage of students in each group with Major learning style preferences:

TABLE II - MAJOR

MAJOR LEARNING STYLE PREFERENCE:
SCORE OF 38-50
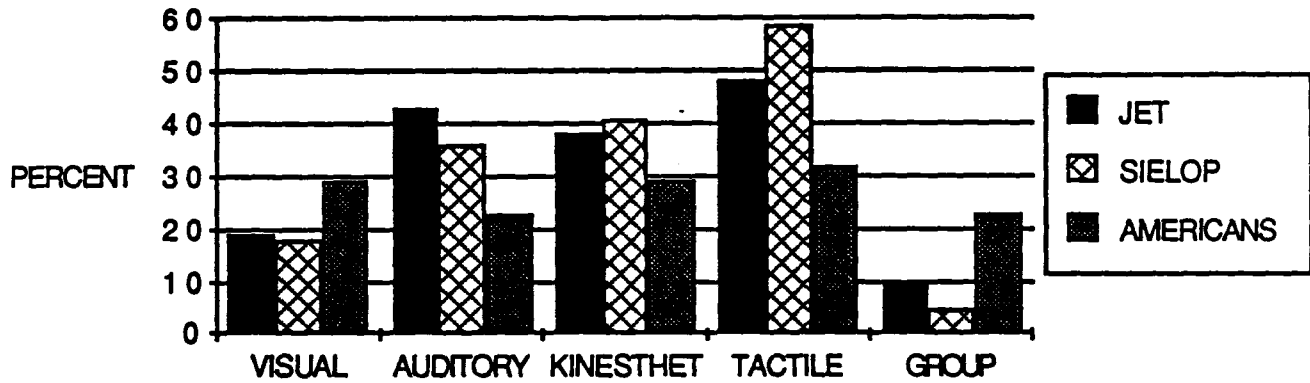
Major Preferences

	A	B	C	D	E	F
1		VISUAL	AUDITORY	KINESTHETIC	TACTILE	GROUP
2	JET	19	43	38	48	10
3	SIELOP	18	36	41	59	5
4	AMERICANS	29	23	29	32	23

Major learning style preference: The Japanese showed a decided preference for some modes over others: both Japanese groups had quite a difference in spread from their lowest major preference to their highest, (JET-10% group to 48% tactile, SIELOP-5% group to 59% tactile) The Americans, on the other hand, had much less of a spread in their major preference percentages (from 23% group and auditory to 32% tactile). JET students and the SIELOP students were very similar in major learning style preferences. Tactile learning was the highest category of major preference for both Japanese groups, although tactile learning also showed the most variance between these two groups, with SIELOP preferring tactile learning about 11% over JET. American students lagged behind SIELOP students by about 27% in tactile preferences; however, tactile learning was the highest category of major preference for the Americans as well. The Americans tested were higher at 29% than both Japanese groups in their visual preferences (Jet-19%, SIELOP-18%), which is consistent with perceptual learning style research cited earlier, but the Americans were lower than both Japanese groups in their auditory preferences, which was not expected. Americans were also the lowest group in kinesthetic preferences, although the range here was smaller, from 29% (Americans) to 38% JET to 41% (SIELOP). Group learning was the lowest percentage major preference for all three groups, although for the Americans it tied with auditory learning at 23%. Of the SIELOP students, only 5% had a major preference for group learning; JET students, only 10%. Auditory, kinesthetic, and tactile learning styles were rated much higher by the Japanese (both JET and SIELOP) than visual and group learning.

Table III shows Minor learning style preferences:

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TABLE III - MINOR

MINOR LEARNING STYLE PREFERENCE:
SCORE OF 25-37
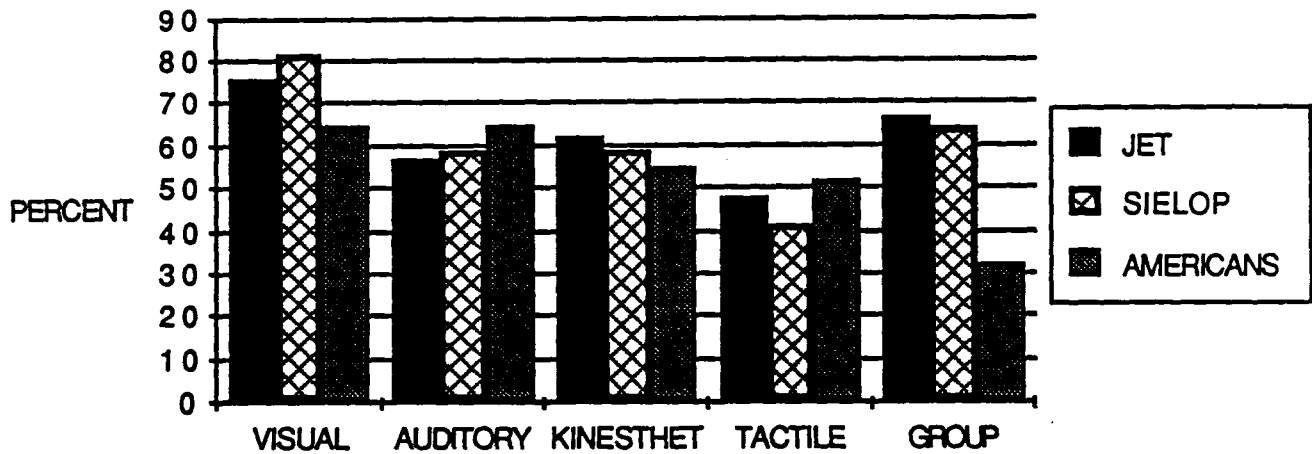
Minor Preferences

	A	B	C	D	E	F
1		VISUAL	AUDITORY	KINESTHETIC	TACTILE	GROUP
2	JET	7 6	5 7	6 2	4 8	6 7
3	SIELOP	8 2	5 9	5 9	4 1	6 4
4	AMERICANS	6 5	6 5	5 5	5 2	3 2

Minor learning style preference: The percentages of the minor learning style preferences were higher overall than those for the major learning style preferences. Visual, auditory and kinesthetic learning were minor preferences for a majority of students in each of the three groups tested. Visual learning style was the highest category for each group, from SIELOP with 82% preference to JET with 76%, to the Americans with 65% preference (for the Americans, visual and auditory tied as the highest minor preference). The three groups showed more similarity in minor than in major learning style preferences; minor auditory and kinesthetic percentages, for example, range less than 10% for the three groups. Both Japanese groups were highest in the visual and group categories; both Japanese groups were lowest in the tactile category. The Americans, on the other hand, were higher than the Japanese in the auditory and tactile categories and lower than the Japanese in the group category, the reverse of the major learning preference percentages.

Table IV shows Negligible learning style preferences:

TABLE IV - NEGLIGIBLE

NEGLIGIBLE LEARNING STYLE PREFERENCE:
SCORE OF 0-24
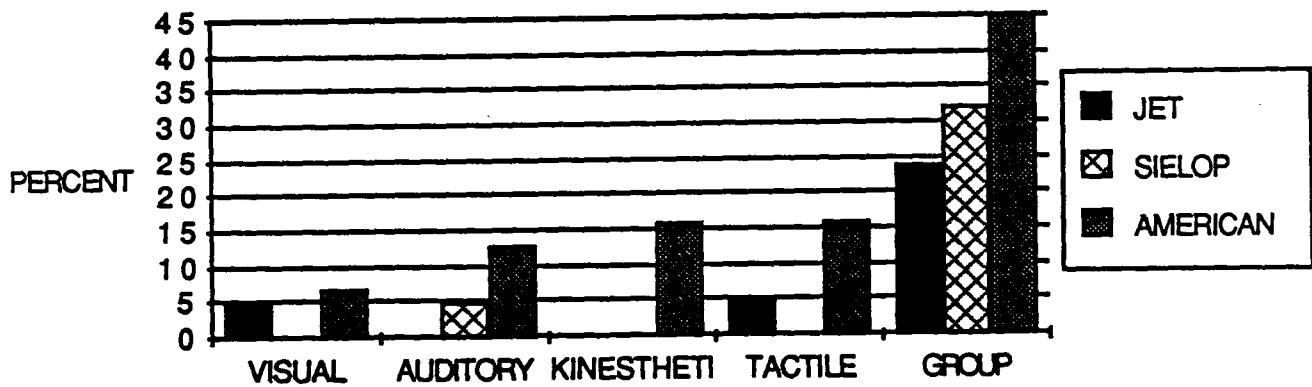
Negligible Preferences

	A	B	C	D	E	F
1		VISUAL	AUDITORY	KINESTHETIC	TACTILE	GROUP
2	JET	5	0	0	5	2 4
3	SIELOP	0	5	0	0	3 2
4	AMERICAN	7	1 3	1 6	1 6	4 5

<u>Negligible learning style preference:</u> The Americans had a higher percent of negligible learning style preferences than either Japanese group, ranging from 7% for visual preferences to 45% for group learning. For the Japanese, the only category to receive more than 5% negligible preference was group learning, with 24% for JET and 32% for SIELOP.

<u>Comparison to Reid's Study:</u> In Reid's study the Japanese had minor preference means in tactile (the highest means) , kinesthetic, auditory, and visual learning; group learning had a negligible preference means. The English speakers had a major preference means for auditory learning (the highest means), and kinesthetic learning; minor preference means for tactile and visual learning, and a negligible preference means for group learning. In my study all three groups had all minor preference means except for tactile learning for the SIELOP students when rounded up to 38 (it was 37.91), a major preference means. In Reid's study the Japanese had higher visual and tactile preference means than the English speakers, and lower auditory and kinesthetic preference means. Except for the tactile preference means, this is the reverse of my findings, which show both Japanese groups to be higher in auditory and kinesthetic preferences than the Americans, and lower in visual. Both studies show the Japanese to be higher in tactile preferences than the English speakers, and both studies show group learning to be the lowest preference means for both Japanese and Americans (with Americans having the lowest preference for group work).

Reid found the Japanese to be the least auditory of the language groups tested, whereas in my study their auditory preference means were higher than the Americans'. Reid found the Japanese to be the least kinesthetic as well; the NSs in her study were also low kinesthetic (second to last) compared to the other language groups. But for both groups the kinesthetic means were still high

when compared to the other modalities. In my study the Japanese rated kinesthetic learning higher than the Americans did. In both studies the Japanese did not as a group have any major learning style preference. Reid notes that among all the NNS language groups in her study, the Japanese were most frequently significantly different from the others in their preferences.

In examining my results it is important to note that the questionnaire was not normed. Reid (pers corr) questions the reliability of questionnaires that are normed for NSs and used on NNSs, since she found significant differences in these two groups' responses when she was norming her instrument. A questionnaire that is not normed at all is certainly also open to criticism. As I scored the questionnaires I noticed certain items within a modality that seemed to often be answered inconsistently, for example, within the kinesthetic modality one Japanese SIELOP student rated question 7: "When I can get up and move around in class I seem to learn best" as Strongly Disagree, and question 19: "When I can participate in classroom activities I remember best" as Strongly Agree. Question 19 , question 14: "I would rather learn by experience than by reading or hearing about a subject" and question 20: "I enjoy learning in class by doing experiments or role plays" tended to be rated differently than question 7 and 6: "I like to stay seated in class" (scored in reverse). Cultural factors may enter in here as much as learning style preference. The Americans, however, also tended to respond lower to questions 6 and 7 in the kinesthetic group, while the JET teachers were more consistent within that modality.

Another area that I noticed some variation in response was in the group set, especially for the Americans. Question 3: "I like to discuss class materials with a group of students" seemed to get high responses even when other responses were negative group responses, such as "Strongly Agree" for question 1: "I accomplish more when I study alone than when I study with others". The Americans overall seemed to be the most varied in their responses within a modality. It would be

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an important next step in continuing this study to run correlations on question sets and to formulate another questionnaire based on the results. It is difficult to write questions that cover each modality without becoming too repetitious; it is even more difficult to determine what kinds of questions best measure the modality.

The results of both Reid's study and my own show that kinesthetic and tactile learning were important to both the American and Japanese studied; this is interesting, given that Americans have been traditionally taught with an emphasis on visual/auditory modes, and have been considered to be primarily visual/auditory learners as adults (Keefe, 1979; R.Dunn, 1981; R. Dunn, 1983). The low preference means for group work for NSs and Japanese in both studies also has interesting implications for the classroom, especially given today's emphasis in ESL on group work; as Reid states, "some reexamination of curricula and teaching methods by both ESL and university teachers [in regards to group work] may be in order" (1987, p.98). At least an awareness of these preferences can help a teacher to be aware of possible resistance to group work, perhaps allowing for a gradual easing into the mode rather than jumping into groups on the first day of class.

A factor I found difficult to control for in my study was length of time studying the language vs length of time spent in the second language culture. In my study the two Japanese groups were more similar in preference means to each other than to the Americans studied, even though the JET teachers had studied and taught English for many years. If learning style preferences related to second language study change over time, the critical factor is most likely that of being immersed in the second culture, since then the teaching methodology and other cultural factors would be possible influences. I had originally intended to study beginning language learners in a second language culture in order to get data to observe possible change over time. However, the

groups I chose to study were made up of individuals who, although they were relative beginners

in the second culture (JET teachers were in the U.S. for the first time Summer 1988; SIELOP

students were also studying in the U.S. for the first time Summer 1988; most of the Americans

in France had been there less than a year), were not necessarily beginners in studying the second

language (the JET teachers had at least nine years of studying and teaching English; the Americans

ranged from three months to nine years learning French). It would be interesting to control for

these variables, length of time in the second culture and length of time studying the second

language, to get more data on the possibility of change in learning styles over time.

VII. DIFFICULTIES WITH RESEARCH IN LEARNING STYLES

"Learning style diagnosis", according to Keefe (1979), "gives the most powerful leverage yet

available to educators to analyze, motivate, and assist students"(p. 132); yet, as Claxton and

Murrell (1987) point out, it is still underutilized, in part because of several factors :

1. The emphasis so far in the field has been on research rather than application, the

teaching and learning of learning styles.

2. The difficulty in definition (as was discussed earlier in this paper) and the confusion

of terms in the literature.

3. The subsequent vagueness regarding the issues involved, and the difficulty in accurate

and consistent assessment.

Gregorc (1979) lists some of the difficulties so far encountered with the use of learning style

diagnostic instruments; these include :

1. Exclusivity of the instruments; they focus on certain variables only.

2. The question of the reliability of self-reporting instruments. Dunn (1983) reports on

eight studies showing evidence that students were able to identify their own preferred learning style (including perceptual style). The Dunns found this to be especially true when an element was either a strong preference or strong dislike for the student. Other researchers, however, have questioned the self-reporting aspect of many learning style instruments, and in cross-cultural situations some students may be more inclined toward favorable responses because of their cultural background (Reid, 1987).

3. Some students may have adapted to using artificial modalities for so long that they may report these as preferred.

4. The attitude of the educator can influence the interpretation of the instrument, positively or negatively.

The ideal instrument, according to Grasha (1984), should include a frame of reference; is it to be used in relation to work? school? which class/subject? etc. It should have test/retest reliability, and construct and predictive validity. It should be internally consistent. It should result in greater learner satisfation, and superior performance; in other words, it should be translatable to instruction.

In addition, cross cultural assessments also must take into account the English level of the students and the effect this might have on their interpretation of a questionnaire given in English; for example, nuances of vocabulary (e.g. in using the Kolb inventory, which relies on choosing between words such as "conceptualization", "concrete" , "reflecting", etc.); and the possible interference of translation in reporting gut-level reactions to words (e.g. Reinert's ELSIE)[See Wederspahn and Barger (1988) for a discussion of idiomatic language in the Myers-Briggs questionnaire, and its impact on ESL students]. As I found in my study, even having the questionnaire translated into the first language of the subjects does not necessarily end

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ambiguities. Cultural factors can play a significant role, as with the Japanese SIELOP students' unfamiliarity with the concept of moving around a classroom. The JET program participants, on the other hand, had been spending the summer discussing the latest in American teaching methodology, and were familiar with the concepts in the questionnaire; they voiced no questions about the translation. Cultural attitudes towards taking questionnaires may also be a factor to take into consideration.

VIII. IMPLICATIONS FOR THE CLASSROOM

As Claxton and Murrell (1987) write, learning how to learn is an empowering experience, and the long term impact learning style can have is to lead to an "increase in achievement and self-confidence that comes about when faculty and students engage in an ongoing dialogue about how the student learns, how the teacher teaches, and how each can adapt to the other in the service of more effective learning" (p.54). The current accepted epistemology, or "way of knowing", in the United States is dominated by objectivism, which emphasizes detachment, analysis, and individual rather than communal learning. But many students coming from backgrounds other than Anglo may be more familiar and more comfortable with relational ways of knowing, depending more on the intuitive and subjective modes, which should also be honored in our schools.

Keefe (1979) has diagrammed the school learning process as a triangle of interaction between the learning environment, the teaching style, and the learning style of the student. Each area of the triangle needs to be fully explored and recognized for the role it plays in the process of learning. Dunn and Dunn (1979b) describe teaching style as being composed of nine elements:

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1. Educational philosophy

2. Student preferences

3. Instructional planning

4. Student groupings

5. Room design

6. Teaching environment

7. Teaching characteristics

8. Teaching methods

9. Evaluation techniques

The problem, according to Dunn and Dunn, lies in trying to isolate and emphasize certain points that are believed to represent "good" or "effective" instruction. Difficulty in objective interpretation, incorrect assumptions about what should be measured, and inappropriate instruments of measurement all contribute to the problem; however, even if these factors could be overcome, inattention to and mismatch of teacher/student learning style could nullify the effort. "Effective" teaching becomes to some extent a relative notion, dependent on the balance of Keefe's triangle of learning environment, teaching style, and learning style.

Dunn and Dunn suggest ways to make teachers more aware of and able to respond to a variety of learning styles (Dunn,R. and K.Dunn, 1979a and 1979b). Ellis (1979) describes how one elementary school successfully encouraged its teachers to accomodate alternative learning styles in the classroom, with the belief that having a variety of learning style elements in each class is a more realistic/less problematic approach than attempting to match students with teachers of a similar style. In fact, according to Claxton and Murrell (1987), most successful learning style

programs have "substantial" faculty development activities, to raise awareness of both faculty and student learning styles, and resources to develop curriculum to make use of this information.

Claxton and Murrell (1987) give examples of how a teacher might design tests with learning styles in mind: for example, during a multiple choice test, impulsive thinkers may not be able to be deliberate enough to carefully consider each question, and reflective thinkers may become immobilized with the task. Pressure seems to intensify a person's reflective/impulsive style, and multiple choice tests may not be very accurate for these reasons. Claxton and Murrell suggest instead questions that require a variety of forms of processing, such as those described in Kolb's learning style categories. Teachers who wish to accommodate a variety of perceptual learning styles in the classroom can make use of a combination of lecture/discussion, individual and small group work, board work, overhead, videotapes, audiotapes, role-plays, experiments, etc.

An awareness of differences in learning style can sensitize teachers to potential problems of match/mismatch, especially in an ESL classroom, where culture enters in as well (Reid,1987) At the same time, making students aware of learning style can help them understand and accept some of the difficulties they may experience in coping with a mismatch; students can also make choices to adapt or compensate for learning style differences. Paige (1987) equates effective learning to a "fit" between the learning style of a person, his/her personal qualities, and the learning style of a culture; he explains how an international student can assess his/her fit, then improve on and adjust his/her fit to the system.

Reid (1987) raises the question of whether teachers of ESL students should attempt to match the learning style characteristics of their students, possibly in order to lower their affective filter; or whether they should encourage NNS to adapt their preferences to those of NSs. The answer seems to be both. Through the use of an inventory, class discussion, and experience with a

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variety of learning styles, students and teachers both can come to appreciate and learn from their diversity while making the best possible use of alternative, complementary learning styles.

IX. CONCLUSION: IDEAS FOR FUTURE RESEARCH

In designing learning style research, according to Claxton and Murrell (1987), it is important to ask first about outcomes; what outcomes are desired? And then, what information regarding learning styles is needed to design curriculum to meet the desired outcomes? Claxton and Murrell emphasize the need for classroom research on learning style that is directly applicable to a particular group and time. Overriding all other needs at this time, in their opinion, is the need to study the learning styles of cultures other than Western, white middle-class culture, on whom most of the research has been done up to this point. Claxton and Murrell cite estimates that by the year 2000 at least one-third of Americans will be from cultures other than Anglo; instruments that account for cultural differences must therefore be developed.

Other important areas they suggest include research that would clarify the importance of a match/mismatch of student/teacher; and research looking at the connections between style, developmental stage, disciplinary perspectives, and epistemology. Especially noteworthy is the interaction between style and development; the awareness of stages a person must pass through, and the rate of change that can be expected given that, obviously, "students can only change as fast as they can change" (Claxton and Murrell, 1987, p.35). This needs to be considered by ESL instructors, given the observation (tentative as yet) that students may change or adapt their learning style preferences to conform more to that of the academic culture they are immersed in; the adaptation/change may take both time and patience. Teachers, Claxton and Murrell remind us, need to have respect for students' resistance, and encourage students, in a caring and respectful

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way, to move on and expand their preferences.

In the area of ESL, what is needed is further study to explore the learning style preferences of various cultures and language groups; further work on the development of valid and reliable instruments that can account for language and culture variables; further exploration of the change or adaptation in preferences that may take place as a person spends more time in the new culture; and most important of all, further research that can be directly applied to the classroom and to immediate teaching/learning concerns. For, to paraphrase Perry (1986), "Good teaching [and research] is derivative, born not of its own rules, but of those governing the process it serves".

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PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE

NAME_____AGE_____DATE_____

NATIVE COUNTRY_____NATIVE LANGUAGE_____

MALE_____FEMALE_____

How long have you studied French, and where?(include everything)_____

_____

How long have you lived in France?_____

What is your major field, or occupation?_____

Number of years in college_____Degrees_____

DIRECTIONS

People learn in many different ways. For example, some people learn primarily by seeing or by listening; some people prefer to learn by experience and/or by "hands-on" tasks; some people learn better when they work alone, while others prefer to learn in groups.

This questionnaire has been designed to help identify the way(s) people learn language best--the way(s) people prefer to learn a language.

Read each statement on the following pages. Please respond to the statements AS THEY APPLY TO YOUR STUDY OF FRENCH.

Decide whether you agree or disagree with each statement. For example, if you strongly agree, mark:

SA	A	U	D	SD

Please respond to each statement quickly, without too much thought. Try not to change your responses after you choose them. Please answer all the questions. Please use a pen to mark your choices.

Thank you for participating in this study.

	SA Strongly Agree	A Agree	U Undecided	D Disagree	SD Strongly Disagree

		SA	A	U	D	SD
1.	I accomplish more when I study alone than when I study with others.					
2.	I like to learn new information by hearing a record, tape, or lecture.					
3.	I like to discuss class materials with a group of students.					
4.	I learn best by listening to someone lecture or speak on a subject.					
5.	I prefer to learn by listening to lectures.					
6.	I like to stay seated in class.					
7.	When I can get up and move around in class I seem to learn best.					
8.	I learn better when I read the instructions than when the teacher tells me what to do.					
9.	I study best by myself.					
10.	I find learning easier when I can make something with my hands.					
11.	When I listen to lectures, I remember most of what I have heard.					
12.	I learn more by reading textbooks than by listening to lectures.					
13.	I like to learn by working with my hands.					
14.	I would rather learn by experience than by reading or hearing about a subject.					
15.	I would rather read than listen to the teacher lecture on a subject.					
16.	I remember more of what I hear than what I read.					
17.	I like to learn new information by viewing pictures or diagrams.					
18.	When I can draw or take notes I remember better than if I just listen or just read.					
19.	When I can participate in classroom activities I remember best.					
20.	I enjoy learning in class by doing experiments or role plays.					
21.	I learn more when I study with a group than when I study alone.					
22.	I like to learn by drawing or making a model of what I'm studying whenever possible.					
23.	I remember best what I see or read in books, photos, or diagrams.					
24.	In class I learn best when I work with other students.					
25.	I learn best if I draw or make relevant diagrams while I study.					

PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE   / Eliason, p. 2

SA Strongly Agree	A Agree	U Undecided	D Disagree	SD Strongly Disagree

	SA	A	U	D	SD
1. I accomplish more when I study alone than when I study with others.	1	2	3	4	5
2. I like to learn new information by hearing a record, tape, or lecture.	5	4	3	2	1
3. I like to discuss class materials with a group of students.	5	4	3	2	1
4. I learn best by listening to someone lecture or speak on a subject.	5	4	3	2	1
5. I prefer to learn by listening to lectures.	5	4	3	2	1
6. I like to stay seated in class.	1	2	3	4	5
7. When I can get up and move around in class I seem to learn best.	5	4	3	2	1
8. I learn better when I read the instructions than when the teacher tells me what to do.	5	4	3	2	1
9. I study best by myself.	1	2	3	4	5
10. I find learning easier when I can make something with my hands.	5	4	3	2	1
11. When I listen to lectures, I remember most of what I have heard.	5	4	3	2	1
12. I learn more by reading textbooks than by listening to lectures.	5	4	3	2	1
13. I like to learn by working with my hands.	5	4	3	2	1
14. I would rather learn by experience than by reading or hearing about a subject.	5	4	3	2	1
15. I would rather read than listen to the teacher lecture on a subject.	5	4	3	2	1
16. I remember more of what I hear than what I read.	5	4	3	2	1
17. I like to learn new information by viewing pictures or diagrams.	5	4	3	2	1
18. When I can draw or take notes I remember better than if I just listen or just read.	5	4	3	2	1
19. When I can participate in classroom activities I remember best.	5	4	3	2	1
20. I enjoy learning in class by doing experiments or role plays.	5	4	3	2	1
21. I learn more when I study with a group than when I study alone.	5	4	3	2	1
22. I like to learn by drawing or making a model of what I'm studying whenever possible.	5	4	3	2	1
23. I remember best what I see or read in books, photos, or diagrams.	5	4	3	2	1
24. In class I learn best when I work with other students.	5	4	3	2	1
25. I learn best if I draw or make relevant diagrams while I study.	5	4	3	2	1

SCORE SHEET

VISUAL

8 - _____
12 - _____
15 - _____
17 - _____
23 - _____

Total _____ X 2= _____

TACTILE

10 - _____
13 - _____
18 - _____
22 - _____
25 - _____

Total _____ X 2= _____

AUDITORY

2 - _____
4 - _____
5 - _____
11 - _____
16 - _____

Total _____ X 2= _____

GROUP

* 1 - _____
  3 - _____
* 9 - _____
 21 - _____
 24 - _____

Total _____ X 2= _____

KINESTHETIC

* 6 - _____
 7 - _____
14 - _____
19 - _____
20 - _____

Total _____ X 2= _____

Major LSP = 38-50
Minor LSP = 25-37
Negligible   0-24

知覚学習スタイルに関するアンケート

	強く同意	同意	中立	反対	強く反対
1．私は他人と学習するより一人でするほうがよくできる．					
2．私はレコードやテープや講義を聞いて新しいことを学ぶのが好きである．					
3．私は生徒達のグループと授業の教材について討論するのが好きである．					
4．私は他の人の講義や話を聞くことによって非常によく学べる．					
5．私は講義を聞くことによって学ぶほうが好きである．					
6．私は授業でじっと座っていることが好きである．					
7．私は教室で立って歩き回る時、最もよく学べるように思う．					
8．私は先生にすることを指示されるより自分で指示を読むときの方がよく学べる．					
9．私は自分自身ですると最も勉強できる．					
10．私は自分の手で何かを作ることができる時、学習は易しいと思う．					
11．私は講義を聞くと、今までに聞いたことは大部分思い出せる．					
12．私は講義を聞くことより、教科書を読むことによってより多く学べる．					
13．私は自分の手で作業することによって学ぶのが好きである．					
14．私は主題について読んだり聞いたりするより、体験によって学びたい．					
15．私は主題について先生の講義を聞くより読むほうがいい．					
16．私は読んだことより聞いたことの方をよく覚えている．					
17．私は絵や図表を見て新しい情報を学ぶのが好きである．					
18．私は聞いたり読んだりするだけより、描いたり書いたりする時の方がよく覚えられる．					
19．私は教室の活動に参加できる時最もよく覚えられる．					
20．私は体験したり劇をしたりすると教室で楽しく学べる．					
21．私は独りで勉強するよりグループとするほうがよく学べる．					

	強く同意	同意	中立	反対	強く反対
２２．可能な時ならいつでも自分の勉強していることのモデルを 描いたり作ったりして学ぶのが好きである。					
２３．私は書物や写真や図表を見たり読んだりすると最もよく覚えられる。					
２４．クラスでは、私は他の生徒と一緒に作業をする時最もよく学べる。					
２５．私は勉強するとき関連のある図表を描いたり作ったりするとよく学べる。					

知覚学習スタイルに関するアンケート

氏名＿＿＿＿＿＿＿＿＿　年齢＿＿＿＿＿＿　日付＿＿＿＿＿＿

本国＿＿＿＿＿＿＿＿＿　母国語＿＿＿＿＿＿＿＿

性別　男＿＿　女＿＿

どこで、期間はどれぐらい、英語を勉強しましたか。（あらゆることを含めて）＿＿＿

＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

合衆国に住んでどれぐらいになりますか。＿＿＿＿＿＿＿＿＿＿＿＿＿＿

あなたの専門分野または職業は何ですか。＿＿＿＿＿＿＿＿＿＿＿＿＿＿

大学在学年数＿＿＿＿＿＿＿＿＿　学位＿＿＿＿＿＿＿＿

指示：

人々は多くの異なった方法で学びます。たとえば、基本的に見たり聞いたりすることによって学ぶ人もいるし、経験や実際にやってみて学ぶのを好む人もいる。また、一人で学ぶ方を取る人もいれば、グループで学ぶことを好む人もいる。

このアンケートは、人々が言語を最もうまく学ぶ方法は何か－－言語を学ぶのにどんな方法を選ぶかということを明らかにする手助けとなるように考えられました。

次のページに述べられていることを読んで、あなたの英語学習にあてはまるようにそれぞれの文に答えてください。

それぞれの記述に同意するか反対するか決めてください。たとえば、もしあなたが強く同意するなら、「強く同意」という箇所にXをつけてください。

強く同意	同意	中立	反対	強く反対
✕				

あまり考えずに各記述に速やかに答えてください。選んだ後は答えを変えないでください。すべての質問に答えてください。ペンを使って記入してください。

この研究にご協力くださって有難うございます。

知覚学習スタイルに関するアンケート

	強く同意	同意	中立	反対	強く反対
1．私は、他人と学習するより一人でする方がたくさんできる．					
2．私は、レコードやテープや講義を聞いて新しいことを学ぶのが好きである．					
3．私は、ほかの生徒達と授業の教材について討論するのが好きである．					
4．私は、教科に関して、人の講義や話を聞くと一番よく学べる．					
5．私は、講義を聞いて学ぶのが好きである．					
6．私は、授業でじっと座っているのが好きである．					
7．私は、教室で立って歩き回れる時、最もよく学べるように思う．					
8．私は、先生にやることを指示されるより、自分で指示を読む時の方がよく学べる．					
9．私は、自分ひとりでする時、一番よく勉強できる．					
10．私は、手で何かを作ることができる時、もっと学びやすいと思う．					
11．私は、講義を聞くと、それまでに聞いたことは大部分思い出せる．					
12．私は、講義を聞くより、教科書を読む時の方がもっと多く学べる．					
13．私は、手で作業しながら学ぶのが好きである．					
14．私は、教科に関して、読んだり聞いたりするより、体験によって学びたい．					
15．私は、教科に関して、先生の講義を聞くより読む方が好きだ．					
16．私は、読んだことより聞いたことの方をよく覚えている．					
17．私は、絵や図表を見て新しいことを学ぶのが好きである．					
18．私は、聞いたり読んだりするだけより、描いたり書いたりする時の方がよく覚えられる．					
19．私は、授業での活動に参加できると一番よく覚えられる．					
20．私は、授業で実験や劇をしたりすると楽しく学べる．					
21．私は、一人で勉強するよりグループでする方がよく学べる．					

	強く同意	同意	中立	反対	強く反対
2．私は、自分の勉強していることのモデルを描いたり作ったりして学ぶのが好きである．					
3．私は、書物や写真や図表で見たり読んだりしたことを一番よく覚えられる．					
4．私は、授業で他の生徒と一緒に作業をすると一番よく学べる．					
5．私は、勉強する時、関連のある図表を描いたり作ったりするとよく学べる．					

	A	B
1	SUBJECT	VISUAL
2	JET-3	46-M
3	JET-15	44-M
4	JET-2	40-M
5	JET-19	38-M
6	JET-17	36-m
7	JET-1	34-m
8	JET-6	34-m
9	JET-10	34-m
10	JET-16	34-m
11	JET-5	32-m
12	JET-7	32-m
13	JET-8	32-m
14	JET-9	32-m
15	JET-11	32-m
16	JET-13	32-m
17	JET-14	32-m
18	JET-21	32-m
19	JET-4	30-m
20	JET-12	30-m
21	JET-20	30-m
22	JET-18	22-0

JET-AUDITORY

	A	B
1	SUBJECT	AUDITORY
2	JET-15	48-M
3	JET-12	44-M
4	JET-14	42-M
5	JET-1	38-M
6	JET-4	38-M
7	JET-6	38-M
8	JET-13	38-M
9	JET-16	38-M
10	JET-18	38-M
11	JET-2	36-m
12	JET-7	36-m
13	JET-9	36-m
14	JET-10	36-m
15	JET-11	34-m
16	JET-19	34-m
17	JET-21	34-m
18	JET-17	32-m
19	JET-20	32-m
20	JET-3	30-m
21	JET-8	30-m
22	JET-5	26-m

	A	B
1	SUBJECT	KINESTHETIC
2	JET-2	46-M
3	JET-15	46-M
4	JET-17	44-M
5	JET-10	42-M
6	JET-21	42-M
7	JET-4	38-M
8	JET-14	38-M
9	JET-20	38-M
10	JET-1	36-m
11	JET-7	36-m
12	JET-9	36-m
13	JET-16	36-m
14	JET-18	36-m
15	JET-3	34-m
16	JET-5	34-m
17	JET-12	34-m
18	JET-11	32-m
19	JET-6	30-m
20	JET-13	30-m
21	JET-19	30-m
22	JET-8	28-m

JET-TACTILE

	A	B
1	SUBJECT	TACTILE
2	JET-2	48-M
3	JET-15	46-M
4	JET-21	44-M
5	JET-7	42-M
6	JET-13	42-M
7	JET-9	40-M
8	JET-14	40-M
9	JET-5	38-M
10	JET-16	38-M
11	JET-19	38-M
12	JET-1	36-m
13	JET-3	36-m
14	JET-8	36-m
15	JET-17	36-m
16	JET-6	34-m
17	JET-10	34-m
18	JET-12	34-m
19	JET-18	34-m
20	JET-4	32-m
21	JET-20	32-m
22	JET-11	22-0

	A	B
1	SUBJECT	GROUP
2	JET-2	44-M
3	JET-11	40-M
4	JET-1	36-m
5	JET-14	36-m
6	JET-15	36-m
7	JET-4	34-m
8	JET-7	34-m
9	JET-10	32-m
10	JET-19	32-m
11	JET-17	30-m
12	JET-20	30-m
13	JET-5	28-m
14	JET-6	28-m
15	JET-8	28-m
16	JET-12	26-m
17	JET-16	26-m
18	JET-21	24-0
19	JET-9	22-0
20	JET-13	22-0
21	JET-18	18-0
22	JET-3	14-0

	A	B
1	SUBJECT	VISUAL
2	J-20	40-M
3	J-10	38-M
4	J-12	38-M
5	J-18	38-M
6	J-11	36-m
7	J-3	32-m
8	J-13	32-m
9	J-14	32-m
10	J-15	32-m
11	J-17	32-m
12	J-4	30-m
13	J-5	30-m
14	J-6	30-m
15	J-7	30-m
16	J-16	30-m
17	J-19	30-m
18	J-22	30-m
19	J-1	28-m
20	J-2	28-m
21	J-8	28-m
22	J-9	28-m
23	J-21	26-m

	A	B
1	SUBJECT	AUDITORY
2	J-18	46-M
3	J-3	44-M
4	J-10	42-M
5	J-14	42-M
6	J-13	40-M
7	J-17	38-M
8	J-19	38-M
9	J-22	38-M
10	J-11	36-m
11	J-2	34-m
12	J-8	34-m
13	J-15	34-m
14	J-16	34-m
15	J-21	34-m
16	J-7	32-m
17	J-12	32-m
18	J-5	30-m
19	J-6	30-m
20	J-9	30-m
21	J-1	28-m
22	J-20	26-m
23	J-4	24-0

	A	B
1	SUBJECT	KINESTHETIC
2	J-20	48-M
3	J-14	46-M
4	J-9	44-M
5	J-16	44-M
6	J-8	42-M
7	J-11	42-M
8	J-1	40-M
9	J-10	40-M
10	J-7	38-M
11	J-6	36-m
12	J-13	36-m
13	J-15	36-m
14	J-17	36-m
15	J-2	34-m
16	J-19	34-m
17	J-3	32-m
18	J-4	32-m
19	J-12	30-m
20	J-22	30-m
21	J-5	28-m
22	J-18	28-m
23	J-21	28-m

SIELOP-TACTILE

	A	B
1	SUBJECT	TACTILE
2	J-18	50-M
3	J-19	48-M
4	J-11	46-M
5	J-17	42-M
6	J-8	40-M
7	J-10	40-M
8	J-13	40-M
9	J-14	40-M
10	J-6	38-M
11	J-7	38-M
12	J-12	38-M
13	J-16	38-M
14	J-20	38-M
15	J-1	36-m
16	J-15	36-m
17	J-2	34-m
18	J-9	34-m
19	J-22	34-m
20	J-3	32-m
21	J-5	32-m
22	J-4	30-m
23	J-21	30-m

	A	B
1	SUBJECT	GROUP
2	J - 17	3 8 - M
3	J - 2	3 6 - m
4	J - 14	3 6 - m
5	J - 15	3 6 - m
6	J - 11	3 4 - m
7	J - 16	3 4 - m
8	J - 5	3 0 - m
9	J - 19	3 0 - m
1 0	J - 1	2 8 - m
1 1	J - 8	2 8 - m
1 2	J - 9	2 8 - m
1 3	J - 18	2 8 - m
1 4	J - 3	2 6 - m
1 5	J - 7	2 6 - m
1 6	J - 10	2 6 - m
1 7	J - 12	2 4 - 0
1 8	J - 20	2 4 - 0
1 9	J - 22	2 4 - 0
2 0	J - 13	2 2 - 0
2 1	J - 4	2 0 - 0
2 2	J - 21	2 0 - 0
2 3	J - 6	1 8 - 0

	A	B
1	SUBJECT	VISUAL
2	A-10	46-M
3	A-16	46-M
4	A-5	44-M
5	A-22	42-M
6	A-11	42-M
7	A-17	40-M
8	A-2	40-M
9	A-30	40-M
10	A-29	38-M
11	A-15	36-m
12	A-6	36-m
13	A-25	36-m
14	A-26	36-m
15	A-12	34-m
16	A-23	34-m
17	A-3	34-m
18	A-21	34-m
19	A-7	32-m
20	A-13	34-m
21	A-4	32-m
22	A-8	30-m
23	A-19	30-m
24	A-24	30-m
25	A-28	30-m
26	A-1	30-m
27	A-9	30-m
28	A-27	28-m
29	A-20	26-m
30	A-31	26-m
31	A-18	24-0
32	A-14	22-0

	A	B
1	SUBJECT	AUDITORY
2	A-31	46-M
3	A-3	42-M
4	A-20	38-M
5	A-24	38-M
6	A-23	38-M
7	A-27	38-M
8	A-13	38-M
9	A-7	36-m
10	A-26	36-m
11	A-18	34-m
12	A-28	34-m
13	A-1	34-m
14	A-19	32-m
15	A-12	32-m
16	A-5	32-m
17	A-8	30-m
18	A-6	30-m
19	A-22	30-m
20	A-14	30-m
21	A-15	28-m
22	A-17	28-m
23	A-2	28-m
24	A-25	28-m
25	A-30	26-m
26	A-9	26-m
27	A-11	26-m
28	A-16	26-m
29	A-10	20-0
30	A-21	20-0
31	A-4	20-0
32	A-29	16-0

	A	B
1	SUBJECT	KINESTHETIC
2	A-12	46-M
3	A-28	44-M
4	A-15	42-M
5	A-22	42-M
6	A-1	40-M
7	A-6	38-M
8	A-9	38-M
9	A-25	38-M
1 0	A-26	38-M
1 1	A-5	36-m
1 2	A-8	34-m
1 3	A-16	34-m
1 4	A-21	34-m
1 5	A-18	32-m
1 6	A-14	32-m
1 7	A-11	32-m
1 8	A-4	32-m
1 9	A-19	30-m
2 0	A-24	30-m
2 1	A-23	30-m
2 2	A-7	30-m
2 3	A-31	30-m
2 4	A-10	28-m
2 5	A-27	28-m
2 6	A-30	28-m
2 7	A-29	26-m
2 8	A-20	24-0
2 9	A-17	24-0
3 0	A-3	24-0
3 1	A-2	24-0
3 2	A-13	22-0

	A	B
1	SUBJECT	TACTILE
2	A-15	50-M
3	A-10	46-M
4	A-28	46-M
5	A-12	42-M
6	A-19	40-M
7	A-30	40-M
8	A-5	40-M
9	A-31	38-M
10	A-26	38-M
11	A-21	38-M
12	A-8	36-m
13	A-18	36-m
14	A-6	36-m
15	A-1	36-m
16	A-16	36-m
17	A-3	34-m
18	A-25	34-m
19	A-24	32-m
20	A-17	32-m
21	A-7	32-m
22	A-9	32-m
23	A-14	28-m
24	A-4	28-m
25	A-23	26-m
26	A-27	26-m
27	A-13	26-m
28	A-22	24-0
29	A-2	24-0
30	A-11	24-0
31	A-29	22-0
32	A-20	20-0

	A	B
1	SUBJECT	GROUP
2	A-15	42-M
3	A-9	42-M
4	A-31	42-M
5	A-19	40-M
6	A-18	40-M
7	A-14	40-M
8	A-23	38-M
9	A-11	32-m
1 0	A-22	30-m
1 1	A-8	28-m
1 2	A-3	28-m
1 3	A-25	28-m
1 4	A-26	28-m
1 5	A-21	28-m
1 6	A-6	26-m
1 7	A-7	26-m
1 8	A-4	26-m
1 9	A-12	24-0
2 0	A-27	24-0
2 1	A-30	24-0
2 2	A-28	22-0
2 3	A-5	22-0
2 4	A-16	22-0
2 5	A-29	20-0
2 6	A-10	20-0
2 7	A-2	20-0
2 8	A-24	18-0
2 9	A-17	18-0
3 0	A-1	18-0
3 1	A-20	16-0
3 2	A-13	16-0

	A	B
1	SUBJECT	YRS FRENCH
2	A-31	9
3	A-30	7
4	A-29	5
5	A-28	4.5
6	A-27	4.5
7	A-26	4
8	A-25	3.5
9	A-24	3
10	A-23	3
11	A-22	3
12	A-21	3
13	A-20	2.5
14	A-19	2.5
15	A-18	2.5
16	A-17	2.5
17	A-16	2.25
18	A-15	2
19	A-14	2
20	A-13	2
21	A-12	1.7
22	A-11	1.7
23	A-10	1.5
24	A-9	1.5
25	A-8	1
26	A-7	1
27	A-6	0.8
28	A-5	0.7
29	A-4	0.7
30	A-3	0.5
31	A-2	0.3
32	A-1	0.25