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J. Albert Wiberley, Major Professor

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A DESCRIPTION OF SHARED LINGUISTIC MEANING AMONG EDUCATION PRACTITIONERS: IMPLICATIONS FOR THE ROLE OF SCHOOL PSYCHOLOGISTS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

G. Douglas Cox

March 1980

1113831

DEDICATION

In Memoriam

Mitchell Anderson Cox

June 6, 1944-January 29, 1974

and

Clarence Allen Crawford, Sr.

May 22, 1927-September 28, 1977

ACKNOWLEDGMENTS

This dissertation has taken the road less traveled by. Broken into two phases--the research and the compilation separated by nearly four years--the study has placed unique strains and demands on many, including myself. A most special and tender thank you is extended to my wife, Elizabeth, who postponed many plans, sacrificed many weekends, and refrained from many fully justified tantrums because of slow progress. Appreciation is also extended to my chairman Al Wiberley, who through a blend of lucid thought, valued advice, and concerned listening has helped steer me along, particularly through "phase two." Thanks to Bill Verplanck for his unflagging encouragement, dozens of helpful suggestions on the experimental technique, and for his firm belief that the research was worthwhile. To Ohmer Milton, while I probably failed to "give 'em hell" in the Milton style, I extend my thanks for that pugnacious and cheerful exhortation so freely given. And thanks to Bob Kronik for his very generous assessment of my work from which I took heart and confidence in many dark hours. And to Bobbi Klepser for many hours of underpaid typing and helpful editorial suggestions. And finally, a very special note of thanks to Ellis Bacon who, in a brief glance at my poorly organized data, provided me with a clear and succinct method of presenting the information which added immeasurably to the final product.

ABSTRACT

The study described the shared linguistic characteristics of six education practitioner groups, including resource teachers, school psychologists, principals, and three classroom teacher groups divided according to years teaching experience: 1-5 years, 6-10 years, 11 and more years. Word associations to five work-related stimulus terms were collected from 180 Ss, 30 in each group; these associations were submitted to analyses to measure linguistic overlap among groups, technical accuracy in defining the terms, and linguistic overlaps within groups.

The six groups were compared among themselves on these measures to ascertain the extent to which various groups and various group pairs experienced language similarity on work concepts related to traditional education and to school psychology.

Findings suggested that school psychologists showed the least overall language similarity with other groups; resource teachers and principals evidenced the most. School psychologists showed more language similarity with other groups when controlling for the technical accuracy of the associations but were below resource teachers, principals, and 6-10 year teachers on this measure. School psychologists were better than classroom teachers in providing technically accurate associations to stimulus terms germane to the work of school psychology but were not consistently superior to resource teachers and principals. Older classroom teachers were below the four other groups in technically defining the stimulus terms.

The stimulus term "school psychologist" produced differences in the frequency of associations to content categories entitled "tester"

and "consultant." To "tester" school psychologists contributed only two of a total of 35 associations but produced 15 of 32 associations to "consultant," indicating that school psychologists' perceptions of their role differs from the perceptions of other groups.

In measures of language congruency within each individual group, school psychologists ranked below all groups. This contradicted the common assumption that school psychologists have an internal language well understood among themselves but foreign and strange to other practitioners.

Although the limited context of the study precluded a definitive interpretation of the results, some definite patterns among the groups emerged. Taking the measures of linguistic similarity among the groups as an index of communication potential (and capacity) among groups, of all groups, school psychologists ranked lowest in overall communication potential. Resource teachers, principals, and to a lesser extent mid-experienced teachers showed the most communication potential. Older classroom teachers were near school psychologists in overall communication potential but were much higher with other classroom teachers and with principals than with other groups. School psychologists exhibited far more communication potential with resource teachers and principals than with the teacher groups.

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CHAPTER I

INTRODUCTION

> "But 'glory' doesn't mean a nice knockdown argument," Alice objected.
>
> "When I use a word," Humpty Dumpty said in a rather scornful tone, "it means just what I choose it to mean--neither more nor less."
>
> "The question is," said Alice, "whether you can make words mean different things."
>
> "The question is," said Humpty Dumpty, "which is to be master--that's all" (Lewis Carroll [Charles Dodgson], Through the Looking Glass).

Words, as Humpty Dumpty accurately perceived, are fickle indeed. The leap from words to meaning is taken by faith over the chasm of interpretation. Words are markers of meaning but are always embedded in the omnipresent context, which like a magician offers the interlocutor a constant challenge of shifts, tricks, and legerdemain. Thus one of the prime tools of human civilization is rather flawed and defies precise calibration. Nevertheless, words, or more accurately language, bear an immense burden in the social affairs of homo sapiens. One can hardly conceive of a single area of human endeavor which does not rely heavily on language for articulation and communication. In war, for example, army task groups whether squads or corps are interdependent, in extremis, and hence require a precise and unambiguous language to abet success of their mission--and survival.

Military operations as an early technology, probably spawned some of the earliest attempts to refine language into a more reliable tool. Systematic coding of common words to specify concrete, verifiable meaning doubtless aided armies in complex actions requiring coordinated

assaults, manuevers, and withdrawals. Other cooperative group tasks also required precision in language. The spectacular achievement of the pyramids of Egypt likely demanded an engineering lexicon which could command coordinated action from huge aggregations of work crews. To this day, technologies whether old or new, requiring coordination among two or more persons sustain or produce their own arcane, precise vocabularies to aid in achieving their particular missions. The smaller the allowable tolerance of error, the more precision the vocabulary demands.

Technical Jargon in Education

Very little is known empirically about existing technical language or about how developing technologies formulate language or jargon. Education, for example, is dipping into the scientific, technical well to aid an ancient profession in disseminating its fruits to the masses. For better or worse, technology is making inroads in a profession which historically has been identified neither as a science or an art. Education occupies a niche called pedagogy, which may be between art and science or something entirely different (Waller, 1961).

Present day education is showing symptoms of becoming more technical. A host of educational techniques and instrumentations have become de rigueur in modern education. To name a few, consider standardized tests, psychological tests, curriculum tracking, teaching "machines" of all descriptions, and team teaching. In addition, it is a rare school system indeed which does not have its complement of "support personnel," i.e., speech therapists, school psychologists,

resource teachers, special education teachers, and the like, all of whom receive "scientific" training in their disciplinary specialities and, like physicians, are expected to correct dysfunctions in the human condition.

So long as the technology of education and the scientifically inspired methods of support personnel remain in compartments which do not force them into direct collaborative relationships with traditional education practices, conflict among them is largely confined to the theoretical. However, at the point where the recommendations of these support personnel require coordination, change, and compliance from regular classroom practitioners (primarily teachers), organizational conflict blossoms (Schmuck, et al., 1971). New methods based on technology create organizational imperatives which grate against the organizational forms of whatever education has traditionally been, whether art, pedagogy, pure method, or some amalgam of these (or other) ingredients.

The present day juxtaposition of the technical and the traditional in education has been accompanied by new language, or jargon (Hall, 1966; Jackson, 1968; Lortie, 1975; Nutall and Snook, 1973). This technical language has quite different academic roots than the language of traditional education. These new academic roots are primarily embedded in the behavioral sciences (e.g., standardized testing, psychological testing, behavior management, therapeutic interventions for emotional and mental disorders), in the health sciences (e.g., speech therapy, physical therapy), and in the communication sciences (e.g., teaching machines, television) (Komoski, 1972). Underlying the technical language of these education practitioners are

technical concepts and technically oriented social learning experiences. Persons trained in the use of techniques and instruments from the scientific and pseudoscientific disciplines will have a somewhat different view of activities that constitute effective education. They have received training that is not homogeneous with that of traditional educators. Depending on the degree of variance in this crucial socialization and training process, their goals, expectations, skills, and language will be substantially different--having important implications for successful collaboration with traditional educators (Lortie, 1975; Perrow, 1965).

The importance of a commonly understood vocational language should not be overlooked as a determinant of organizational outcomes in the school workplace. Spoken and written language is the coin of the realm which constitutes the chief medium of social exchange. Unfortunately, education is becoming a Babel of often competing voices and divergent theoretical views which lack the unifying experiences of a common and rigorous indoctrination, such as medical school provides to medicine's many sub-specialities (Hall, 1948; Lortie, 1968). The emerging technical splinters of education may be developing vocabularies that must become part of the general educational jargon if task groups are to be effective in achieving outcomes based on the technologies.

A recent development in education has provided an example of the problem of differences among practitioners of education. A federal law (PL 94-142) and its forerunners in many individual states have required appropriate educational programs for children classified as handicapped. In the process, a group of comparatively

new education practitioners, school psychologists, have been drawn into a controversy between the sweeping legal mandates of PL 94-142 and the limited response of school systems to the mandate. Strictly interpreted, the law has wide implications for the entire structure of public education. The law carries the same kind of radical potential for reform in public education as did the landmark civil rights legislation of 1954 based on Brown vs. Board of Education. In many school systems, school psychologists were the individuals given primary responsibility for getting the systems into compliance with the law. Such was the case in east Tennessee in 1973-1975 where school psychologists were hired in greatly increased numbers to help comply with Tennessee's version of PL 94-142 or the Weldon Bill (described briefly below).

Background of the Study

This study will examine the organizational setting of elementary schools in the Knoxville, Tennessee region during this period (1973-1975), with a goal of establishing some understanding of the characteristics of language use among school psychologists and other educators who were in the school system at that time. Prior to 1973, most school systems in this region had had rather limited experience with school psychologists. The role of school psychologists was in the main confined to that of tester/evaluator for mental retardation. The passage of the Weldon Bill in 1972, however, extended their responsibilities greatly. The Weldon Bill mandated the school system to devise appropriate educational programs for children classified as handicapped, programs which did not unduly isolate them from normal

classroom environments. This added a new dimension to the role of school psychologists. School psychologists were now an integral part of the special education team of the school systems, charged with helping recommend and implement programs for children classified as handicapped. No longer were they set apart from the educational decision making process but were now thrust into the mainstream--with responsibility--but without the authority to enforce decisions. Compliance with the new law meant many changes in the school system, changes which traditional educators were not prepared to make without money, prodding, or coercion, none of which were available as tools to school psychologists.

Thus the stage was set for conflict, but conflict is like a chess game that is won or controlled by a process, not by a formula. The pieces are moved in risk and by skill; the wisdom of each move can only be judged by results of the move, and only the results are sufficient to determine the next move. Hence it is advisable to know the pieces well, and to understand their characteristics and limitations. In the case examined here, one characteristic influencing the role integration of school psychologists in their new task setting was the use of language. If their work language was not understood consensually by their colleagues, a portion of the prerequisite necessary for successful collaboration was missing (Barnard, 1938; Christie, et al., 1952, March and Simon, 1958).

The Work and Language of Education Practitioners

The literature concerning the sociology of teaching is united on one fact: there is no arcane, specialized body of knowledge or

technique which defines education (Debreen, 1973; Getzels and Jackson, 1973, Jackson, 1968; Lortie, 1975). Educators do not talk in a precise language specific to them and their work. Apparently precision, technology, tradition, and accountability have not reached a sufficient level of development (and may never do so) to provide educators a verified and authoritative core of arcane knowledge which is known only to them (Debreen, 1973). Educators are a loosely coupled group of practitioners who actually share few common characteristics with "true" professionals like physicians and attorneys (Lortie, 1975).

Unlike other professions, education does not have the fundamental structure which accommodates a specialist/generalist division of labor (Haller, 1966). Without the frame of reference provided by a core of knowledge, a refined professional language, and so on, there is no consistent recognition of the superiority of the specialist in certain domains of knowledge. School teachers perceive the essence of their work occurring in interaction with pupils, and its success defined by ineffable and commonly unverifiable insights by students (Jackson, 1968). There is no reason for them to believe that trained specialists in speech therapy or school psychology, for example, can excel the classroom teacher in helping children gain insight and knowledge, the specialist role being confined to that of correcting defects which impair learning--the "disease model." Technology and accountability have not fundamentally altered this focus on the unverifiable by school teachers, nor have these methods been able to consistently fit the constraints of the classroom (Debreen, 1973). Consequently, and in contrast to medicine for example, specialists in education have less credibility and esteem among educators than

say, "a master teacher" who draws his or her reputation more from experience and a charismatic knack with children than from any specialized training.

If this analysis of teacher work is correct, its implications are enormous for a specialist group hoping to establish a relationship with educators based on collaborative sharing and decision making (Gouldner, 1959). In particular, the theory and practice of school psychology owes much to the scientific constructs of intelligence, statistics, behavior modification, concept formation, and the like. Educators seem more inclined to understand the essence of their work as guiding and directing human processes that cannot be encapsulated in scientific doctrine. In this they follow Rosseau, chief champion of this viewpoint (Borrowman, 1956). In day to day give and take between school psychologists and school teachers, this conceptual difference between the two could cause major problems that might never surface in the absence of close contact between the groups and their contrasting world views. Specifically, in a relationship requiring mutual dependency and joint direction of classroom procedures, both groups might experience problems stemming from a kind of vocational cognitive dissimilarity (Corwin, 1963; Gouldner, 1959; Schmuck, et al., 1971; Triandis, 1960).

Based on an analysis of language use, there is evidence that collaborative relationships among educators are not important to the core educational mission. Exhaustive interviews with a balanced sample of 94 teachers from the Boston metropolitan area indicated that work concepts voiced by teachers are not those of colleagues who see themselves sharing a viable, generalizable body of knowledge and

practice (Lortie, 1975). They see themselves as more individualistic. It was not what "we the colleague" know that was paramount but rather what "I" have learned through experience. After a content analysis of these interview protocols, Haller (1966) found a very low use by teachers of

> . . . words which are not commonly used; since the interviews dealt with teaching, it should have elicited a technical vocabulary shared by teachers. Teaching (evidently) is not like crafts and professions, whose members talk in a language specific to them and their work (Haller, 1966, p. 184).

The absence of linguistic colleagiality among educators, if true, poses serious problems for a group like school psychologists wishing to establish a functionally collaborative relationship with them. It might be similar to establishing a colleagial relationship with a colony of artists. Lortie (1968), in fact, finds the analogy between artist and educator apt. He found that teachers, most often, learned new techniques through a process of seeing or hearing of a new practice from a fellow teacher and then adapting the process through a trial and error procedure. This aspect of adaptation and trial and error is more similar to art than technology, the hallmark of which is efficiency and replicability. He finds less inclination to analytical thinking from teachers than from other university trained persons, even those in the "people" oriented professions (psychology, social work, nursing). Teachers do less with scientific method, i.e., testing hypotheses, sampling, controlled observation, comparison, rules of inference, and so forth. As a result, conservative doctrines in education are received uncritically, which militates against development of a "technical culture." (Parenthetically, one could argue that any art is in the same predicament, but art is a

marketable commodity either for profit or acclaim and therefore has a critical element built in. Art also has a history of judging quality according to individual tastes; modern education purports to judge the quality of its products using scientific or pseudo-scientific methods like standardized tests.)

Statement of the Problem

This discussion raises a question about how different groups of education practitioners actually use language related to their work. Specifically, to what extent do school psychologists and other practitioner groups share a common understanding of a work vocabulary? In comparing the language similarity between school psychologists and traditional education practitioners, it is important to also compare traditional practitioners among themselves to establish a frame of reference. If, for example, language similarity between school psychologists and classroom teachers was no less than between school psychologists and principals and that no less than between principals and classroom teachers, then no case could be made for linguistic dissimilarity causing role conflict between school psychologists and other groups. If, however, school psychologists fared differently with other groups than the groups among themselves, then the reverse would hold true. Accordingly, this investigation described the language use among six groups of education practitioners: three groups of classroom teachers divided according to years of teaching experience--1-5 years, 6-10 years, 11 or more years; resource teachers, school psychologists, and principals. Excepting children and parents, these six groups constituted those in the school primarily and

regularly involved with the activities of school psychologists. It is a fair judgment to say the working relationships of these groups formed the bulk of the organizational crucible in which the new expanded role of school psychologists was tested.

Six a priori "working hypotheses" (listed below) overlaid the general objective description of shared linguistic meaning among the practitioner groups. These working hypotheses represented the author's hunches about what the description of language would reveal. The first hypothesis was a fundamental, methodological question about differences among all groups. The subsequent five focused specifically on differences between school psychologists and other groups.

1. Different education practitioner groups would exhibit linguistic differences based on an analysis of their word associations.

2. School psychologists would experience comparatively greater language similarity with resource teachers than with other groups, possibly because of similarity in training, work mission, and collaborative relationships.

3. School psychologists would have a relatively higher linguistic similarity within members of their own groups than would other groups on the same measure.

4. School psychologists would exhibit greater technical accuracy than other groups in defining certain terms germane to their work role.

5. School psychologists would have higher overlap with other groups, particularly resource teachers, when controlling for the technical accuracy of their word associations, i.e., when only the most technically accurate associations were considered.

6. School psychologists and other groups would produce some striking differences in word associations upon inspection of the raw data, i.e., listing of categories and associates.

These working hypotheses are taken up in the discussion section. They were not formally submitted for direct, statistical verification in the study but rather were supported or not supported by the general descriptive information presented in the study.

A Final Word

It should be noted parenthetically that other factors beyond language use likely influenced the role integration of school psychologists. These are of critical importance and fully deserve analysis but to do so exceeds the scope of this study. Two, however, are so prominent as to need mention because they form a background to the question at hand. First, teachers recognize salient problems with their vocation which may override the priorities of school psychologists (Corwin, 1963; Gouldner, 1959; Lortie, 1975; Schmuck, et al., 1971; Waller, 1961). These pressing problems are classroom disruptions, isolation in the classroom, low salaries, time scheduling and interpersonal support. School psychologists' proposals for change in classroom activities and structure run the risk of striking educators as irrelevant or fatuous--they do not address the more crucial problems. When teachers ask for help, the kind offered by school psychologists may be far down their priority list. Second, there are no incentives, either professional or monetary, to incorporate the specialist role into education. Medicine, law, and other professions have a reward system that has fostered the development of

sub-specialities which are fully integrated into the professions. The work setting of education offers little beyond the intrinsic reward of self-satisfaction to educators in accommodating specialists, and the risks are great. In the absence of other professional satisfactions--money, travel, professional affiliations--educators value autonomy, classroom control, and security, all of which may be eroded by specialists.

Review of the Literature

The Importance of Effective Language to General Organizational Functioning

In an early work on organizational communication, Barnard (1939) asserted that "communication [occupies] a central place [in an organization] because the structure, extensiveness, and scope of the organization are almost entirely determined by communication techniques" (p. 91). March (1965) also postulated communication as a critical problem to organizations. The central question emerging from his analysis was: How may the fullness of meaning be carried without overloading the communication system? He asserted that the degree to which knowledge may be transported through the organization depends on the extent to which messages may be encoded and faithfully transmitted through efficient language, "as in a technical jargon" (p. 553). Further, the possession of two persons or two organizational units, of a common, efficient language facilitates communication. Other determinants of language compatibility--ethnic background, education, age, experience--will affect what channels are used in the organization.

Empirical studies which support the importance of language in organizational efficiency are few. This is generally attributed to the lack of investigative tools available to examine the problem (Christie, et al., 1952; Goldhaber, 1974; Lortie, 1975; March, 1965; March and Simon, 1958; Perrow, 1965; Schmuck, et al., 1971). Of the studies which do exist, the most methodologically sophisticated was carried out by Christie, et al. (1952) which demonstrated the role of unambiguous technical terms in permitting coordination of complex tasks. The "noisy marble" experiment involved a comparison of group achievement in deciding which marbles Ss held in common when solid, streaked, cloudy, and mottled marbles were used--the more complex the design and mottling of the marbles, the more "noise" introduced into the communication. Groups of five Ss each were given boxes of marbles varying in design complexity. The Ss were in different communication configurations, could not see each other, and could communicate only by passing notes. They had considerably more trouble in determining which streaked marbles vs. which solid marbles they held in common. Streaked groups used the semantic device of redundancy to eventually reduce noise and thus articulate a common vocabulary to describe the marbles. Streaked groups became comparable to control groups only when they succeeded in inventing a technical vocabulary and securing its acceptance throughout the group. (Research conclusions included a plea for applying these experimental results to practical situations.)

Other studies of language use among persons with different organizational roles or professional backgrounds have relied primarily on the semantic differential. The semantic differential has an inherent

flaw in that it constricts language description into the experimental dimensions offered by the instrument (Deese, 1965). Nevertheless, these studies are interesting in the uniformity of their findings. Bach, et al. (1972) found that persons from different professional backgrounds (science, theology) experienced important differences in understanding the connotations of terms used in a year-long discussion on science and society. Fifteen key terms (e.g., belief, knowledge, theory, model) which had given rise to long and fruitless discussion were identified from audio tapes. Twenty-six Ss were interviewed and administered the semantic differential. The key finding was that based on inferences about the cognitive structures of scientists, the importance of "hard" knowledge and its "sacred" character to scientists lead to unproductive interactions with persons of other professional backgrounds.

Triandis (1960) found that the more similar the semantic differentials among organizational workers regarding a concept, the more effective the communication about the concept. Cognitive similarity among workers was measured by semantic profiles yielded by the semantic differential. The greater the deviation between the encoders and decoders of the profiles (communication), the greater the difficulty of the decoder in decoding the encoders profile. Triandis suggests that to the extent workers share various cognitive dimensions, they will share a greater overlap in their perceptions of an event and more likely communicate effectively.

In a study of cognitive linearity and co-linearity based on Coomb's "unfolding model," between professors and their students, Runkel (1956) found that students who were more co-linear (cognitively

similar) to their professors received higher quiz scores than those non-co-linear. The study assumes that the ranking of cognitive preference for a series of opinion statements is analagous to communication. Further study provided evidence that the higher scores of co-linear students could not be accounted for by differences in scholastic ability nor by preference for attitude positions of the professors.

Conflict Among Education Practitioners in the School Workplace

A differentiation of task function is recognized as a major source of conflict within the schools (Corwin, 1963; Gouldner, 1959; Schmuck, et al., 1971). Different groups speaking different languages within the school can cause conflict. "When the same problem is tackled from very different points of view, the various cognitive, emotional, and attitudinal differences often produce inter-personal and inter-group conflict" (Schmuck, et al., 1971, p. 138). One of four basic sources of school organizational conflict identified by Gouldner (1959) is the dual basis of authority, i.e., authority based on technical competence, and authority based on sheer incumbency of office. This may be characterized as staff-line conflicts where supervisors are not competent to judge the work of a specialist. A second form occurs when supervisors put pressure on professionals for results (e.g., school psychologists to do testing) who in turn place emphasis on other technical areas (e.g., consultation) or on technical quality.

Absence of a Technical Culture and Technical Language in Education

As stated earlier, the literature concerning the sociology of education is of one voice in asserting the absence of a "technical culture" in elementary and secondary education (Debreen, 1970; Getzels and Jackson, 1963; Gump, 1967; Haller, 1966; Jackson, 1968; Lortie, 1969). (Technical culture is loosely defined as the presence of a tradition or mechanism that identifies, codifies, transmits, and corrects a body of arcane knowledge or principles unique to a population (Lortie, 1975).) All would admit, however, that no empirical instrumentation has been found to measure education practitioners' participation in a technical culture nor their understanding of a technical vocabulary, so that these convictions remain to some degree speculative. This can be attributed to the lack of sustained, empirical, and practice oriented inquiry into problems of teaching, which can be found in most other university-spawned professions.

Through exhaustive interviews with teachers in Chicago schools, Jackson (1968) noted the absence of a technical vocabulary. He suggested that unlike professional encounters between attorneys, physicians, garage mechanics, nuclear engineers, and the like, "When teachers talk, almost any reasonably intelligent adult can listen in and comprehend what is being said" (p. 143). Haller (1966) after an analysis of Lortie's (1975) "Five Towns" interviews found a very low use of words not commonly used. He felt the absence of a "common technical vocabulary limits a beginner's ability to 'tap into' a pre-existing body of practical knowledge" (p. 73).

Jackson (1968) analyzed teachers' eschewal of elaborate words and elaborate ideas into the following components:

1. an uncomplicated view of causality
2. an intuitive, rather than rational approach to classroom events
3. an opinionated, as opposed to an open-minded, stance when confronted with alternative teaching practices
4. a narrowness in the working definitions assigned to abstract terms (p. 144).

Nearly none of the teachers in Jackson's sample referred to objective evidence of job performance as a source of satisfaction. They desired the freedom to teach as they liked in the classroom. They wanted to rely on their own professional integrity and judgment to do their job well--unless things got obviously out of hand. Their greatest single source of job satisfaction derived from the appearance and responses of pupils. They felt that good things were happening when pupils were responding with enthusiasm, when they looked alert and interested. Teachers saw virtue in flexibility such that discussion could follow lines of student interest and saw a significant hindrance and undermining of their work when they were externally evaluated.

Based on sociological surveys and interviews, Debreen (1970) asserted strongly that the constraints of the school work place prohibits the development of specialization and refinement of education. Because of their work schedules and the spatial dispersion of the classroom, teachers have little common basis of observed experience on which to base "shop talk." They also lack a written media for sharing because front line school teachers share no counterpart of the scholarly research tradition that characterizes university teaching, law, medicine, architecture, engineering, and other professions.

> It well may be . . . that the self-contained classroom militates against the identification of the components of teaching activities and accordingly against the development of a division of labor [italics added]. The reason, of course, is that anyone assuming the position of teacher in such a setting must do the whole job whether or not the parts of the job can be identified (Debreen, 1973, p. 470).

Consistent with this view, Gump (1967) found that teachers were able to devote only 51% of their time to instructional activities; the remainder going to structuring and organizing behavior of pupils (23%), admonishing, giving permission, and dealing with deviant behavior (14%), and other (12%).

Word Associations, Language Similarity, and Communication

Word associations derived from a word association test are samples of naturally occurring language. The instructions for the associations have a definite focus, but the shape of the linguistic responses are entirely natural. Unlike a device like the semantic differential, the word association technique does not specify any dimensions on which the responses must fall (Deese, 1965).

Historically, word associations were of interest chiefly because they permitted quick access to repressed and obscure information (Cramer, 1968; Deese, 1965). Jung developed word associations as a psycho-therapeutic tool; the early structuralists (e.g., Wundt, Cattell) used word associations in their attempts to discover the mental equivalents of atoms (Cramer, 1968). More recently, word associations have been used to study concepts, conceptual structures and conceptual change (Deese, 1965; Johnson, 1964; Nelson, 1979; Saeger, 1975; Szalay, et al., 1970; Verplanck, et al., 1974).

In his study of linguistic meaning through common associative structure among individuals, Deese (1965) argues that common meaning between individuals can be determined to a large extent by

> . . . the existence of commonality of associative structures. Therefore, the determination of associative meaning by combining responses from different people into a distribution should yield a picture of the linguistic commonality that exists among these people (p. 45).

Further, he says, "of course" if people do not possess common linguistic meanings, they cannot communicate.

> It is also possible that what we take for communication or the transfer of information is in large part the result of activation of correlated but not identical structures in two or more individuals. A great deal of linguistic communication is never subjected to external test . . . and it is always possible that two people talking to one another understand different things by the content of speech. Here the analysis of associative structures has a particular value, since we may arrive, through such an analysis, at some characterization of what it is each person understands by a given segment of language (p. 171).

A critical assumption in using associations to assess cognitive structures is that associations "predict linguistic and, more generally, conceptual usage" (Deese, 1965, p. 172). Johnson (1964) showed there is a correlation between the extent to which individuals exhibit appropriate associative structures for mechanical concepts and the accuracy the same individuals show in solving simple mechanical problems. In short, associative structures are correlated to traditional and objective measures of achievement. Bartlett (1932) held that associations could be viewed, in fact, as the raw material of cognitive activity. The associations are arranged according to various schemata. The schemata are principles or guidelines for the reconstruction of associations through remembering.

CHAPTER II

METHOD

Subjects

The education practitioners (who were administered the Short Concept Survey [SCS]) were active employees of school districts and educational cooperatives in the vicinity of Knoxville, Tennessee. There were 30 persons in each of six groups, totaling 180 subjects. The number 30 was chosen based on evidence (Verplanck, personal communication) which showed that 30 subjects each giving three word associations to a stimulus term will probably encompass the shared conceptual domain of the stimulus term except for unique associations. The six groups were (1) elementary school teachers with five years or less teaching experience (CT 1-5), (2) elementary school teachers with 6-10 years experience (CT 6-10), (3) elementary school teachers with 11 years or more experience (CT 11+), (4) elementary school resource teachers (RT), (5) school psychologists (SP), (6) elementary school principals (Prin) (some principals shared both elementary and secondary school responsibilities).

Teachers and principals were drawn from seven districts (three county and four city) and school psychologists from three sources (one county district, one city, and the psychological services unit of an educational cooperative serving seven school districts). With the exception of classroom teachers, no attempt was made to match the subjects on any dimension except task assignment (work role). Based on the results of an earlier pilot administration of the SCS,

the number of years teaching experience seemed to differentiate among the profiles of classroom teachers. Hence, classroom teachers were divided into three groups according to years teaching experience.

The assumption on which population comparability was based was (and is) somewhat arbitrary, but it represented the only working basis for segregating educators according to task roles. The assumption of "educator interchangeability" used in the study is the same one used by the Tennessee Department of Education in certifying its educators, i.e., that educators are interchangeable, qualified to teach or practice in any school for which they have received certification. This assumption implies a uniformity of educator roles. A duly certificated teacher, administrator, or psychologist from any school in Tennessee is assumed to be equivalent with any other person with the same certification. There is no clear rationale for determining units of equivalence, other than a prescription of university course-work or competencies. Obviously the assumption of blanket interchange-ability of equally certificated personnel is suspect if not invalid. Devoid though it be of empirical support, however, it stands as the only stated and widely recognized way of dividing task roles and determining equality of job competence in the school workplace (Lortie, 1975).

The procedures of group selection need only be explained further in the case of one group, school psychologists. Sixteen of the subjects were graduate student externs (or interns) working in the schools part-time; ten were from a psychology program and six from educational psychology. Eleven were master's level "journeyman" psychological services workers (PSW's), all graduated from educational

psychology programs. Three were doctoral school psychologists: two from educational psychology and one from psychology. A case can be made for a lack of homogeneity among the school psychologists with respect to training (educational psychology vs. psychology), level of training (extern/intern, masters (PSW), and doctoral), and experience. It need only be reiterated that the findings of the study do not necessarily attempt to single out a particular segment of school psychologists but to examine the school psychologist practitioners who actually worked in the school setting.

Materials

The Short Concept Survey (SCS) was adapted from a word association test method developed by Verplanck (Verplanck, et al., 1974) to measure cognitive learning outcomes with college undergraduates. Saeger (1975) used a device similar to the SCS to test for learning outcomes among participants in interdisciplinary college courses who were heterogeneous with respect to school programs (engineering, liberal arts, business, etc.). The modification of the instrument for measuring work concept similarity among task groups was a natural adaption.

The SCS consisted of a cover page of very brief instructions which stressed the single word, term, or item as a response, followed by a page on which associations were written. The bottom half of the instruction sheet requested certain demographic data: name, sex, position, years experience, educational background, etc. The second sheet listed 26 stimulus terms. The spaces for responses were restricted in size and were arranged vertically. Respondents were asked

to write three associations to each stimulus term except when they clearly lacked relevant knowledge of the term, in which case they were instructed to leave blanks. Three different random orderings of the stimulus terms were prepared and distributed equally among respondents to control for the influence of fatigue and sequencing effects (see Appendix 1 for the instrument).

Procedure

Appointments to administer the SCS were made by phone calls to administrators and to individual respondents. Many were reluctant to help with appointments without a full explanation of the purpose of the study and some assurance they would see the results. All subjects with exceptions noted below were administered the SCS in groups in a school or office setting. Because of the distribution of personnel and the lack of convenient meeting arrangements, 18 principals, 21 resource teachers, and 9 teachers in the 6-10 year experience group were contacted individually to complete the instrument. All respondents volunteered to take the SCS; any with reservations or objections were given the option of leaving.

Each person was given instructions directly by the author either in groups or individually. The instructions were read orally by the author with subjects reading silently. A brief period was allowed to answer any questions. Thirty minutes were allowed for completing the forms, although most persons finished earlier.

Respondents were encouraged to do their best. They were asked to concentrate as fully as possible on their responses and to give the best possible technical associations to the terms. It was the

author's impression that the respondents cooperated fully in completing the survey and made every effort to respond carefully.

Stimulus Terms

As was noted in Chapter I, the stimulus terms were chosen because they represented procedures, activities, techniques, persons, equipment, or the taxonomy of psychological learning processes and learning pathology germane to the education of handicapped children and were frequently mentioned by school psychologists in conferences, consultations, and conversations with other educators. For methodological purposes, one term /Rejeveski Cylinders/ was used early in each of the three orderings of stimulus terms to establish a set of leaving blanks when knowledge was clearly lacking. The term has no known meaning but is structurally similar to Cuisinare Rods--a mechanical aid to teaching early mathematics skills. The appropriateness of the stimulus terms and their currency in conferences, consultations, and other dialogue between school psychologists and educators was verified in four ways: a review of back issues of the periodical Educational Technology (1970-1975), discussions with school psychologists and other educational specialists (e.g., resource teachers, speech therapists), the author's personal experience, and discussions with the director of a regional learning resource center.

Of the 25 legitimate terms, five were chosen for analysis in this study; the remainder were retained for possible future analysis. The five terms were chosen because they were representative of and tapped areas of varying currency among the education practitioner groups. One was chosen from long established educational jargon

(/curriculum/), two were more exclusively related to work with children classified as handicapped (/immediate reinforcement/, /criterion referenced test/), one was mixed (/individualized instruction/), and one defined a practitioner group (/school psychologist/). /Criterion referenced test/ was selected because of its highly technical and precise meaning. Its use in education can be specified and the results of its use applied to accountability measures. Such tests are often recommended in the instruction of children classified as educationally handicapped as an alternative to norm-referenced tests.

/Individualized instruction/ was a very visible word in the schools and certainly in use outside of programs for the handicapped. Many educators dismiss the approach as a good idea but impractical given work constraints. Since much of what school psychologists recommend to educators involves some form of individualized instruction, it was felt to be an important concept to examine.

/Immediate reinforcement/ was a technique often suggested to educators as part of a behaviorally oriented approach to classroom and individual behavior management. This term is part of the "awful" vocabular of technology in educational movements which according to Charles Slack (1972) make kids sound like they are machines filled with wires and transistors instead of sugar and spice.

/Curriculum/ was a term of unquestioned and venerable service to educators and clearly a term exclusively in the domain of education. It was felt that if educators possessed a precise language (contrary to Lortie's conclusion cited earlier), that curriculum would surely be part of it.

/School psychologist/ was a term of critical relevance to the problem of school psychologists' role integration in the educational system. This term held the promise of revealing concept differences among the practitioner groups concerning the role of school psychologists.

These five terms were judged to present a balance of words of different semantic content. For the exploratory/formulative purposes of the study, this variety of terms offered the advantage of broadening the scope of the study.

Content Categories

The data collection procedures yielded 540 (less blanks) word associations to each stimulus term (6 groups X 30 Ss per group X 3 associates per S). These associates often consisted of phrases and shreds--a deviation from the one word, item, or term response mode. This served to reduce the linguistic correspondence of associates. To control for these effects, the associates were assigned to semantic categories which allowed comparisons of the linguistic similarities of practitioner groups to be based more on meaning: categories were less subject to the vagaries of idiosyncratic phrasing of associates. The categories also presented a more wieldy format for discussing concept similarities and dissimilarities among groups.

A content analysis[1] of the associates for each stimulus term was conducted according to the following rules:

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[1]Cf. Selltiz, et al., 1976, for a fuller explanation of the content analysis procedure.

1. The key criterion for assignment of associates to categories was manifest content.

2. Inferences about meaning of the associates was kept to a minimum.

3. In order to be included in the same category, associates had to share certain key words or cognates of key words.

The categories were originally established by the author after careful inspection of the entire distribution of associates for each stimulus term. Most troublesome for assignment were associates which expressed two or more important ideas. While some degree of arbitrariness entered into decisions about these terms, the basic intelligibility and integrity of the categories were established by submitting the data to independent judges for verification. Two senior psychology majors (The University of Tennessee, Knoxville) were given the category descriptions formulated by the author, the instructions for judging assignment of associates to categories (Appendix B), and the raw associate distributions for each stimulus term. To obtain a numerical value for interrater agreement, the number of instances when the two raters and the author agreed on the membership of associates in categories was divided by the total possible instances of an agreement (540). This generated five estimates of agreement which, when averaged for all five stimulus terms, was .845 (Table 1). This clearly is an acceptable level of rater concensus.

TABLE 1

Interrater Agreement for Content Categories

Stimulus Term	Percent Agreement
Curriculum	.894
Immediate reinforcement	.788
Individualized instruction	.836
School psychologist	.870
Criterion referenced test	.835
Mean agreement for 5 stimulus terms	.845

Acceptability Scoring

Some of the semantic categories were more technically accurate than others when judged by an external criterion. In order to compare linguistic differences and similarities among the groups as a function of the accuracy of their associations, the categories were assigned acceptability scores by a method suggested by Verplanck (personal communication). Acceptability here refers to the accuracy of the category in defining the technical meaning of the stimulus term.

A set of scoring instructions (Appendix C) were devised to guide three independent raters who scored the categories according to a 4,3,2,1,0 scheme with "4" being "clearly acceptable" and "0" being "unacceptable, downright wrong." The raters were urged to read any material on the terms and discuss their meaning with the author. After firmly fixing the definition of the terms, they were asked to maintain a consistent frame of reference throughout the scoring and

always respond as objectively as possible. (Appendix C contains scoring instructions, scoring criteria, and a sample list of categories for a sample stimulus term.) The three scorers were chosen from among the participant groups in the study: one school psychologist, one resource teacher, and one principal.

Interscorer agreement was sufficiently high to permit reasonable confidence in the scoring procedures. Across five stimulus terms, 91 categories were suitable for scoring; there were five scoring choices available (4,3,2,1,0). Perfect three-way agreement was obtained in 16.4% of the cases (chance probability of three-way agreement, .008); two-way agreement was obtained in 63.73% of the cases (chance probability, .04). Of the two-way agreements, in 47.67% of the cases, the deviant rater was separated from the other two by only one point. Quite clearly, these high levels of agreement (80.2% two-way agreement or better), allows a high degree of confidence in the acceptability scores derived.

A two-part decision procedure was used to, first, eliminate those categories with insufficient agreement and, second, to select a category score for those remaining where three-way consensus was not reached. First, categories were rejected for further analysis if the sum of the "difference scores" among the raters exceeded four (4). To illustrate, if three scores for a category were 2,4,4, the difference scores would be 2 (between the first two), 0 (between the last two), and 2 (between the first and third), totaling 2+2+0 = 4. This category, then, would be retained for analysis. Alternatively, if the three category scores had been 1,3,4, the difference scores would have been 2,1, and 3 totaling 6, in which case the difference score,

exceeding 4, would have disqualified the category for analysis. Second, of the categories without three-way agreement which did qualify for analysis, the median score was selected as the category score. In the illustrative case, the median score would be 4 (2,4,4).

Research Design and Data Analysis

The chief aim of this study was to describe language relationships of certain groups of education practitioners in the context of an organizational setting. Comparisons of verbal associations of six different groups was undertaken to provide a description of shared linguistic meaning among the groups and, by inference, of cognitive similarity (or dissimilarity) among the groups. The organizational setting chosen was not confined to a traditional, hierarchial organization (a school or school system, for example); instead it comprised several schools and school systems. Within this setting, role conflict was posited as the cause of organizational conflict, i.e., school psychologists were often at odds with the traditional educational system. This was true not of one or two schools nor of one or two school systems but was widespread in the East Tennessee region (and most likely in other geographic regions as well). A secondary purpose of the study was to explore the suitability of a research method (word association) for the purpose at hand. Systematic validation of the method was not attempted, however; that must await future studies.

Theoretically, the research may be characterized as descriptive/formulative. This mode of investigation may be classified according to purpose as "gaining familiarity with and insight into a phenomenon"

(Selltiz, et al., 1976). In simplified English, this may be understood as the "What would I discover if I did this to that?" approach.

The subjects were drawn (30 in each group) from city and county school systems in Blount, Loudon, and Knox Counties in Each Tennessee (seven systems) plus an educational cooperative in the same area. Subjects were not drawn from a single school or school system for two reasons: first the study was designed to examine generic differences among the practitioner groups. All the school systems basically shared the same circumstance of having recently hired comparatively large numbers of school psychologists to help the systems comply with the Weldon Bill (described in Chapter I). In this regard, all the practitioners were equally susceptible to role conflict. By drawing subjects from several systems the potential danger was avoided of the organizational idiosyncracies of a particular system unduly influencing the group comparisons. Second, no system alone was sufficiently large to supply 30 subjects for each group.

Word associations were given by the subjects to 26 original stimulus terms of which five were chosen for analysis in this study. The others await future analysis; the volume of data prohibited more extensive analysis at this time. Each of the 180 subjects submitted three associations (or left blanks) to each of the 26 stimulus terms. The five terms chosen for analysis each generated 180 X 3 = 540 associations (counting blanks). The associates were submitted to a content analysis which yielded semantic categories. With one exception, the categories were used as basic data for comparative measures among groups. The remaining analysis used the raw associates.

The data generated by the word association method used in the study (Short Concept Survey [SCS]) are voluntary, emitted responses to a stimulus. The instructions lend a focus to the responses but do not place unwarranted constraints on them. A basic assumption underlying the research method was that it is equally probably that any human being in the chosen population would make any association to a stimulus term. Therefore, if there are substantial differences in the distributions between populations, those differences are assumed to have arisen because of real differences in the concepts or perceptions of the stimulus term among the populations (Deese, 1965).

Research Procedures

Described below are the five different research procedures, or data treatments, which were employed to provide a general description of shared linguistic meaning among the education practitioners studied. It should be re-emphasized that the goal of the research procedures was to describe the extent and nature of shared meaning (or linguistic similarity, or linguistic relationships) among all practitioner groups, without singling out any group for special treatment. However, since school psychologists are of particular interest in the study, the results (Chapter III) are organized and presented in such a way to highlight the linguistic relationship of school psychologists to other groups.

Research procedure 1: a comparison of all group pairs was conducted based on language overlap computed using all "non-extraneous" categories. Each of the 15 possible combinations of group pairs

generated an overlap coefficient based on common associations contributed to the content categories. In this analysis, all non-extraneous[2] categories were eligible for treatment; in a later analysis, only the most technically correct categories were considered (procedure 4).

The general method of plotting linguistic overlap based on word associations was developed by Deese (1965). Overlap is a measure of the common linguistic elements in one or more distributions of associations. To produce an overlap coefficient (OC), the number of associations held in common by different persons or populations are divided by the geometric mean of the total possible common associations. This relationship is rendered by the formula $OC = \frac{S_1 \cap S_2}{\sqrt{N_1 \cdot N_2}}$ (Deese, 1965). In this study the OC is based on mutual group contributions of associates to content categories as well as to the entire distribution. To illustrate how overlap was plotted among groups based on content categories, first consider an individual category. For example, the stimulus term /school psychologist/ generated many associates which fell into a category named "tester, testing, test." Each practitioner group contributed a certain number of associates to this category; the total number of associates was 35. Of the groups, resource teachers contributed 12 associates and principals 10. Hence for this category and for these two groups $S_1 \cap S_2 = 10 \cap 12 = 10$. Now, considering contributions by these two groups to <u>all</u> eligible categories for the stimulus term /school psychologist/, we find these groups

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[2]Extraneous categories were catch-all categories like "Attitude-comment," "miscellaneous," etc.

contributed 34 and 45 associates respectively; hence, $S_1 \cap S_2 = 34 \cap 45 = 34$. This accounts for the formula numerator. The denominator is more simple. The total possible common elements between resource teachers and principals is 90 (counting blanks) as shown by: $\sqrt{N_1 . N_2} = \sqrt{90.90} = 90$. Now we have, for the stimulus term /school psychologist/, the formula values to compute the OC between principals and resource teachers: $OC = \frac{S_1 \cap S_2}{\sqrt{N_1 . N_2}} = \frac{34 \cap 45}{\sqrt{90.90}} = \frac{34}{90} = .38$. By this method, OCs were computed for all group pairs, for all stimulus terms. These OCs furnished the numerical data for ranking the group pairs and thus provided a basis for comparing the group pairs for linguistic similarity. The computation of OCs and subsequent ranking of the data was central to three of the five research procedures used in the study.

In computing the overlap measures, two methodological decisions were made which should be noted. First, overlap coefficients were computed both with blanks (which means no associate was given to a stimulus term) and ignoring blanks. These computations produced slight differences in the OC values but insignificant differences in the resulting rank ordering of the groups pairs (rho = .93; $\underline{t}$ = 8.64 with 14 df; P = <.001). Hence, all computations are figured with blanks in the denominator. Second, overlap coefficients were computed based on overlap among associates and overlap among content categories. Again differences were produced in the coefficient values (category coefficients were approximately 300% higher than associate coefficients) but only negligible differences in rank orderings of group pairs (rho = .89; $\underline{t}$ = 7.0 with 14 df; P = <.001). Again, for brevity, all computations are based on categories.

In research procedure 1, the OCs were computed using all non-extraneous categories. From the subsequent rankings of the OCs, graphs of the comparative language overlap between various group pairs were plotted to show the relationship among the pairs (Figures 1 through 6).

Research procedure 2: a comparison of groups was conducted which was based on language overlap internal to each group. The 30 members of each practitioner group generated certain common associates within their own distributions. Computing the OCs within each group furnished a different perspective on language overlap by allowing each practitioner group to figuratively and literally speak for itself, and not rely on other, possibly dissimilar, groups for a measure of language congruency.

To determine the extent of linguistic overlap among the 30 subjects within each group, the OC was based on raw associates rather than on categories. To illustrate, for the stimulus term /school psychologist/, the 30 resource teachers produced 20 total common associates; total possible common associates was 90. Hence the formula adaption yields $OC = \frac{S}{N} = \frac{29}{90} = .32$, which is a measure of linguistic similarity within a single group.

As in the previous procedure, these OCs became the basis for ranking the groups for the purpose of comparison. These rankings are presented in a single figure (Figure 7) which shows the relative standing of groups across all stimulus terms.

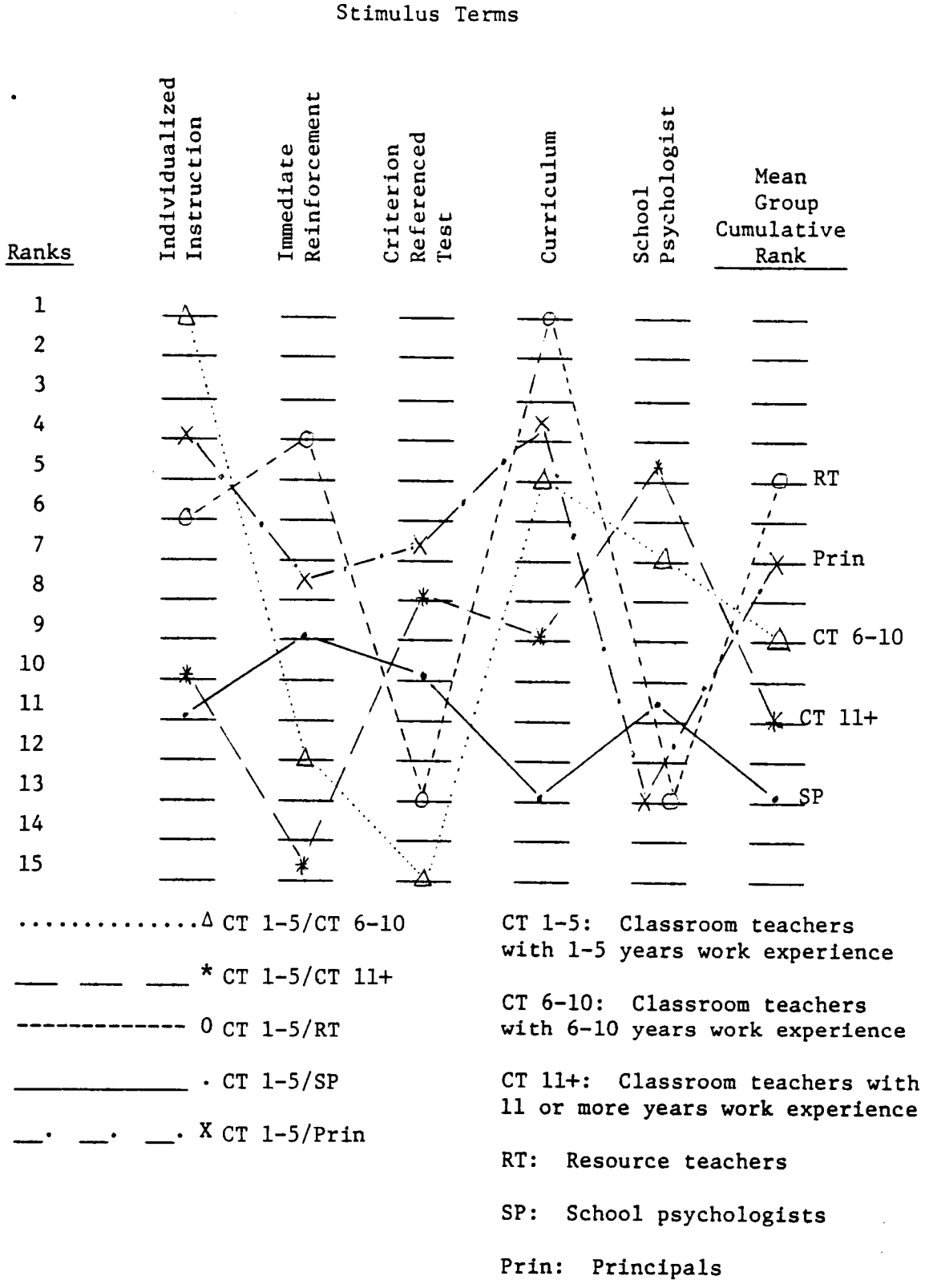


Figure 1. Group pair comparisons of overlap ranks for: Classroom teachers with 1-5 years work experience (CT 1-5).

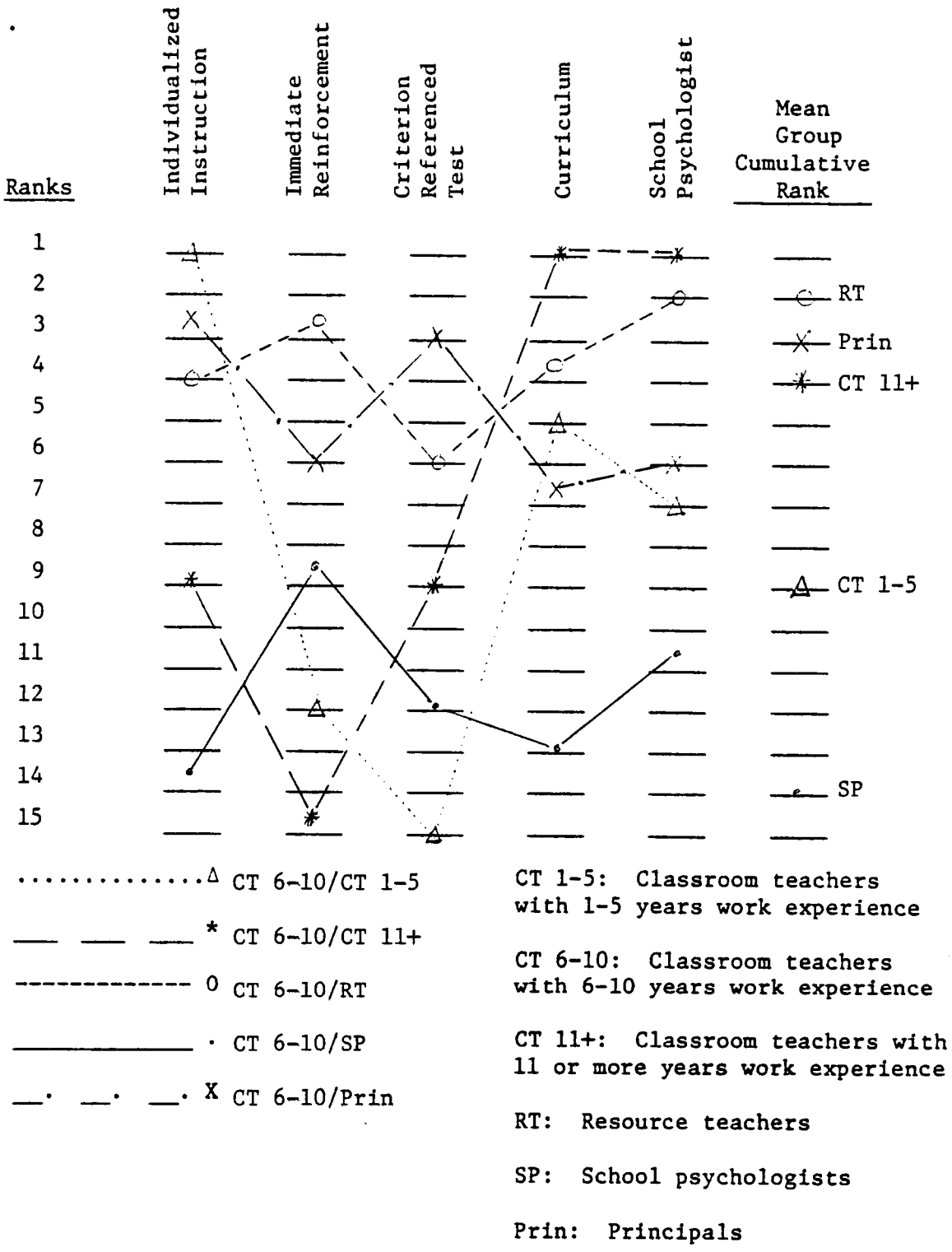


Figure 2. Group pair comparisons of overlap ranks for: Classroom teachers with 6-10 years work experience (CT 6-10).

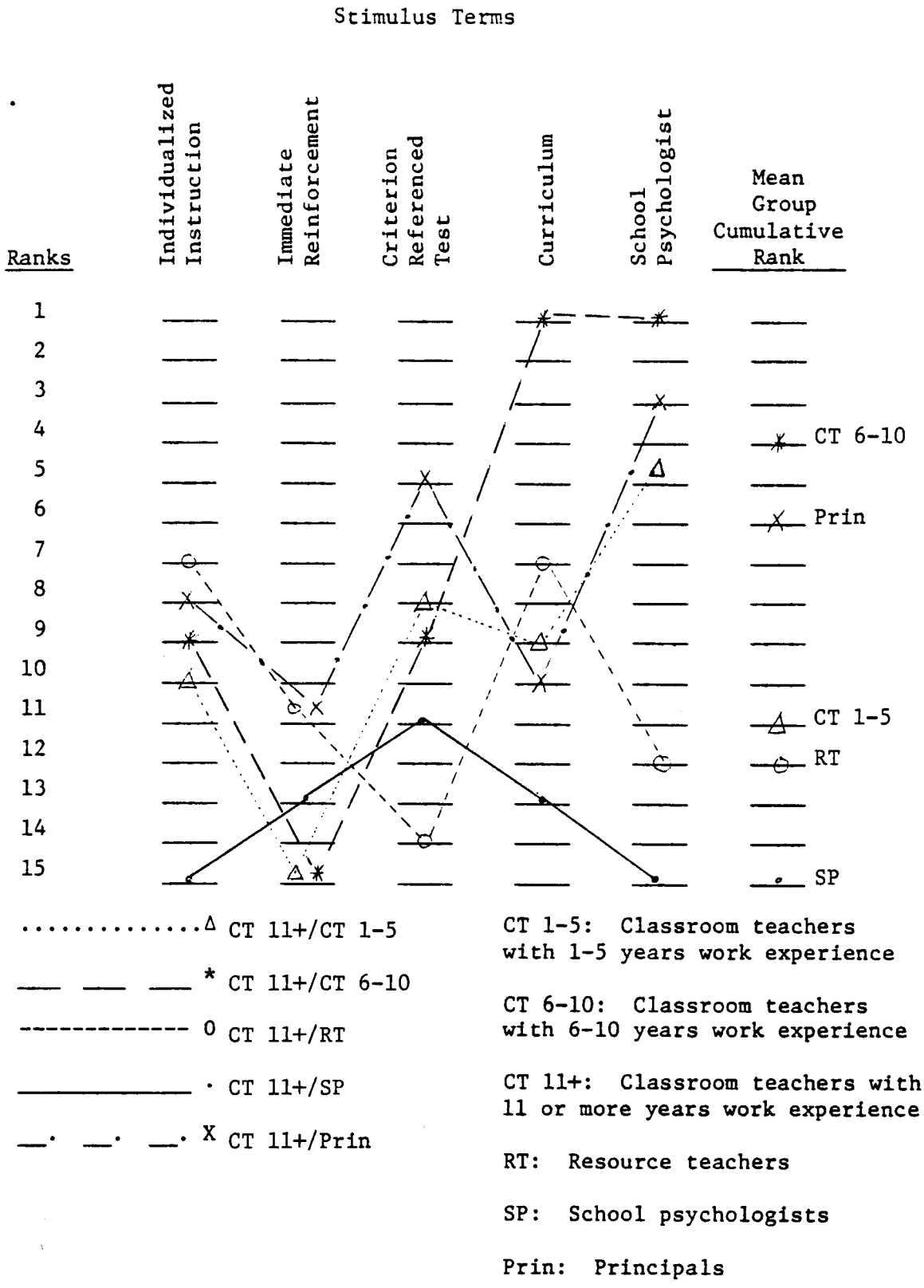


Figure 3. Group pair comparisons of overlap ranks for: Classroom teachers with 11 or more years work experience (CT 11+).

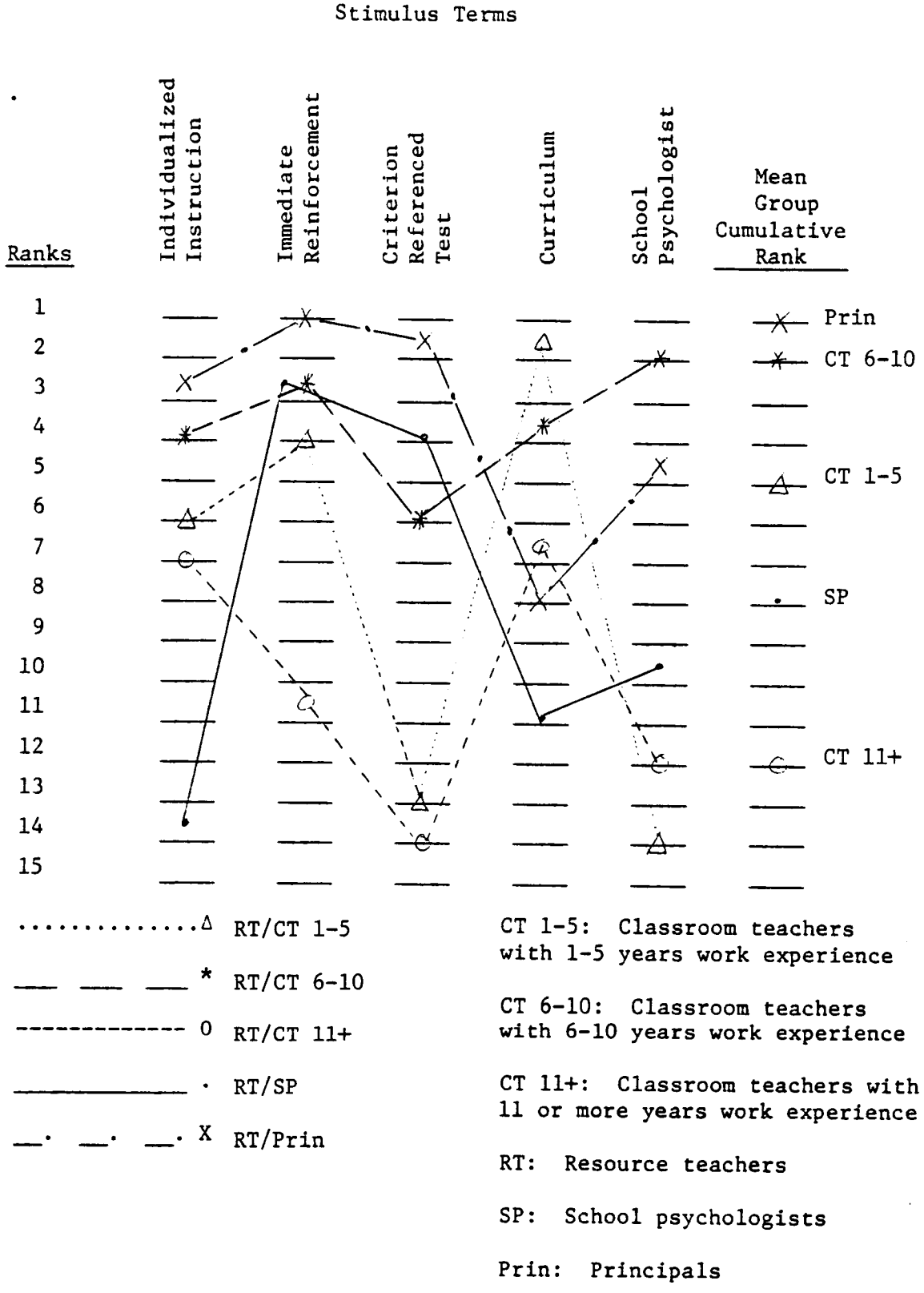


Figure 4. Group pair comparisons of overlap ranks for: Resource teachers (RT).

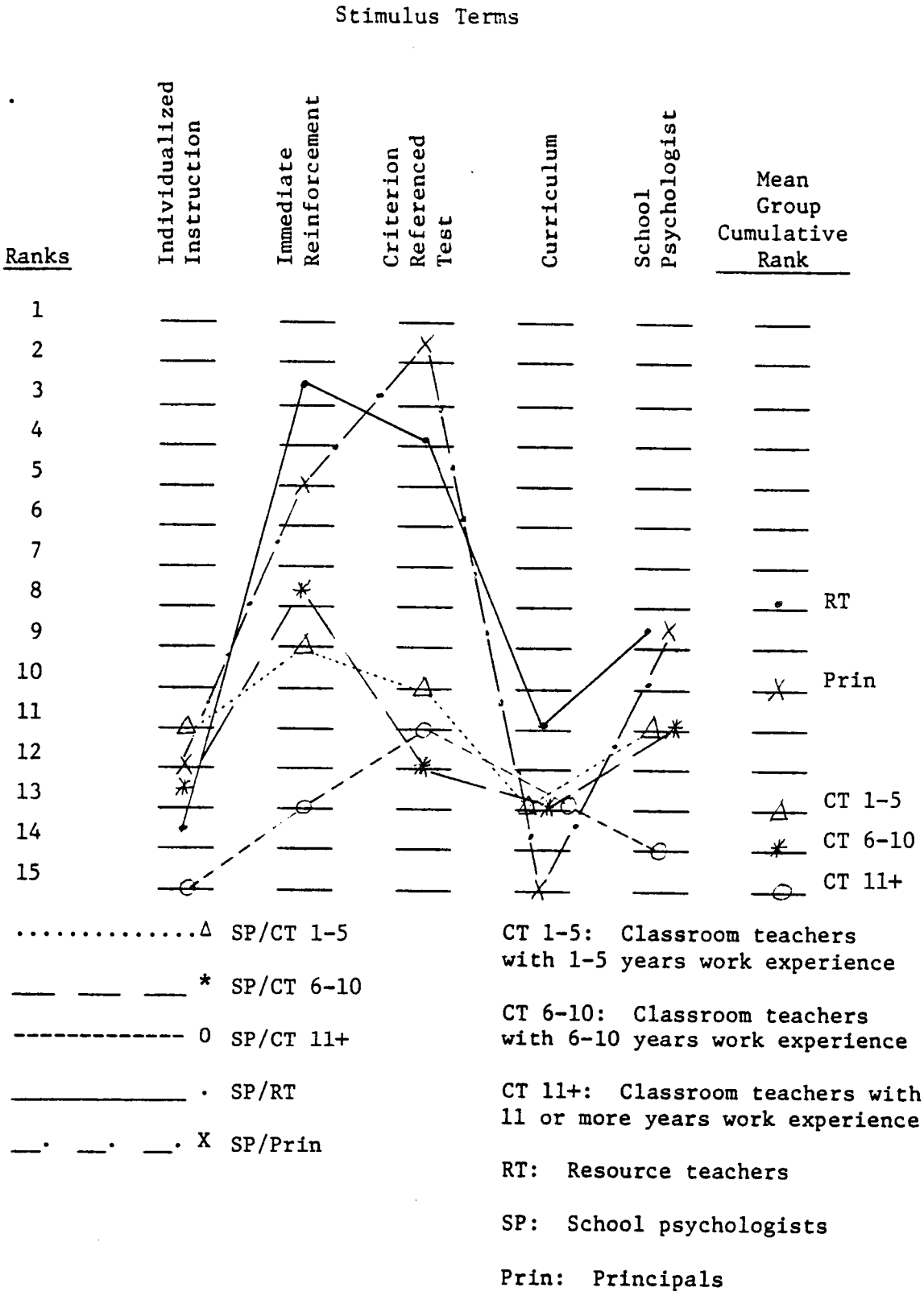


Figure 5. Group pair comparisons of overlap ranks for: School psychologists (SP).

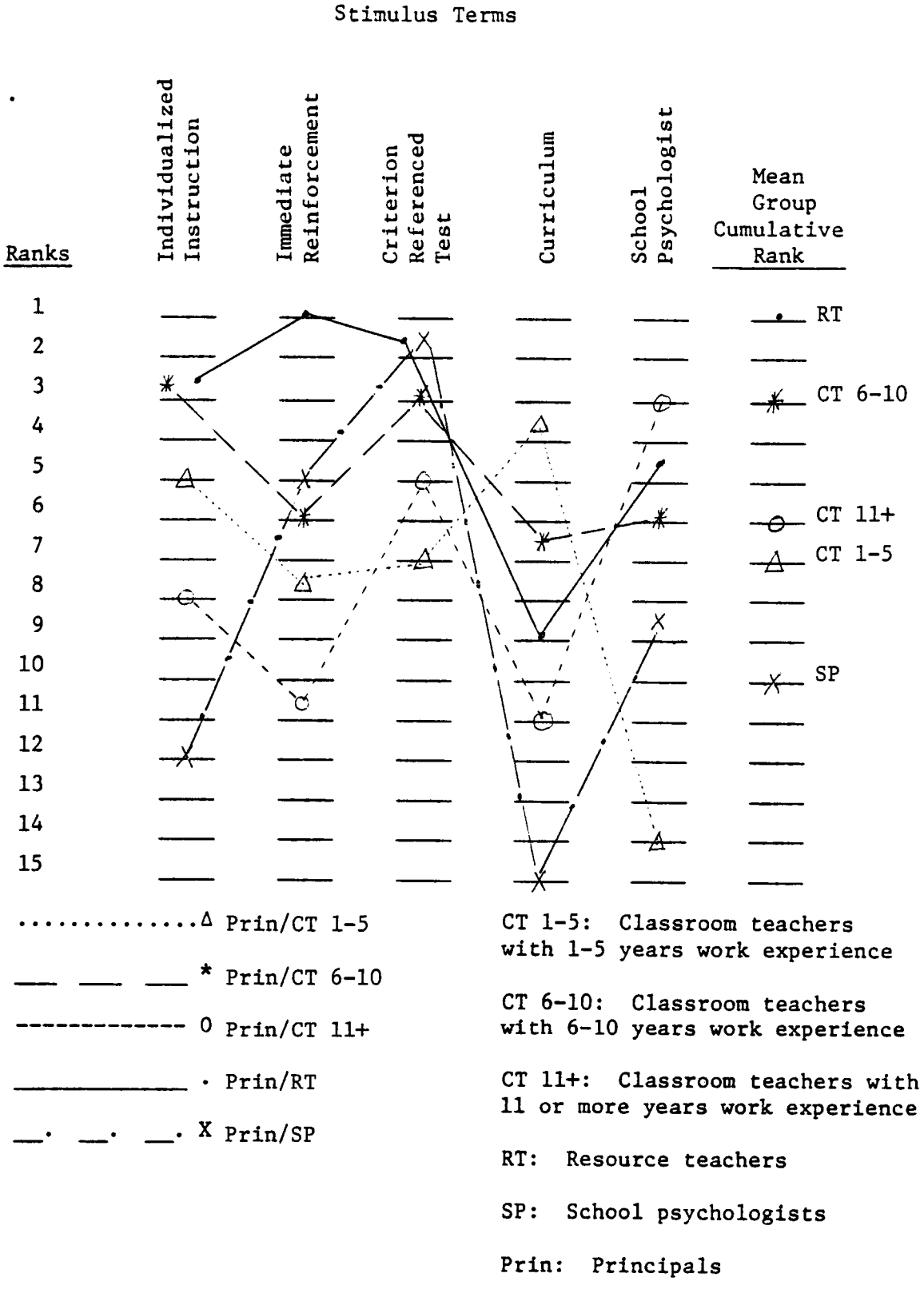


Figure 6. Group pair comparisons of overlap ranks for: Principals (Prin).

Ranks	Stimulus Term					Rank of Total Group Internal Overlap
	Individualized Instruction	Immediate Reinforcement	Criterion Referenced Test	Curriculum	School Psychologist	
1	Prin	RT	Prin	CT 11+	Prin	Prin
2	RT	CT 1-5	B,C*	F,D*	RT	RT
3	CT 11+	SP			SP	CT 11+
4	CT 6-10	CT 6-10	D,E**	CT 1-5	CT 1-5	CT 6-10
5	CT 1-5	Prin		CT 6-10	CT 6-10	CT 1-5
6	SP	CT 11+	CT 1-5	SP	CT 11+	SP

*Two groups tied for rank of 2.5; see legend below for code.

**Two groups tied for rank of 4.5; see legend below for code.

Group Code

A CT 1-5 = Classroom teachers with 1-5 years work experience.
B CT 6-10 = Classroom teachers with 6-10 years work experience.
C CT 11+ = Classroom teachers with 11 or more years work experience.
D RT = Resource teachers.
E SP = School psychologists.
F Prin = Principals.

Figure 7. Comparisons of internal group overlap ranks.

Research procedure 3: a comparison of groups was conducted based on the technical accuracy of the associations. As described earlier, all categories were submitted to a scoring procedure (acceptability scoring) to determine the technical accuracy of the categories. Through the procedure, it was possible to compare groups as to how accurately they defined the stimulus terms. The method of assigning acceptability scores described earlier produced a score (4,3,2,1,0) for each category. A weighted score was derived by multiplying the acceptability score by the number of associates in the category. To illustrate, if a category, "not norm-referenced," under the stimulus term /criterion referenced test/ received an acceptability score of 4 (clearly acceptable), and a practitioner group (resource teachers) contributed five associates to the category, resource teachers would have received a weighted score of 20 toward a larger total weighted acceptability score for /criterion referenced test/. In the data analysis, acceptability scores were divided according to acceptability level, i.e., scores achieved for acceptability level 3 categories were differentiated from scores for acceptability level 2 categories, etc. This was done to compare groups according to their relative degree of contribution to the most technically accurate categories for each stimulus term. A matrix was therefore generated for each stimulus term consisting of the four acceptability levels on one dimension, the practitioner groups on the other, and the weighted acceptability scores filling the cells of the matrix (Appendix E). These acceptability scores were then ranked to achieve a measure of comparison between the groups for each stimulus term. These ranked data appear on pages 56 through 60, this time with the practitioner

groups ranked from highest to lowest for each of the four acceptability levels (the first four columns) and ranked across all acceptability levels in a final column.

Research procedure 4: comparisons were made among all group pairs based on language overlap re-computed using only categories receiving an acceptability score of 4. This procedure was a repeat of procedure 1 except overlap was computed between groups on the most technically accurate categories (acceptability level 4). The data are presented in exactly the same format as in procedure 1 and much can be gleaned, with some work, from a dual comparison of the six matching pairs of figures.

Research procedure 5: a comparison of group differences was conducted based on an inspection of individual categories of meaning and each group's frequency of associate contribution to the categories. The categories of meaning were individually interesting because of differences in the contribution of associates by various practitioner groups. For example, the stimulus term /school psychologist/ produced many fascinating contrasts between school psychologists and the classroom teacher groups because on certain categories the teachers had very high contribution and school psychologists very low; for other categories the reverse held true. The data for this procedure are contained in listings of all content categories for each term, including the acceptability score of each category, frequency of contribution of all groups to the category, and frequency of contribution of each individual group to the category.

CHAPTER III

RESULTS

The results are based on five comparative analyses of observed differences among the six education practitioner groups with respect to: the degree of linguistic overlap among various group pairs, the degree of linguistic overlap within individual groups, the degree of technical accuracy in defining terms, and the degree of linguistic similarity on certain categories of semantic meaning. Interpretation of the data is complicated somewhat by cross-referencing among the large number of figures and tables. The reader is asked to recognize that the goal of this section is not to discuss the working hypotheses listed in Chapter I but to present a "mapping" of shared linguistic meaning among the education practitioner groups. This is organized around the five research procedures listed in Chapter II. These shared linguistic characteristics cannot be portrayed simplistically and will require patience and forbearance from the reader to assimilate extensive data.

Although identical data are presented for each of the six practitioner groups, only one of the groups, school psychologists, will receive focused attention in the interpretative narrative of this chapter. Other groups will be discussed only to the extent felt necessary to illuminate the relational characteristics of their language to that of school psychologists. As it turned out, next to school psychologists, resource teachers and classroom teachers received the most attention. Many valuable and deserving observations about

other groups and other aspects of the data have probably been slighted or ignored in the discussion. Perhaps this can be excused in part by noting that research data are often forced to an inevitable Procrustean Bed by limited time and limited purpose.

The reader should also be aware of some precautions necessary in interpreting the data. Without an expanded context of additional studies which establishes landmarks in the linguistic terrain sampled by this study, all but the most distinctive and gross differences among groups are ignored. Hence, the narrative of the results will only deal with the peaks and valleys of the language landscape mapped by the data.

The results will be reported in five divisions according to the five research procedures employed in the analysis.

Research Procedure 1

Comparisons were made between all group pairs based on language overlap computed using all "non-extraneous" categories. To ascertain the extent to which groups differed on this overlap measure, the 15 OCs generated by the group pairs were ranked from highest to lowest (1 = highest overlap; 15 = lowest). This yielded a measure for comparing language similarity between the group pairs for each of the five stimulus terms. These rankings, in effect, represent a rough index of each group pair's mutual understanding of language when compared with other group pairs. The figures (Figure 1 through 6, pages 37, 38, 39, 40, 41, 42) presenting these rankings depict the data graphically to show the relationships between groups more clearly.

(The composite data on which the rankings are based can be found in Appendix D, Table D-1.)

Figures 1 through 6 (pages 37, 38, 39, 40, 41, 42) are a bit complicated but easily grasped once certain features are understood. Each figure is devoted to one practitioner group, and plots the overlap ranking of that group when paired with other groups. The rank positions are arranged vertically from highest to lowest. There are five columns of ranks, each representing rankings for one stimulus term, followed by a final column representing the mean cumulative rank across all stimulus terms. The symbols of group pairs (/Δ/, /*/, /0/, /./, /X/) vary from figure to figure because of the permutations of pairings; the key to the symbols is at the bottom of each figure. The reader is cautioned that the symbol for a group pair is not the same for each figure.

To illustrate how the figures should be interpreted, look at Figure 1 (page 37). Under /individualized instruction/ we see that younger classroom teachers (CT 1-5) and mid-experience classroom teachers (CT 6-10), denoted by the symbol Δ, achieved the highest overlap rank (1). This ranking indicates that of all groups these two enjoyed the best comparative mutual understanding of individualized instruction.[1] Looking at other features of Figure 1 (page 37), it is readily seen that CT 1-5 were somewhat low on overlap rankings on the

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[1]The reader should reserve judgment on this interpretation, however, until viewing the second set of matching graphs (pages 67-72) which plot overlap ranks based on only the most technically correct categories. In some cases, there were gross disparities between the matching graphs, showing that high overlap ranking on the first set was achieved with less technically accurate associations--a "pooling of ignorance" as opposed to a sharing of technically refined language.

stimulus term /criterion referenced test/ and were definitely high on /curriculum/. These younger teachers were consistently low with school psychologists (SP); they achieved highest overlap with resource teachers (RT), experiencing wide fluctuations from stimulus term to stimulus term with RT. The final column "Mean Group Cumulative Rank," shows the average of overlap ranks for CT 1-5 paired with each other group, summed across all five stimulus terms.

The reader is encouraged to inspect all six graphs to fix in his mind the kinds of information described in the Figure 1 illustration (page 37), as this interpretative detail will not necessarily be provided for each figure. It should be noted for future reference that pages 67-72 are identical in format, if not in information to Figures 1-6 (pages 37-42).

School psychologists. Inspection of the Mean Group Cumulative Rank columns in Figures 1-6 (pages 37-42) reveals that SP have the lowest overlap rank with four of the five groups (Figures 1, page 37; 2, page 38; 3, page 39; and 6, page 42) and were next to the lowest with the other group, RT (Figure 4, page 40). This means that for the stimulus terms examined that SP were rock bottom in average mutual language understanding with all practitioner groups. Further, the graph for SP, Figure 5 (page 41), reveals that SP were lowest of low with the three teacher groups (ranks 13, 14, 15) and only moderately higher with RT (8) and Prin (10). This division did produce, however, a distinctive visual split between group sets (Figure 5, page 41). School psychologists obviously had distinctly more associative language similarity with Prin and RT as a set than with the three teacher groups

as a set. Another distinctive feature of this graph is the higher ranks achieved by SP on two of the five terms. School psychologist overlap rankings are generally much higher on /immediate reinforcement/ and /criterion referenced test/ than on the other terms. Of the five terms, the first two are the most germane to the daily work role of SP.

Other groups. Resource teachers consistently had the highest overlap with all other groups (ranks of 1,2,4,8,12; Figure 4, page 40). Resource teachers had very low overlap (rank of 12) only with older classroom teachers (CT 11+). Resource teachers were the only group which did not have SP as their lowest overlap group (CT 11+ were lower). Resource teachers had good language congruency with all groups except CT 11+. This good performance might be attributed to the role of RT in the school which daily brings them into communication contact with a cross section of school personnel. Also their role in consulting and conferring with others would presumably give them training in collaboration, joint decision making, and effective communication.

Principals (Figure 6, page 42) were similar to RT in achieving high overlap with nearly all groups (ranks 1,3,6,7,10). The graph profile of Prin was homogeneous, i.e., it showed little scatter and fluctuation. This indicates that Prin shared language understanding effectively with other groups, experiencing grossly ineffective language congruency with none. Unlike RT, Prin achieved a relatively high rank (6) with CT 11+. Principals would seem to be the true generalists or politicians of the school work place, able to communicate effectively with most, possibly all, without mis-perceiving the meanings of any.

The older classroom teachers (Figure 3, page 39) achieved an interesting split in the "Mean Group Cumulative Ranks" column, i.e., CT 6-10 and Prin as a set were much higher than CT 1-5, RT, SP as a set. One factor which distinguishes these two sets of practitioners is age or work experience. Apparently, older teachers tend to share language more effectively with other older practitioners, but, overall, not well at all.

The middle experience group of teachers (CT 6-10) had a heterogeneous profile, showing a great deal of scatter and fluctuation (Figure 2, page 38). The "Mean Group Cumulative Rank" colums for this group shows a split between two sets of groups with RT, Prin, CT 11+ being high and CT 1-5, SP being low. Why this was so is unclear. Apparently CT 6-10 represent a "swing" group which exhibits a mixture of language congruency with other groups which is selectively based on age, role, and the technical meaning of the stimulus terms. Throughout the study, the performance of CT 6-10 continued to be the most puzzling of all groups (if not the most revealing).

The profile for younger teachers (CT 1-5) had few distinctive characteristics. These teachers achieved highest cumulative overlap with RT and Prin, not with their fellow teachers. This was more or less a norm for the teacher groups. Evidently, the basis for technical language sharing among classroom teachers themselves is less well developed than among teachers and other practitioners in the school.

The data from Figures 1 through 6, (pages 37, 38, 39, 40, 41, 42) are summarized in Table 2. On the left are listed the Mean Group Cumulative Ranks from Figures 1 through 6 (pages 37, 38, 39, 40, 41, 42), rank ordered by group pair names. To the right of the group pair

TABLE 2

Summary of Ranked Data Based on Overlap of Group Pairs Considering All "Non-Extraneous" Categories

Cumulative Ranks	Group Pair Names	Group Pair Numbers*	Total Group Ranks	
1	RT/Prin	4/6	4/1 + 4/2 + 4/3 + 4/5 + 4/6 = 1	Resource Teachers
2	CT 6-10/RT	2/4	6/1 + 6/2 + 6/3 + 6/4 + 6/5 = 2	Principals
3	CT 6-10/Prin	2/6	2/1 + 2/3 + 2/4 + 2/5 + 2/6 = 3	CT 6-10
4	CT 6-10/CT 11+	2/3	1/2 + 1/3 + 1/4 + 1/5 + 1/6 = 4	CT 1-5
5	CT 1-5/RT	1/4	3/1 + 3/2 + 3/4 + 3/5 + 3/6 = 5	CT 11+
6	CT 11+/Prin	3/6	5/1 + 5/2 + 5/3 + 5/4 + 5/6 = 6	School Psychologists
7	CT 1-5/Prin	1/6		
8	RT/SP	4/5		
9	CT 1-5/CT 6-10	1/2		
10	SP/Prin	5/6		
11	CT 1-5/CT 11+	1/3		
12	CT 11+/RT	3/4		
13	CT 1-5/SP	1/5		
14	CT 6-10/SP	2/5		
15	CT 11+/SP	3/5		

*CT 1-5 = Classroom teachers with 1-5 years work experience - Group 1;
CT 6-10 = Classroom teach-rs with 6-10 years work experience - Group 2;
CT 11+ = Classroom teachers with 11 or more years work experience - Group 3;
RT = Resource teachers - Group 4;
SP = School psychologists - Group 5;
Prin = Principals - Group 6.

names are group pair numbers. The numbers are employed to illustrate the way data was summarized in the far right column "Total Group Ranks." This column is a kind of grand ranking of data to provide an overall index of each practitioner group's language overlap. Since the statistic was arrived at through combining rankings of non-independent measures, it should be viewed only as a crude index of overall language overlap. However, as we shall see later, this "grand ranking" is similar to other group rankings derived through different procedures. The rankings reveal that RT was 1 in producing linguistic overlap, SP was 6, with other groups falling in between.

Research Procedure 2

A comparison of groups was conducted which was based on language overlap internal to each group. This analysis was carried out to discover whether SP or any other group experienced an unusual degree of internal language congruency within the members of their own group, thus indicating that group members had an internal language well understood among themselves but possibly not shared by other groups. To ascertain this, an analysis of language overlap among members in each individual group was undertaken. The resulting data were ranked and are portrayed in Figure 7 (page 43). The ranks 1-6 (1 = highest; 6 = lowest) are arranged vertically on the left of the figure followed by five columns of independent ranks for each stimulus term. A final column contains the "Rank of Total Group Internal Overlap." To illustrate how the figure is read, observe in the first column, /individualized instruction/, that Prin ranks first. This means that for this term, Prin generated the highest associate overlap among the

30 members of their group. Conversely, SP occupied the sixth rank, which means that on this stimulus term SP generated the lowest associate overlap among members of their group, and so forth. The groups were assigned codes (A-F) to provide a convenient method of depicting tied ranks.[2]

Contrary to what was expected, SP did not show greater overlap than other groups on this measure. In fact, SP ranked last on this measure (Figure 7, page 43). They did achieve somewhat higher overlap on the stimulus terms more related to SP work, i.e., /immediate reinforcement/, /criterion referenced test/, and /school psychologist/. However, they ranked third to RT and CT 1-5 on /immediate reinforcement/, tied at 4.5 with RT behind Prin, CT 6-10 and CT 11+ on /criterion referenced test/ and ranked third behind Prin and RT on /school psychologist/. School psychologists were dead last on /individualized instruction/ and on /curriculum/. This finding certainly contradicts the notion that because of their technical training, school psychologists share among themselves an arcane technical language, not well understood by traditional educators.

Research Procedure 3

A comparison of groups was conducted based on the technical accuracy of their associations. This analysis used a procedure to score content categories for technical accuracy (see Chapter II for a description of scoring procedures). These scores are called

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[2]Note that pages 56-60 have the same format as Figure 7 (page 43) but the column headings differ. These data deal with acceptability scores and not with overlap.

acceptability scores; when an acceptability score is multiplied by the number of associates receiving the score, a weighted score is yielded. The weighted score became the basis for ranking groups according to their relative level of technical accuracy in defining the stimulus terms. These rankings are presented in five figures, one for each stimulus term (Figures 8 through 12). The format for these figures, as mentioned earlier, is similar to that of Figure 7 (page 43). Figures 8-12, however, have "acceptability levels" (4,3,2,1) for column headings, instead of stimulus terms. Recall that the acceptability level refers to the score assigned to categories, ranging from 4 (clearly acceptable, etc.) to 0 (unacceptable, etc.). The zero acceptability level is not included in the figures because the zero level generated no weighted score. To illustrate how the figures are read, observe Figure 8. Ranks 1-6 (1 = highest; 6 = lowest) are listed vertically on the left of the figure. The weighted acceptability scores of the six practitioner groups are ranked from highest to lowest in four columns corresponding to each of the four acceptability levels (4,3,2,1). The abbreviated name of the practitioner groups used throughout the study is used to denote the rank position of the groups in the figure matrices. For example, Figure 8, /individualized instruction/, reveals that principals ranked 1 in generating weighted acceptability scores under acceptability level 4 (clearly acceptable, etc.). Following principals were CT 6-10, CT 1-5, RT, SP, CT 11+. This ranking is a kind of comparative index of each group's ability to produce a <u>refined technical definition</u> of /individualized instruction/. Under acceptability level 3 is a second ranking of groups where RT were 1 followed by Prin, CT 6-10, CT 1-5,

Ranks	Acceptability Levels				Rank of Total Acceptability Scores
	4	3	2	1	
1	Prin	RT	CT 1-5		Prin
2	CT 6-10	Prin	B,D**	A,B,C*	CT 6-10
3	CT 1-5	CT 6-10			RT
4	RT	CT 1-5	Prin	RT	CT 1-5
5	SP	CT 11+	CT 11+	Prin	SP
6	CT 11+	SP	SP	SP	CT 11+

*Three groups tied for rank of 2; see legend below for code.

**Two groups tied for rank of 2.5; see legend below for code.

Group Code

A CT 1-5 = Classroom teachers with 1-5 years work experience.
B CT 6-10 = Classroom teachers with 6-10 years work experience.
C CT 11+ = Classroom teachers with 11 or more years work experience.
D RT = Resource teachers.
E SP = School psychologists.
F Prin = Principals.

Figure 8. Group comparisons of ranks based on acceptability scores; stimulus term: INDIVIDUALIZED INSTRUCTION.

Ranks	Acceptability Levels				Rank of Total Acceptability Scores
	4	3	2	1	
1	RT	RT	CT 1-5	CT 6-10	RT
2	CT 6-10	CT 1-5		SP	CT 1-5
3	Prin	SP	C,D*	Remaining groups tied with zero (0) weighted score	SP
4	CT 11+	Prin	Prin		CT 6-10
5	SP	CT 6-10	SP		Prin
6	CT 1-5	CT 11+	CT 6-10		CT 11+

*Two groups tied for rank of 2.5; see legend below for code.

Group Code

A CT 1-5 = Classroom teachers with 1-5 years work experience.
B CT 6-10 = Classroom teachers with 6-10 years work experience.
C CT 11+ = Classroom teachers with 11 or more years work experience.
D RT = Resource teachers.
E SP = School psychologists.
F Prin = Principals.

Figure 9. Group comparisons of ranks based on acceptability scores; stimulus term: IMMEDIATE REINFORCEMENT.

Ranks	Acceptability Levels				Rank of Total Acceptability Scores
	4	3	2	1	
1	RT	SP	SP	All groups tied with zero (0) weighted score	SP
2	SP	Prin	Prin		Prin
3	F,B*	RT	A,D*		RT
4		B,C**			CT 6-10
5	CT 1-5		CT 6-10		CT 1-5
6	CT 11+	CT 1-5	CT 11+		CT 11+

*Two groups tied for rank of 3.5; see legend below for code.

**Two groups tied for rank of 4.5; see legend below for code.

Group Code

A CT 1-5 = Classroom teachers with 1-5 years work experience.
B CT 6-10 = Classroom teachers with 6-10 years work experience.
C CT 11+ = Classroom teachers with 11 or more years work experience.
D RT = Resource teachers.
E SP = School psychologists.
F Prin = Principals.

Figure 10. Group comparisons of ranks based on acceptability scores; stimulus term: CRITERION REFERENCED TEST.

Ranks	Acceptability Levels				Rank of Total Acceptability Scores
	4	3	2	1	
1	Prin	CT 11+	RT	All groups tied with zero (0) weighted score	CT 6-10
2	CT 6-10	RT	CT 1-5		CT 11+
3	CT 1-5	CT 1-5	SP		Prin
4		CT 6-10	B,C*		A,D*
5	C,D,E**	Prin			
6		SP	Prin		SP

*Two groups tied for rank of 4.5; see legend below for code.

**Three groups tied for rank of 5; see legend below for code.

Group Code

A CT 1-5 = Classroom teachers with 1-5 years work experience.
B CT 6-10 = Classroom teachers with 6-10 years work experience.
C CT 11+ = Classroom teachers with 11 or more years work experience.
D RT = Resource teachers.
E SP = School psychologists.
F Prin = Principals.

Figure 11. Group comparisons of ranks based on acceptability scores; stimulus term: CURRICULUM.

Ranks	Acceptability Levels				Rank of Total Acceptability Scores
	4	3	2	1	
1	SP	RT	RT	RT	RT
2	RT	Prin	B,C*		SP
3	Prin	B,C**		A,B,C****	Prin
4	CT 6-10		SP		CT 6-10
5	CT 11+	A,E***	CT 1-5	Prin	CT 11+
6	CT 1-5		Prin	SP	CT 1-5

*Two groups tied for rank of 2.5; see legend below for code.

**Two groups tied for rank of 3.5; see legend below for code.

***Two groups tied for rank of 4.5; see legend below for code.

****Three groups tied for rank of 3; see legend below for code.

Group Code

A CT 1-5 = Classroom teachers with 1-5 years work experience.
B CT 6-10 = Classroom teachers with 6-10 years work experience.
C CT 11+ = Classroom teachers with 11 or more years work experience.
D RT = Resource teachers.
E SP = School psychologists.
F Prin = Principals.

Figure 12. Group comparisons of ranks based on acceptability scores; stimulus term: SCHOOL PSYCHOLOGIST.

CT 11+, SP. This ranking represents a comparative index of each group's ability to produce an acceptable definition of /individualized instruction/. Acceptability levels 2 and 1 are interpreted similarly, referring however to decreasingly less acceptable definitions of /individualized instruction/. The final column "Rank of Total Acceptability Scores" is a ranking of the six groups based on a summation of weighted acceptability scores across all four acceptability levels. This gives a composite picture of each group's ability to produce a good technical definition of /individualized instruction/. Here, principals ranked first followed by CT 6-10, RT, CT 1-5, SP, and CT 11+.

The remaining four figures represent the other four stimulus terms. The reader is encouraged to review each of these figures before continuing.

School psychologists. It is readily seen in examining the figures that the performance of SP was mixed. On terms less germane to the work of SP, i.e., /individualized instruction/ and /curriculum/, they produced comparatively little technical accuracy. In the total acceptability score columns of Figure 8 (page 56), /individualized instruction/, and Figure 11 (page 59), /curriculum/, SP ranked 5 and 6 respectively. On each term they also did poorly in producing technically sophisticated definitions for the terms, achieving no higher rank than 5 on either of acceptability levels 4 or 3.

For terms more germane to SP work, however, SP did comparatively better in producing technical accuracy. On /immediate reinforcement/ (Figure 9, page 57), SP ranked 3 in the total acceptability scores

column behind RT and CT 1-5. From one perspective, SP could have been expected to have achieved top rank. Immediate reinforcement denotes a procedure in classroom contingency management for which SP presumably had received more training than other groups. Clearly, however, SP had no exclusive claim to technical knowledge of this term. On the term /school psychologist/ (Figure 12, page 60), SP achieved a total acceptability score rank of 2 behind RT. SP did rank first, however, in producing refined technical associations (acceptability level 4) to /school psychologist/. Apparently, SP do moderately well at following the dictum of "know thy self." On the stimulus term /criterion referenced test/ (Figure 10, page 58), SP showed an apparent superiority to all other groups. Ranking 1 on the total acceptability score column, SP also ranked 1 in two of the acceptability level columns (3 and 2). In numerical terms, SP showed a dramatically greater knowledge of /criterion referenced test/ than did three of the other groups--the classroom teachers. The total weighted acceptability scores of SP doubled and tripled those of the classroom teachers (Appendix E, Table E-3). The weighted scores of RT and Prin, incidentally, were far closer to that of SP than those of the teachers. The low productivity of the teachers suggested a serious deficiency of knowledge among teachers about criterion referenced testing.

Other groups. The performance of the teacher groups on /school psychologist/ and /criterion referenced test/ is interesting. As noted above, the teacher groups produced low technical accuracy rankings for /criterion referenced test/; they ranked 4,5,6 in the total acceptability

score column (Figure 10, page 58). The same held true (rank 4,5,6) for /school psychologist/ (Figure 12, page 60). Recalling the overlap analysis done earlier (Figures 1-6, pages 37-42), it was observed that the three teacher groups produced high to moderate group pair overlap on /school psychologist/ and /criterion referenced test/. For /school psychologist/ (Figures 1-2, pages 37-38), they achieved group pair ranks of 1,4.5, and 7. For /criterion referenced test/ they achieved group pair ranks of 8,9, and 15. The lack of congruency between these measures indicates that much of teachers' shared knowledge about /school psychologist/ and /criterion referenced test/ is actually "pooled ignorance"--a common misunderstanding about the terms.

On the remaining three terms, i.e., /immediate reinforcement/, /individualized instruction/, and /curriculum/, teachers did much better in producing technically accurate definitions (Figures 8, 9, and 11, pages 56, 57, and 59). Mid-experience teachers (CT 6-10) achieved the overall highest rankings in the total acceptability score columns (2,4,1). They were followed by RT (3,4.5,1), Prin(1,5,3), CT 1-5 (4,2,4.5), CT 11+ (6,6,2), and SP (5,3,6).

Looking at overall performance, RT and Prin achieved the greatest technical accuracy of all groups. Figure 13 summarizes the data in Figures 8-12 (pages 56-60). The final column is a ranking of total weighted acceptability scores summed across all acceptability levels and all stimulus terms and shows RT and Prin finishing 1 and 2 respectively. SP were well back in the pack in the 4 position, demonstrating no special ability in producing technically accurate

Ranks	Acceptability Levels				Rank of Total Acceptability Scores
	4	3	2	1	
1	Prin	RT	RT	CT 6-10	RT
2	RT	Prin	CT 1-5	CT 1-5	Prin
3	CT 6-10	CT 6-10	Prin	RT	CT 6-10
4	SP	SP	SP	CT 11+	SP
5	CT 1-5	CT 1-5	CT 11+	Prin	CT 1-5
6	CT 11+	CT 11+	CT 6-10	SP	CT 11+

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

Figure 13. Group comparisons of ranks based on acceptability scores; summed across all stimulus terms.

definitions of the stimulus terms. They did, however, as previously noted, do considerably better on particular terms as shown by the summary of group ranking of each stimulus term in Figure 14. Figures 13 and 14 provide quick access to summary information concerning the technical accuracy of associations. Figure 13 summarizes across all stimulus terms by acceptability levels and Figure 14 summarizes across all acceptability levels by stimulus term.

Research Procedure 4

Comparisons were made among all group pairs based on language overlap re-computed using only categories receiving an acceptability score of four (4). As previously noted in the description of research procedure 1, the figures which present the data from that analysis (Figures 1-6, pages 37-42) are identical in form to those in this analysis (Figures 15-20). The computations used the same formula, the rankings were based on OCs in the same way, and the data are presented the same way. Figures 15-20 are analagous to Figures 1-6 (pages 37-42) in that Figures 1 (page 37) and 15 represent CT 1-5, Figures 2 (page 38) and 16 represent CT 6-10, Figures 3 (page 39) and 17 represent CT 11+, etc. The reader should pause here to recall and review the procedures for interpreting Figures 1-6 (pages 37-42) and apply those procedures to Figures 15-20. Recall again that the group pair ranks represent a rough index of each group pair's mutual understanding of language when compared with other group pairs.

School psychologists. A brief inspection of Figures 15-20 will make one important fact generally apparent: school psychologists

Rank	Stimulus Terms					Rank of Total Acceptability Scores
	Individualized Instruction	Immediate Reinforcement	Criterion Referenced Test	Curriculum	School Psychologist	
1	Prin	RT	SP	CT 6-10	RT	RT
2	CT 6-10	CT 1-5	Prin	CT 11+	SP	Prin
3	CT 1-5	SP	RT	RT	Prin	CT 6-10
4	RT	CT 6-10	CT 6-10	CT 1-5	CT 6-10	SP
5	SP	Prin	CT 1-5	Prin	CT 11+	CT 1-5
6	CT 11+	CT 11+	CT 11+	SP	CT 1-5	CT 11+

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

Figure 14. Group comparisons of ranks based on acceptability scores; summed across all acceptability levels.

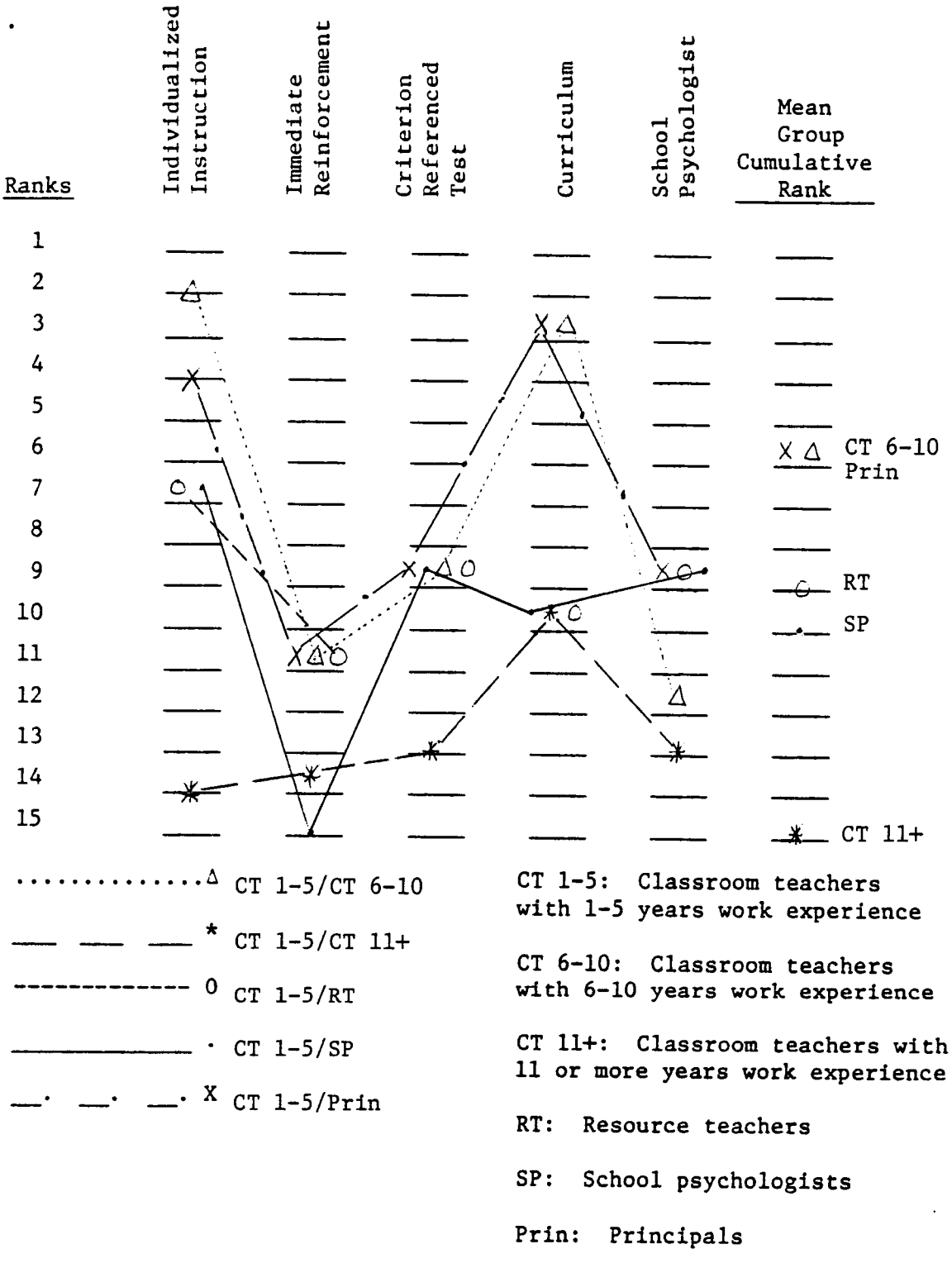


Figure 15. Group pair comparisons of overlap ranks considering only categories receiving acceptability scores of four (4) for: Classroom teachers with 1-5 years work experience (CT 1-5).

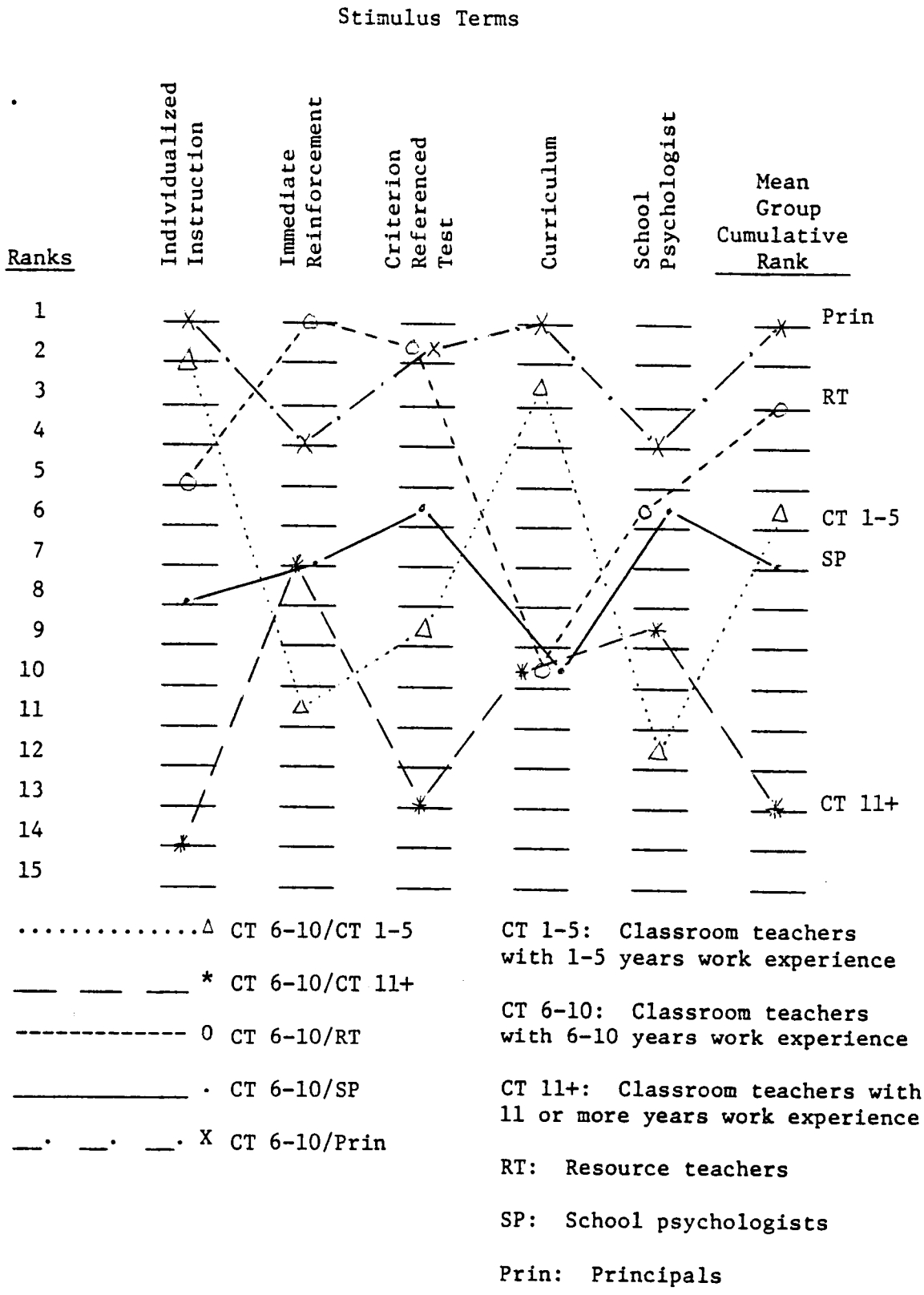


Figure 16. Group pair comparisons of overlap ranks considering only categories receiving acceptability scores of four (4) for: Classroom teachers with 6-10 years work experience (CT 6-10).

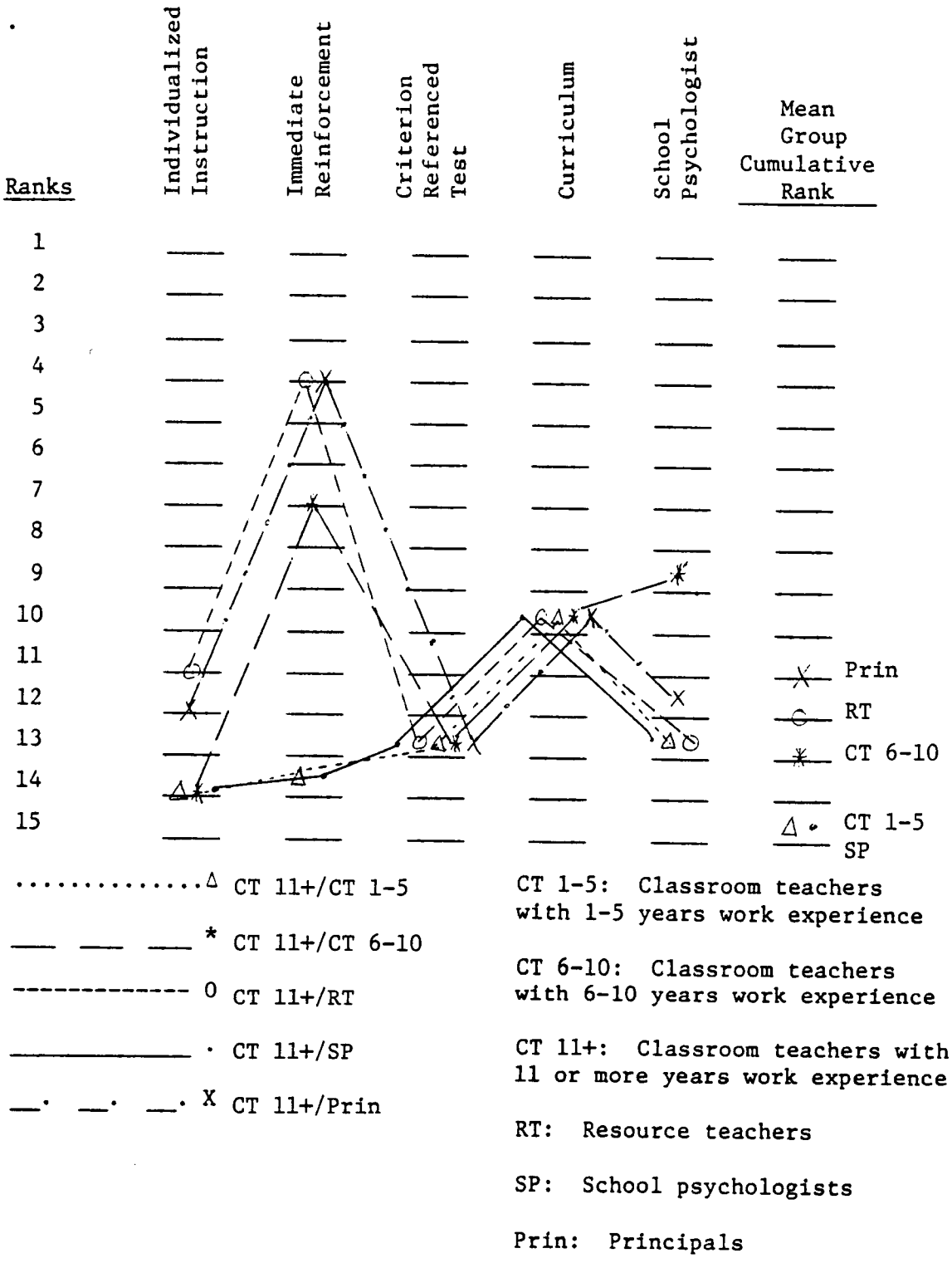


Figure 17. Group pair comparisons of overlap ranks considering only categories receiving acceptability scores of four (4) for: Classroom teachers with 11 or more years work experience (CT 11+).

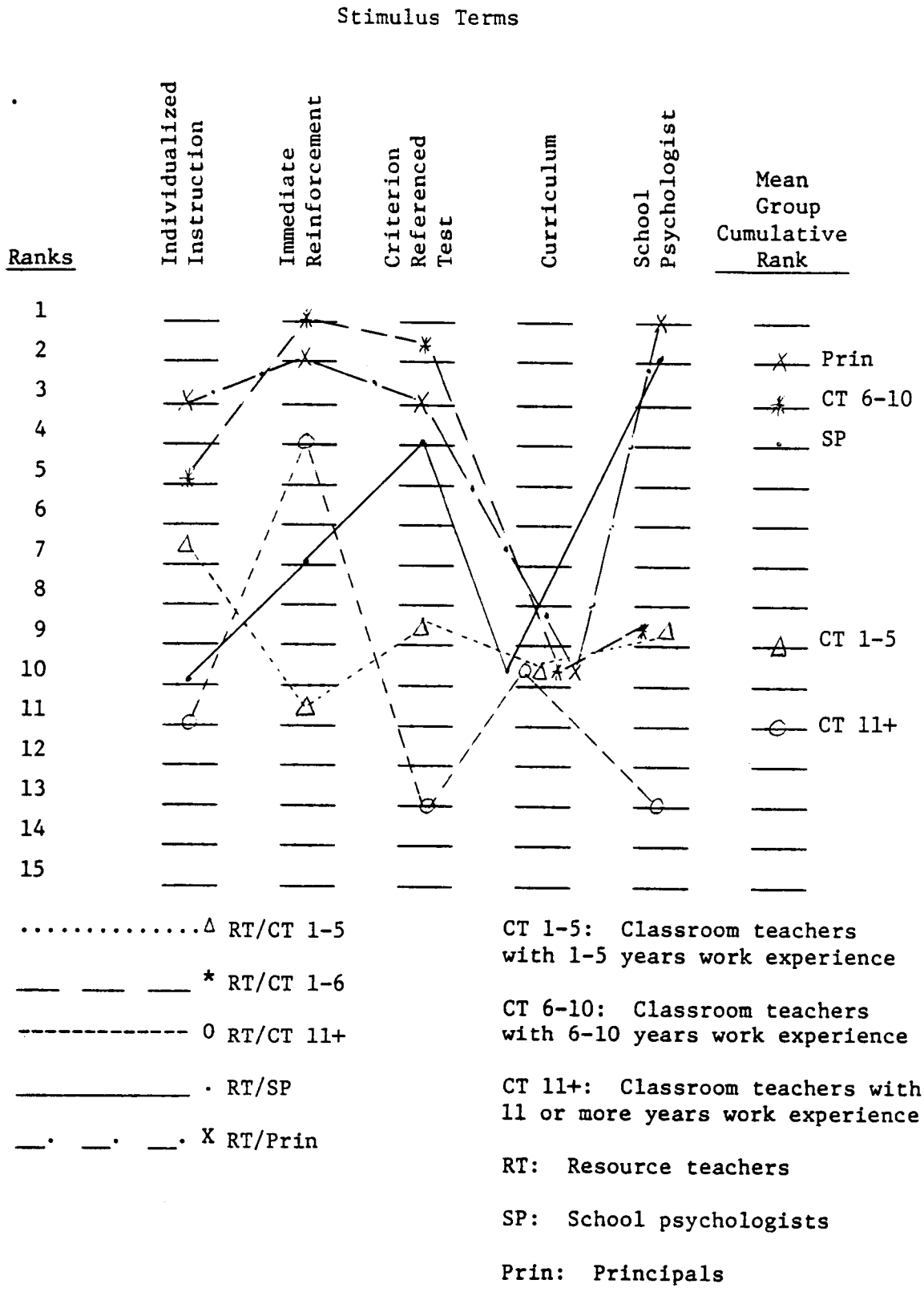


Figure 18. Group pair comparisons of overlap ranks considering only categories receiving acceptability scores of four (4) for: Resource teachers (RT).

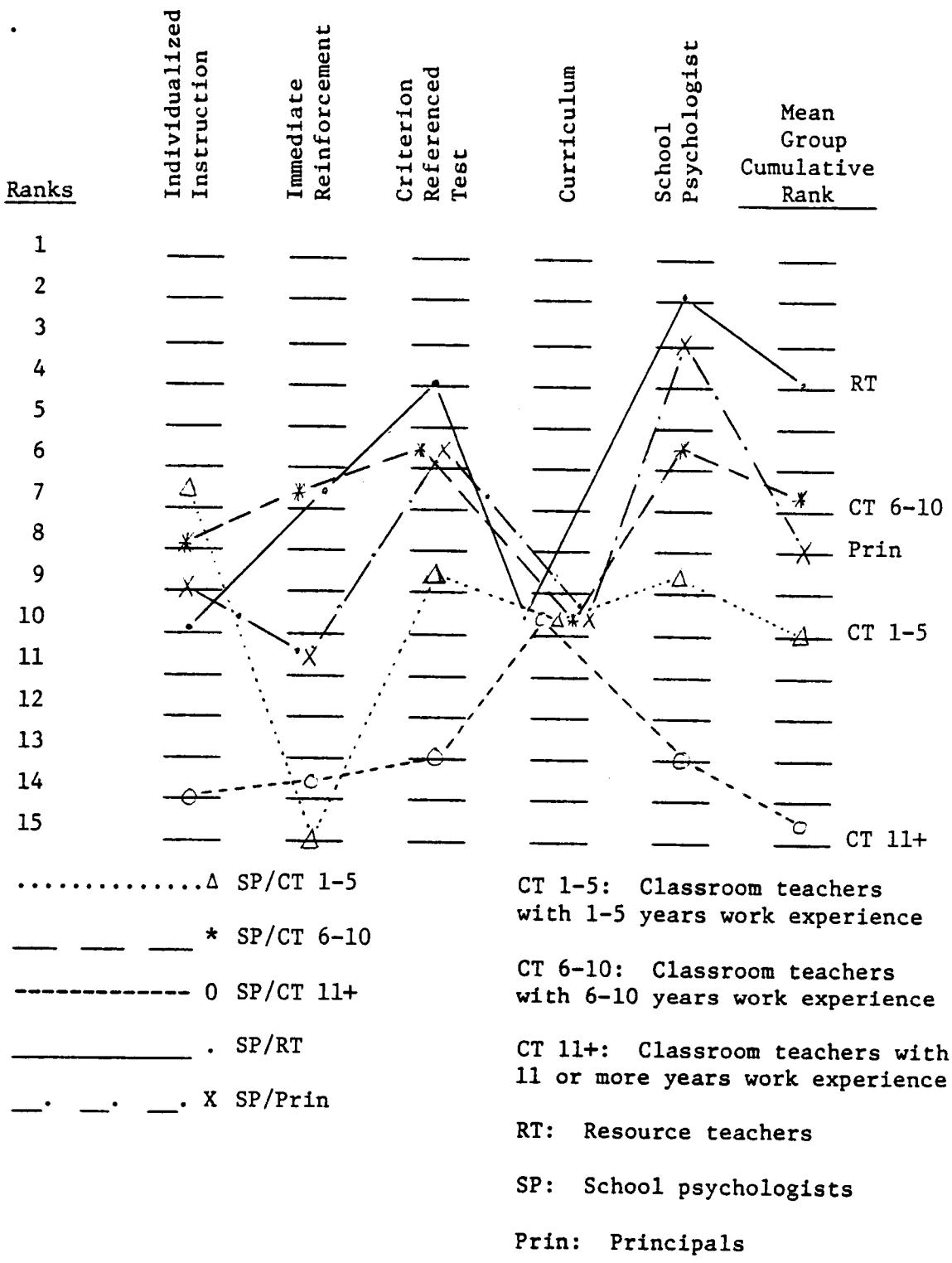


Figure 19. Group pair comparisons of overlap ranks considering only categories receiving acceptability scores of four (4) for: School psychologists (SP).

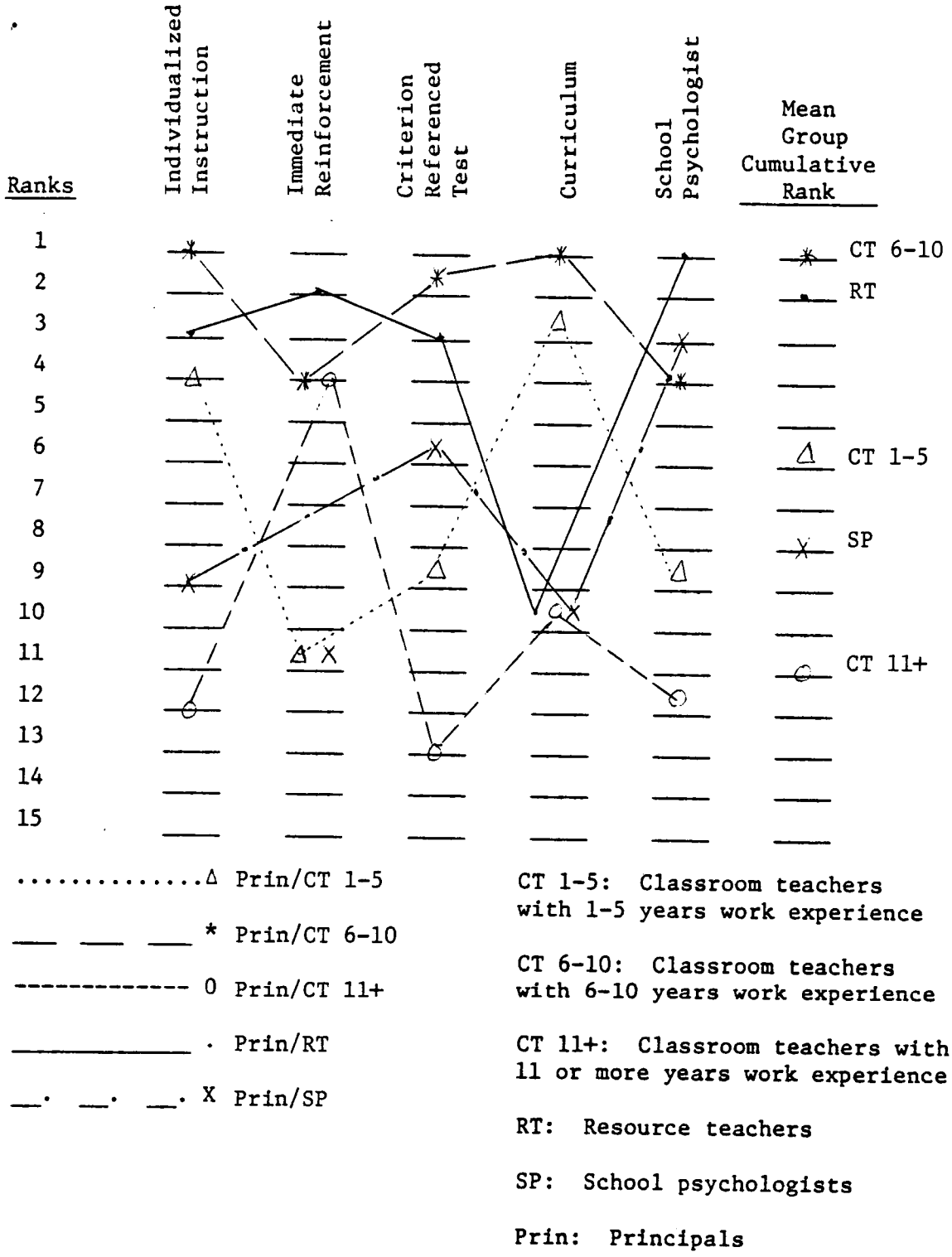


Figure 20. Group pair comparisons of overlap ranks considering only categories receiving acceptability scores of four (4) for: Principals (Prin).

improved in overall comparative overlap performance on this measure where only the most technically refined categories were used to compute overlap. Mean group cumulative ranks achieved by SP in Figures 15-20 were 4,6.5,7,9, and 14.5; the ranks achieved by SP on the original measure were 8,10,13,14, and 15. On the new measure, SP consistently achieved more comparative overlap with all practitioner groups except older teachers. School psychologists improved their composite ranking from 6 (Table 2, page 52) to 4 (Table 3). (Table 3 is identical in form to Table 2, page 52; it summarizes the information found in Figures 15-20.)

Figure 19 reveals that SP did not experience the distinctive separation (which had occurred in Figure 6, page 42) between RT and Prin as a set and the three teacher groups as a set. There was, however, a notable division between CT 11+ and all other groups, with CT 11+ far below the others. In Mean Group Cumulative Rank, the single greatest shift from the original measure to the new was the rank increase of the SP/CT 6-10 pair from 14 to 7. Other increases were SP/CT 1-5 (13 to 9), SP/RT (8 to 4), SP/Prin (10 to 8). SP/CT 11+ showed virtually no improvement (15 to 14.5).

Other groups. Older teachers, CT 11+, experienced a drastic drop on the new measure according to the large number of very low mean group cumulative ranks achieved, i.e., 11,12,13,14.5,14.5 as opposed to 4,6,11,12,15 on the original measure. This can probably be attributed to the drastically low number of technically accurate associates produced by CT 11+. This can be seen clearly by looking at the numerical values for weighted acceptability scores from Appendix E, Table E-6,

TABLE 3

Summary of Ranked Data Based on Overlap of Group Pairs Considering Only Categories Receiving an Acceptability Score of Four (4)

Cumulative Ranks	Group Pair Names	Group Pair Numbers	Total Group Ranks	
1	CT 6-10/Prin	2/6	6/1 + 6/2 + 6/3 + 6/4 + 6/5	= 1 Principals
2	RT/Prin	4/6	2/1 + 2/3 + 2/4 + 2/5 + 2/6	= 2 CT 6-10
3	CT 6-10/RT	2/4	4/1 + 4/2 + 4/3 + 4/5 + 4/6	= 3 RT
4	CT 6-10/SP	4/5	5/1 + 5/2 + 5/3 + 5/4 + 5/6	= 4 SP
5	CT 1-5/CT 6-10	1/2	1/2 + 1/3 + 1/4 + 1/5 + 1/6	= 5 CT 1-5
6	CT 1-5/Prin	1/6	3/1 + 3/2 + 3/4 + 3/5 + 3/6	= 6 CT 11+
7	CT 6-10/SP	2/5		
8	SP/Prin	5/6		
9	CT 6-10/RT	1/4		
10	CT 1-5/SP	1/5		
11	CT 11+/Prin	3/6		
12	CT 11+/RT	3/4		
13	CT 6-10/CT 11+	2/3		
14	CT 1-5/CT 11+	1/3		
15	CT 11+/SP	3/5		

Note: CT 1-5 = Classroom teachers with 1-5 years work experience - Group 1;
CT 6-10 = Classroom teachers with 6-10 years work experience - Group 2;
CT 11+ = Classroom teachers with 11 or more years work experience - Group 3;
RT = Resource teachers - Group 4;
SP = School psychologists - Group 5;
Prin = Principals - Group 6.

where CT 11+ achieved a total weighted acceptability score, 421, which was far below other groups (554, 591, 617, 672, 778). Apparently, older teachers have by far the lowest language congruence of any group when the language used is technically refined.

Resource teachers, principals, and mid-experience teachers remained fairly even from one measure to the other (Figures 16, 18, 20, pages 68, 70, and 72). They shifted positions some but maintained the top three composite ranks (Table 3); the numerical values upon which the ranks are based showed little separation (Prin = 27.5, CT 6-10 = 29.5, RT = 30). The performance of mid-experience teachers (Figure 16, page 68), as on the previous measure, continued to be different from that of older teachers and younger teachers. They showed a slight increase in rank from the original measure to the new measure while older teachers and younger teachers were declining. Quite obviously, some factor is influencing the characteristics of mid-experience teachers' work language which is apparently not operative for younger or older teachers. As noted earlier, the CT 6-10/SP pair exhibited the greatest increase of any group pair from the earlier to the new measure (increased from 14 to 6). This indicates that SP have greater hope of communicating effectively with mid-experience teachers than others on technically sophisticated material.

Research Procedure 5

A comparison of group differences was conducted based on an inspection of individual categories of meaning and each group's frequency of associate contribution to the categories. For each stimulus term, Tables 4-8 list all categories of meaning, the

TABLE 4

Listing of Categories, Acceptability Scores of Categories, and Frequency[1] of Contribution of Each Group to Categories; Stimulus Term: INDIVIDUALIZED INSTRUCTION

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups					
				CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
				90	90	90	90	90	90
	Blanks	*	93	22	10	29	10	11	11
1	Instrumentation: this category comprises associates which described procedures, techniques, or materials used in implementing individualized instruction, e.g., classroom design, precision teaching, prescriptive teaching audiovisual, tutors, learning center, contracts, pretest-posttest, etc.	4	80	17	15	7	12	16	13
2	One to one, etc.	3	31	10	8	3	5	0	5
3	Working on level, etc.	3	31	4	5	5	8	2	7
4	Meeting needs, etc.	4	22	4	6	2	3	2	5
5	Individual child, single child, personalized, etc.	4	21	2	2	5	5	3	4
6	Self-paced, self-speeded, etc.	4	15	3	4	1	3	0	4
7	Groups, small groups, etc.	**	15	2	4	4	3	0	2

TABLE 4 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
8	Subjects: spelling, reading, math, etc.	**	12	1	0	8	0	0	3
9	Programmed, programmed instruction, etc.	4	10	1	2	0	2	1	4
10	Slow students, remedial education, learning disability (L.D.), etc.	2	10	3	3	1	0	0	3
11	Help, helping, etc.	1	10	2	2	3	2	0	1
12	Recognize and teach according to ability, etc.	3	7	0	2	1	2	1	1
13	Time, etc.	**	6	0	0	2	3	0	1
14	Child oriented, etc.	3	6	0	0	0	2	2	2
15	Assessment, evaluation, diagnosis of skills, etc.	3	5	0	0	0	3	1	1
16	Humanistic, dignity, worth, etc.	3	6	0	2	0	0	1	3
17	Planning, plan, etc.	2	6	0	2	0	0	1	3
18	Where person (student) child, etc., is, etc.	2	4	1	0	0	3	0	0
19	Independent, independence, etc.	3	3	1	1	0	1	0	0
20	Lower pupil-teacher ratio, etc.	1	2	1	1	0	0	0	0

TABLE 4 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
21	Attitude-comment: This category comprises associates that evaluate, judge, or comment on individualized instruction. Presumably, an associate in this category represents an attitude or opinion about the utility, validity, or value of individualized instruction.	*	53	5	11	11	15	13	8
22	Miscellaneous	*	84	8	11	4	17	33	11
23	Agent: teacher, child, student, etc.	*	8	0	1	5	1	0	1

[1]Frequency numbers are based on the number of associates contributed to a category.

*Scoring for acceptability not relevant.

**Insufficient scorer agreement to assign acceptability score.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE 5

Listing of Categories, Acceptability Scores of Categories, and Frequency[1] of Contribution of Each Group to Categories; Stimulus Term: IMMEDIATE REINFORCEMENT

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
	Blanks	*	86	21	9	21	5	11	17
1	Time: now, immediate, quickly, right now, etc.	4	40	5	11	4	8	7	5
2	Praise, etc.	3	32	6	5	1	9	5	6
3	Reward, rewarding, etc.	4	26	3	4	5	7	1	6
4	Verbal reinforcer: verbal, examples: "very good," "great," etc.	3	25	11	1	2	2	4	4
5	Positive, positive action, etc.	3	24	1	6	2	7	4	4
6	Repetition, drill, over and over, etc.	0	20	0	3	13	2	0	2
7	Non-verbal reinforcer: free time, stars, points, pat on the back, etc.	2	17	5	0	5	3	2	2
8	Smile, etc.	3	17	9	1	1	4	1	1
9	Feedback, etc.	4	17	1	3	3	4	3	3
10	CR, UCR, S-R, operant, respondent, etc.	3	13	3	0	0	6	4	0
11	Food reinforcer: candy, M&Ms, etc.	3	10	2	1	1	5	1	0

TABLE 5 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
12	Token, etc.	3	10	0	2	0	4	3	1
13	Punishment, etc.	0	10	2	3	0	2	1	2
14	Reinforce, reinforcement, etc.	0	7	1	3	0	0	1	2
15	Increase response, strengthen response, etc.	3	6	0	1	0	0	5	0
16	Encourage, encouragement, etc.	2	5	1	1	0	2	0	1
17	Contingent, contingency, etc.	3	5	1	0	0	1	2	1
18	Individualized, level, personal, child centered, etc.	1	5	0	4	0	0	1	0
19	Behavior, behaviorism, etc.	**	4	0	0	1	1	1	1
20	Change, changing, etc.	2	4	0	0	0	1	1	2
21	Motivation, motivator, etc.	2	4	0	1	0	1	1	1
22	Acceptable, etc.	3	2	0	1	0	0	0	1
23	Miscellaneous	*	87	7	17	20	11	12	20

TABLE 5 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
24	Attitude-comment: This category comprises associates that evaluate, judge or comment on immediate reinforcement. Presumably, an associate in this category represents an attitude or opinion about the utility, validity, or value of immediate reinforcement.	*	60	8	11	6	5	15	6
25	Agent: child, teacher, principal, etc.	*	4	0	0	2	0	1	1

[1]Frequency numbers are based on the number of associates contributed to a category.

*Scoring for acceptability not relevant.

**Insufficient scorer agreement to assign acceptability score.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more year work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE 6

Listing of Categories, Acceptability Scores of Categories, and Frequency[1] of Contribution of Each Group to Categories; Stimulus Term: CRITERION REFERENCED TEST

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups					
				CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
				90	90	90	90	90	90
	Blanks	*	273	64	49	67	38	10	45
1	Individualized, child's level, child oriented, etc.	3	22	0	1	1	6	8	6
2	Standardized tests, achievement tests, stanines, percentiles, intelligence, I.Q., intelligence tests, readiness tests, etc.	0	20	1	11	4	0	0	4
3	Objectives, goals, specific behaviors, etc.	3	15	3	1	3	2	3	3
4	Data, information, etc.	4	12	1	3	0	3	1	4
5	Specific skills, specific strengths, specific, specific results, etc.	4	11	1	3	0	3	2	2
6	Person competing with self, not norm referenced, based on competency, etc.	4	10	0	1	0	3	4	1
7	Analyzing, testing, diagnosing, assessing, measuring, specific objectives, etc.	4	9	0	3	0	2	1	3

TABLE 6 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
8	Analysis, test, diagnosis, assess, measure, etc.	3	7	0	0	2	0	3	2
9	Analysis, test, of strengths and weaknesses, skills, tasks, items, etc.	3	6	1	0	1	1	2	1
10	Teacher constructed test, self-constructed, etc.	2	6	0	1	0	0	2	3
11	Test names: SPR, PRI, LAP, etc.	3	6	0	0	0	4	2	0
12	Based on subjects, specific subjects: reading, math, etc.	2	6	3	0	0	0	2	1
13	Test structure, construction: validity, reliability, etc.	**	4	0	0	0	0	4	0
14	Skills, strengths, ability, etc.	2	3	0	0	0	1	2	0
15	Pretest-posttest	**	3	1	1	0	0	1	0
16	Based on experience, experience, etc.	3	3	0	0	0	2	0	1
17	Miscellaneous	*	78	7	13	11	16	19	22

TABLE 6 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
18	Attitude-comment: This category comprises associates that evaluate, judge, or comment on criterion referenced tests. Presumably, an associate in this category represents an attitude or opinion about the utility, validity, or value of criterion referenced tests.	*	42	8	3	8	20	20	2
19	Agent: principal, teacher, proper name, etc.	*	4	0	0	0	1	3	0

[1]Frequency numbers are based on the number of associates contributed to a category.

*Scoring for acceptability not relevant.

**Insufficient scorer agreement to assign acceptability score.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE 7

Listing of Categories, Acceptability Scores of Categories, and Frequency[1] of Contribution of Each Group to Categories; Stimulus Term: CURRICULUM

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups					
				CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
				90	90	90	90	90	90
	Blanks	*	78	17	17	7	18	9	10
1	Subject(s), subject matter, courses, studies, classes, discipline(s), work, subject names: math, science, English, etc.	3	146	25	27	29	25	17	23
2	Plans, design, structure, outline, guide, guideline, etc.	3	49	7	11	14	5	7	5
3	Program, program offering, total program, everything, all inclusive, etc.	4	41	7	8	4	4	4	14
4	Materials: books, audiovisuals, texts, etc.	3	20	1	5	5	4	4	1
5	Individual, individualized, child centered, etc.	2	14	4	0	0	5	3	2
6	Goals, objectives, etc.	3	13	2	3	2	2	2	2
7	Content, content taught, material covered, etc.	3	10	3	1	0	4	1	1
8	Units, units of study, etc.	2	5	2	0	0	1	1	1

TABLE 7 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
9	Method(s), etc.	2	3	0	0	0	2	0	1
10	Vocational training, etc.	2	2	0	0	0	1	1	0
11	Miscellaneous	*	69	10	13	12	6	15	13
12	Attitude-comment: This category comprises associates that evaluate, judge, or comment on curriculum. Presumably, an associate in this category represents an attitude or opinion about the utility, validity, or value of curriculum.	*	78	11	10	12	10	19	13
13	Agent: child, teacher, parent, etc.	*	12	0	0	2	0	6	6

[1]Frequency numbers are based on the number of associates contributed to a category.

*Scoring for acceptability not relevant.

**Insufficient scorer agreement to assign acceptability score.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE 8

Listing of Categories, Acceptability Scores of Categories, and Frequency[1] of Contribution of Each Group to Categories; Stimulus Term: SCHOOL PSYCHOLOGIST

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups					
				CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
				90	90	90	90	90	90
	Blanks	*	107	32	16	17	12	3	15
1	Tester, testing, test, etc.	3	35	0	5	6	12	2	10
2	Consult, consultant, consulting, etc.	4	32	2	4	1	5	15	5
3	Helper, help, helping, helping person, etc.	1	28	6	5	6	4	2	5
4	Counselor, counseling, guidance counselor, etc.	1	21	4	3	3	7	2	2
5	Assesser, assessment, assess, examine, examiner, etc.	4	16	0	1	0	8	4	3
6	Evaluate, evaluator, evaluation, evaluate	4	15	1	0	0	4	4	6
7	Problems, etc.	**	11	3	1	4	3	0	0
8	Diagnostician, diagnosis, diagnose, etc.	3	10	1	1	1	2	1	4
9	Recommend, refer, interview, screen, conference, etc.	3	10	4	2	2	2	0	0
10	Resource, resource person, etc.	2	8	2	1	0	3	2	0

TABLE 8 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
11	Helps with teacher, parent, principal problems, etc.	2	8	1	1	1	3	1	1
12	Child oriented, help child, child advocate, etc.	2	8	0	1	2	1	2	2
13	Advisor, advice, advice giver, etc.	2	7	1	3	2	0	1	0
14	Emotional problems, etc.	4	7	0	4	2	0	0	1
15	Specialist, etc.	3	6	1	0	0	1	3	1
16	Learning problems, etc.	3	6	0	3	2	1	0	0
17	Sounding board, listener, etc.	**	5	0	1	2	0	2	0
18	Psychological report, etc.	2	5	1	0	1	3	0	0
19	Friend, etc.	1	4	0	2	1	1	0	0
20	Strategy, strategist, program developer, etc.	**	4	0	0	0	0	2	2
21	Professional, etc.	**	4	0	1	0	0	3	0
22	Psychology, trained in psychology, psycological theory, psychological technique, etc.	0	3	0	3	0	0	0	0

TABLE 8 (Continued)

Category	Category Name	Acceptability Score	Frequency all Groups N = 540	Frequency of Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90
23	Behavioral problems, etc.	**	2	0	1	1	0	0	0
24	Attitude-comment: This category comprises associates that evaluate, judge, or comment on individualized instruction. Presumably, an associate in this category represents an attitude or opinion about the utility, validity, or value of school psychologists								
24a	Postive	*	22	4	6	5	0	2	5
24b	Negative	*	23	6	4	4	3	2	4
24c	Neutral	*	41	6	6	9	7	8	5
25	Miscellaneous	*	81	8	12	14	6	26	16
26	Agent, agency: principal, child, teacher, proper name, etc.	*	21	8	5	5	1	1	1

[1]Frequency numbers are based on the number of associates contributed to a category.

*Scoring for acceptability not relevant.

**Insufficient scorer agreement to assign acceptability score.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

acceptability scores for each category, the contribution of all groups to the categories, and the frequency contribution of each practitioner group to the category. From the tables, it is possible to compare the relative contribution of groups to categories. This presents a more concrete, discernible mapping of the actual verbal concepts generated by the groups and the degree of linguistic (or conceptual) similarity between groups.

The data are presented in a format to facilitate the reader's inspection of the information. The information is largely self-evident; Hence, only the highlights will be discussed here. The first stimulus term considered, /individualized instruction/ (Table 4, page 76), listed a high frequency category (31 associates to which SP contributed no responses. The category title "one on one," etc., represented an association made often by teachers (21 of 31 responses), but not at all by SP. That SP omitted responses in this category might be attributed to teachers' tendency to reject "one on one" instruction because of time constraints and other reasons. /Individualized instruction/ of course is not restricted to the connotation of "one on one"; however, it apparently is a key association by teachers and represents a barrier to teachers attempting any form of individualized instruction when recommended by SP. To further support this hypothesis, the raw data reveal that SP produced many attitude associations which were negative, e.g., "Puts teacher off," "Teachers complain is too time consuming," etc. Apparently SP see the term /individualized instruction/ as highly aversive to teachers.

Category 6 under /immediate reinforcement/ (Table 4, page 76) is entitled "Repetition, drill, over and over, etc.," which clearly

misses the point of the term's meaning. CT 11+ contributed 13 of the 20 responses in this category which suggests that older teachers are comparatively uninformed about this term. Recall also that they contributed comparatively little overall to the most technically accurate categories on /immediate reinforcement/, ranking 6 of 6 on acceptability scores. This finding further highlights the disparity between older teachers and other groups in producing technically accurate associations to the stimulus terms.

/Criterion referenced test/ (Table 5, page 79) generated by far the fewest number of associates, 267, nearly half being blanks. This obviously demonstrated the extensive lack of information about the term. Category 2, "standardized tests, etc.," can be said to represent a clear misunderstanding of the term. It is the classroom teachers and principals who contributed all 20 responses to the category. As mentioned previously, this is significant because criterion referenced testing and the concepts underlying it were critical to the successful instruction of children classified as handicapped. Category 6 "competing with self; not norm referenced, etc.," is the converse of category 2 and represents the accurate core concept of criterion referenced testing. School psychologists and RT contributed 8 of these 10 responses; classroom teachers only 1. Other categories under /criterion referenced test/ which are interesting in the same respect are 1,11,13,14.

/Curriculum/ (Table 6, page 82) was mainly interesting for its lack of specifity. Only one category could be judged at the acceptability level of 4; the remainder were 2 or 3 with no 1 or 0.

All other stimulus terms generated a much more varied distribution of acceptability scores. Curriculum would seem to be little more than a "buzz" word in education.

/School psychologist/ (Table 8, page 87) produced many intriguing contrasts between SP and other groups. Unlike the other four terms, this one can be viewed as a conceptual description of school psychologists as viewed by the six groups. Certainly the emotional reactions of the education practitioners to school psychologists were to some extent manifest in the responses. To aid in a more fine grained inspection of the responses, a complete listing of all associates generated by all subjects can be found in Appendix F.

The most numerous category was "tester, testing, test, etc.," yielding 35 responses. Of those, school psychologists contributed only 2 (CT 1-5, unaccountably, contributed none). Clearly, however, most of the practitioner groups thought testing was a major function of SP. School psychologists, however, tended to eschew this designation, likely because of a predominant emphasis by principals and teachers on school psychologists doing testing to the exclusion of consultation. The second category, "consult, consulting, consultant, etc.," added weight to this hypothesis by reversing the proportion of contribution by SP. Of the 32 associates in this category, SP contributed 15 and the three classroom teacher groups only 7. Category 3, "helper, etc.," had 28 responses of which SP contributed 2. Category 4, "counselor, etc.," had 21 which SP contributed 2. Category 15, "specialist, etc.," had 6 of which SP contributed 3. Category 21, "professional, etc.," had 4 of which SP contributed 3.

/School psychologist/ also generated a large number of attitude/comment responses which are broken down into three sections, positive, negative, neutral. The reader is referred to Appendix F to get the full flavor of these responses.

The responses to /school psychologist/ serve to underscore the chief message of the research findings: school psychologists and the other education practitioner groups were linguistically more dissimilar than are the other groups among themselves. Although there was certainly more similarity between SP, RT, and Prin than between SP and the classroom teacher groups, the overall pattern remains.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

> All of us in our years of learning . . . need some apprenticeship in the specialized traditions, which will make us better able to understand one another, and clearer as to the extent to which we do not. This will not be easy. To me it seems necessary for the coherence of our culture, and for our future as a free civilization (J. Robert Oppenheimer, "The Mystery of Matter," in Adventures of the Mind.

This research was undertaken to describe shared linguistic meaning among education practitioners in the school workplace, particularly as an aid to understanding the role of school psychologists. The findings raised more questions than they answered. Indeed, the approach used in the research was not intended to provide definitive answers to work role related problems, but to suggest configurations of working relationships among practitioner groups which, if known, could promote productive management of problems in the school workplace. In this sense, this study was more diagnostic/evaluative than summative (Selltiz, et al., 1976). The discussion will focus on evidence from the research which substantiates or negates the a priori "working hypotheses," which overlay the more general descriptive question about linguistic similarity among education practitioners. Most of these working hypotheses are questions about the way in which the language of school psychologists compares in similarity and conceptual accuracy with the other five groups. However, the language relationships of all groups will be discussed more broadly to provide a perspective on all practitioner groups.

The first working hypothesis was fundamental: it was hypothesized that different education practitioner groups would exhibit linguistic differences based on an analysis of their word associations. This was substantiated by all the analyses, but by two in particular. The first was the overlap analysis of group pairs computed using all categories (Figures 1-6, pages 37-42). It showed consistent distinctions among the groups across all stimulus terms. In the case of SP, for example, it was clear that SP had comparatively low overlap with all practitioner groups. Further, SP were consistently less congruent with the classroom teacher groups, especially CT 1-5 and CT 11+, than with RT and Prin, and SP were consistently less congruent with all groups on some terms, i.e., /curriculum/ and /individualized instruction/, than others. Looking at other groups, RT and Prin (and to a lesser extent, CT 6-10), showed a quite different pattern from SP, consistently achieving high comparative overlap with nearly all groups. Classroom teachers 11+ were distinguished by being the only group which achieved its highest overlap with other classroom teachers and not with RT and Prin.

The second analysis which served to highlight basic linguistic differences among groups, looked at relative group performances in providing technically accurate definitions for the stimulus terms. Classroom teachers with 11 or more years experience were markedly different from all other groups because of consistently low scores (Figure 14, page 66). Only on /curriculum/ did CT 11+ achieve an acceptability score rank above 5 (actual ranks for CT 11+ for all stimulus terms were 6,6,6,5,2). School psychologists demonstrated marked fluctuations in acceptability score rankings depending on the

stimulus term, e.g., sixth on /curriculum/, fifth on /individualized instruction/, first on /criterion referenced test/, and second on /school psychologist/. Far more than any other group, SP showed variation as a function of the stimulus terms, ranking higher on terms specifically germane to school psychology and lower on the others. Resource teachers achieved consistently higher ranks on acceptability scores than any other group. Principals were next to RT on cumulative ranking but showed more fluctuation from stimulus term to stimulus terms that did RT; actual ranks achieved by RT across all stimulus terms were 1,1,3,3,4; ranks for Prin were 1,2,3,5,5. The two remaining classroom teacher groups (CT 6-10, CT 1-5) had quite different profiles, with CT 6-10 exhibiting ranks of 1,2,4,4,4, and CT 1-5 ranks of 2,3,4,5,5.

These two analyses demonstrate that the different groups examined did exhibit differences in language use. Some possible factors influencing the observed linguistic differences are differences in group training experiences, differences in job motivation, differences in work experience, differences in time out of school, and differences in work role self-concept.

It was hypothesized that SP would exhibit comparatively greater language similarity with RT than other groups, possibly because of similarities in training, work mission, and collaborative relationships. This working hypothesis was substantiated by the findings. Tables 2 and 3 (pages 52 and 74) summarize the group overlap rankings based on the analysis of all categories and based on the most technically correct categories respectively. In both analyses, SP achieved their highest overlap ranking with RT: 9 and 4 respectively. That

the SP/RT pair did not achieve the highest rankings overall on certain terms, i.e., /criterion referenced test/, /immediate reinforcement/ is puzzling. The role and mission of the two groups would seem to predict high technical language similarity on these terms. However, on each of the two terms, it was the RT/Prin pair which achieved the highest overlap. Apparently on technical terms germane to school psychology, SP were less effective at producing verbal concepts congruent with RT than were Prin, even though SP produced more technically accurate associates on both terms than did Prin (Figure 14, page 66).

Based on an assumption that SP received a relatively more technically oriented training experience than other groups, it was hypothesized that SP would have a relatively higher linguistic similarity within members of their own group than would other groups on the same measure. Not only was this not substantiated by the data, SP were found to have the lowest ranking of any group on this measure (Figure 7, page 43). This finding was of particular interest. It certainly contradicted the assumption that SP represent a technically specialized group in the school workplace who speak a technically sophisticated language that is well understood within the group but confusing and threatening to other "generalists" in the schools. One explanation for this is offered by Cherry (1966) who implies that school psychologists may not yet have achieved a technical vocabulary. Generally, new sciences like psychology, sociology, and economics "have not as yet built up a consistent vocabulary of universally accepted words having precise referents and a special syntax" (p. 76). Another speculative expalantion is that SP, finding themselves in a conflict situation deriving from organizational

pressures related to the Weldon Bill (see Chapter I), were somewhat disorganized and confused. This may have charged their responses with emotional overlay, thus reducing overlap which might otherwise have occurred with more objective responses (author's experience). Whatever the explanation, the findings indicate that SP should carefully re-examine their fundamental relationships to others in the schools and focus the re-examination on their vocational skills, technical training, and language use in the school setting.

It was hypothesized that SP would exhibit greater technical accuracy than other groups in defining certain terms germane to their profession. The three terms in question were /immediate reinforcement/, /criterion referenced test/, and /school psychology/. The working hypothesis was fully substantiated in the case of /criterion referenced test/ and to a lesser degree in the cases of /immediate reinforcement/ and /school psychologist/. Figure 14 (page 66) reveals that SP ranked first in accurate associations to /criterion referenced test/, ranked second to RT on /school psychologist/, and ranked third to RT and CT 1-5 on /immediate reinforcement/. These findings demonstrated that SP held no exclusive claim on technical knowledge of terms clearly relevant to SP work but shared technical knowledge on a fairly equal footing with other groups, RT in particular. They were clearly superior, however, to the classroom teacher groups, which occupied 8 of the 9 possible ranks occurring in the lower half of the rankings on /school psychologist/, /criterion referenced test/, and /immediate reinforcement/ (Figure 14, page 66). (Conversely, classroom teacher groups occupied 4 of 6 possible ranks in the upper half of the rankings on /individualized instruction/ and /curriculum/.)

It was hypothesized that SP would have higher overlap with other groups, particularly RT, when overlap was computed using only the most technically accurate categories than with overlap computed using all categories. This was substantiated and seen most clearly in comparing Tables 2 and 3 (pages 52 and 74), which summarize the group overlap measures based on the two different selections of categories. In the total group ranks column, SP moved from a rank of 6 when all categories were considered in overlap computation (Table 2, page 52) to a rank of 4 when only categories receiving an acceptability score of 4 were considered (Table 3, page 74). While this was a modest gain, it does demonstrate the relatively greater technical orientation of SP in comparison with two of the classroom teacher groups (CT 1-5, CT 11+). The remaining three groups, CT 6-10, Prin, RT, were consistent from one measure to the other. School psychologists achieved higher ranks with RT, Prin, CT 6-10, and CT 1-5 on the most technically accurate categories; they remained very low with CT 11+. School psychologists were the only group to show a significant rise in ranks on the new measure (gain of 2 rank positions).

It was hypothesized that the listing of associates and categories produced by all practitioner groups would reveal some striking differences among groups based on the "conceptual mapping" of the data. This was substantiated, and the listing of categories found in Tables 4-8 (pages 76-89) reveal specific categories which dramatically illustrate this finding. A description of many of the categories can be found in Chapter III and need not be reiterated here; however, more should be said about the stimulus term /school psychologist/.

The responses to this term constitute a conceptual picture of school psychologists by school psychologists themselves and by the other education practitioners. Several startling differences emerged. School psychologists conceived of themselves as a "tester" far less than the other groups (SP produced 2 of 35 associates in this category [Table 8, page 87]). Conversely, school psychologists preferred the concept "consultant" to a much greater extent than other groups (SP produced 15 of 32 associates). On several categories, school psychologists were in reasonable harmony with other groups. They produced a fairly even proportion of associates on categories which identified them as "helper," "counselor," "assesser," "evaluator," "diagnostician," "resource," and "advisor." They viewed themselves as "specialists" more than other groups (SP produced 3 of 6 associates) and as a "professional" more than other groups (SP produced 3 of 4 associates).

The information from this analysis probably points to an underlying difference between school psychologist and other groups, which served to influence the group differences in language use. These data concerning SP support the hypothesis that the group self concept of SP differs significantly from that of other groups, particularly classroom teachers.

Future applications. The research findings raised several interesting questions, many of which could be explored further with the research method employed in this study. Others are more general questions which concern the role of the school psychologists in the school workplace.

First, it should be noted that although the study focused on education practitioners, the method could be applied with equal ease to other task groups in work settings or to task groups in any setting. For example, the group overlap measures generated coefficients of overlap which could be viewed as "coefficients of communication," which would provide a numerical measure for work concept similarity among task groups. Using the communication coefficient diagnostically, groups could be sorted according to various criteria (e.g., training, background, functional task role) to see if advantages might be gained in facilitating organizational communication by different alignments.

An interesting comparison could be made by measuring the shared linguistic meaning of well established teams of specialists, e.g., surgical teams, fire teams, industrial production teams, in order to see how their technical language use patterns compare to that of education practitioners. This might provide a standard of achievement toward which education practitioners could aspire, thus furnishing the interested education administrator with an objective management tool for producing team effectiveness.

The data produced could form a basis for dialogue to manage or resolve organizational conflict. By examining differences qua differences--without assessing blame--the data steer relatively clear of issues and attitudes which are emotionally charged. The data are empirical and produced in a nearly context free situation. As such, the conclusions and suggestions drawn from the data, to a certain extent, speak for themselves and allow persons to develop their own interpretations. The author's experience with the data have affirmed

a widespread recognition by persons that mis-communication is a persistent problem in organizations. People relate to this failing more as a part of the human condition, universally shared, than an attitudinal issue where the other side is at fault. Hence, the data offer an objective basis for organizational dialogue.

Much more research is needed to establish an adequate basis for interpreting the results of this study. The research dealt with the language of education practitioners in a limited setting and with a limited sample of vocabulary terms. Since this was the first study of this kind, the results were necessarily interpreted in the absence of an expanded context, which could be provided by further studies. Studies which examine the shared language characteristics of task group members in a variety of settings would establish a basis for comparing education practitioners with other task groups and other task groups among themselves. At this stage of research it is impossible to say in any absolute sense whether the sample of education practitioners examined here exhibited patterns of language similarity which are representative of education practitioners generally or of task groups generally.

Lessons for school psychologists. School psychologists in this study were poor communicators in the school workplace, at least insofar as the findings of this study apply. The results of the study indicate that the school psychologists should have devoted more attention to effective communication with other education practitioners. This conclusion is based on the reasonable assumption that factors causing conflict between SP and other practitioners were worsened and

exacerbated by this fundamental problem. The lack of linguistic similarity between SP and other practitioners would not have been as important without the organizational imperatives--especially collaborative decision-making, planning, and program implementation--created by the Weldon Bill (and nowadays by PL 94-142).

One approach to eliminating language dissimilarities between SP and other practitioners is to address the problem at the level of the training process. If student school psychologists were trained using the information generated by the study to encourage development and adaption of language better understood by teachers, perhaps the wide disparity in language similarity between school psychologists and other practitioners could be eliminated. This could be done in conjunction with students from education training programs where repeated administrations of the SCS over, say a year, would measure progress toward mutual understanding by all students of educational and psychological terms. This procedure would place student school psychologists into a dialogue with other student education practitioners where they might discuss a multitude of organizational issues which will surface in their later careers.

A second approach to eliminating language dissimilarities between SP and other practitioners is on-the-job training. During inservice programs, certain key terms could become a focus for discussion, and the SCS could be administered both as a measure of learning and as a measure of language similarity among groups of practitioners. Particular groups known to have potential problems in communication and cooperation could be singled out for special attention. For example, the results of the study clearly demonstrated

that of all group pairs, SP and older teachers (CT 11+) experienced the greatest dissimilarity in language use. Also, the older teachers were the least sophisticated in producing good technical definitions for terms. Hence, much trouble could be avoided by giving special "academic" help to older teachers and special attention to the communication process between SP and older teachers.

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APPENDICES

APPENDIX A

SCS MATERIALS

Short Concept Survey for Educators
and Related Professionals
(Cover Sheet)

1. The short concept survey is being developed to find a better way of measuring how people use and understand concepts. It tries to get at the heart of your concepts quickly and easily.

2. Look at each term and write the first word, item, term, or phrase that it makes you think of, relevant to your work, in the space provided. Each word is printed three times. Write a different response for each. Do not repeat.

3. If you can't think of anything relevant right away, leave the space blank and go on to the next. You are not expected to fill in every blank, but please do the best you can.

NAME_____

DATE_____

POSITION_____

SEX_____

System:
Alcoa ☐
Blount County ☐
Knox County ☐
Knoxville City ☐
L.T.V.E.C. ☐
Maryville ☐
School name_____

Years experience (total) 0-5 ☐ 6-10 ☐ 11 and over ☐

Educational background:
Approx. qtr. hrs. past Bachelors (if any)_____.
Major area of post-Bachelors work_____.
Year last post-Bachelors work completed_____.

Comments about Short Concept Survey:

Form 1

instructional technology	learning profile	computer assisted instruction	base line data
instructional technology	systems analysis	computer assisted instruction	base line data
instructional technology	systems analysis	immediate reinforcement	base line data
curriculum	systems analysis	immediate reinforcement	psychology of learning
curriculum	learning disability	immediate reinforcement	psychology of learning
curriculum	learning disability	educational diagnostic	psychology of learning
behavior modification	learning disability	educational diagnostic	programmed instruction
behavior modification	consultant	educational diagnostic	programmed instruction
behavior modification	consultant	perceptual-motor	programmed instruction
Rejevski cylinders	consultant	perceptual-motor	task analysis
Rejevski cylinders	psychological evaluation	perceptual-motor	task analysis
Rejevski cylinders	psychological evaluation	auditory-sequential memory	task analysis
educational objective	psychological evaluation	auditory-sequential memory	assessment
educational objective	accountability	auditory-sequential memory	assessment
educational objective	accountability	individualized instruction	assessment
criterion referenced test	accountability	individualized instruction	school psychologist
criterion referenced test	token	individualized instruction	school psychologist
criterion referenced test	token	elicit	school psychologist
learning profile	token	elicit	
learning profile	computer assisted instruction	elicit	

Form 2

instructional technology	learning disability	educational objective	token
instructional technology	individualized instruction	educational objective	token
instructional technology	individualized instruction	psychological evaluation	token
curriculum	individualized instruction	psychological evaluation	psychology of learning
curriculum	accountability	psychological evaluation	psychology of learning
curriculum	accountability	computer assisted instruction	psychology of learning
behavior modification	accountability	computer assisted instruction	programmed instruction
behavior modification	learning profile	computer assisted instruction	programmed instruction
behavior modification	learning profile	perceptual-motor	programmed instruction
Rejeveski cylinders	learning profile	perceptual-motor	systems analysis
Rejeveski cylinders	auditory-sequential memory	perceptual-motor	systems analysis
Rejevski cylinders	auditory-sequential memory	assessment	systems analysis
criterion referenced test	auditory-sequential memory	assessment	school psychologist
criterion referenced test	task analysis	assessment	school psychologist
criterion referenced test	task analysis	educational diagnostic	school psychologist
consultant	task analysis	educational diagnostic	immediate reinforcement
consultant	elicit	educational diagnostic	immediate reinforcement
consultant	elicit	base line data	immediate reinforcement
learning disability	elicit	base line data	
learning disability	educational objective	base line data	

Form 3

instructional technology	task analysis	elicit	criterion referenced test
instructional technology	auditory-sequential memory	elicit	criterion referenced test
instructional technology	auditory-sequential memory	assessment	criterion referenced test
curriculum	auditory-sequential memory	assessment	token
curriculum	immediate reinforcement	assessment	token
curriculum	immediate reinforcement	psychology of learning	token
behavior modification	immediate reinforcement	psychology of learning	educational objective
behavior modification	perceptual-motor	psychology of learning	educational objective
behavior modification	perceptual-motor	programmed instruction	educational objective
Rejeveski cylinders	perceptual-motor	programmed instruction	accountability
Rejeveski cylinders	educational diasnostic	programmed instruction	accountability
Rejeveski cylinders	educational diagnostic	school psychologist	accountability
learning disability	educational diagnostic	school psychologist	consultant
learning disability	psychological evaluation	school psychologist	consultant
learning disability	psychological evaluation	computer assisted instruction	consultant
base line data	psychological evaluation	computer assisted instruction	systems analysis
base line data	individualized instruction	computer assisted instruction	systems analysis
base line data	individualized instruction	learning profile	systems analysis
task analysis	individualized instruction	learning profile	
task analysis	elicit	learning profile	

APPENDIX B

RATER INSTRUCTIONS FOR JUDGING CATEGORIES

Instructions for Establishing Content Categories

I. Categories are based on manifest content unless otherwise indicated, i.e., the underlined words or a very close cognate must appear in the associate to qualify it for inclusion in the category. Occasionally an associate will be worded without using the primary identifying word or a cognate but still qualify for membership. These cases are rare.

II. Categories are listed in descending order of priority for judging membership. If a response is ambiguous and could fit equally well in two or more categories, place it in the lower numbered category.

III. When assigning the associates to categories, begin by viewing all the associates for inclusion in the first category. Follow this procedure for at least the first five categories to ensure familiarity with the entire array. This procedure provides a gestalt which makes the categories more intelligible and firm.

APPENDIX C

RATER INSTRUCTIONS FOR ACCEPTABILITY SCORING

INSTRUCTIONS FOR ACCEPTABILITY SCORING

You have three sets of materials in your possession.

1. Five listings of categories with a space for writing an acceptability score to the right of each category descriptor.

2. Five listings of the associations given to the stimulus terms. The categories were made up of items from these lists. Each of these lists consist of several pages each; the category numbers on the associate lists correspond to the category numbers on the category lists.

3. A sheet of scoring criteria for judging acceptability scores.

Your task is to judge the acceptability of the categories. The category descriptors are not full definitions of the stimulus term in the usual sense. Rather, they represent a concept which may or may not be an important part of the technical definition of the stimulus term. You must decide according to the 4,3,2,1,0 scoring system how acceptable each category is, keeping in mind each category can be only a partial definition of the term. Always respond as a professional from your field, and remember to focus on the most technically correct definition of the stimulus term when deciding acceptability. Guard against interpreting what the respondents write even though you may be "certain" that in context the categories mean something different.

When attempting to determine exactly what the category descriptors mean, you may look as often as you wish at the associate lists for clarification. Try to maintain a consistent frame of reference when scoring the categories. Some words will be easier to score than others; do not be dismayed if some terms are especially difficult. Just do your best. You may want to score all the terms and then wait a while and look over your scores again to see if you are satisfied.

Note: If a category descriptor is identical or nearly identical to the stimulus term, it represents a circular definition and gets an automatic zero.

LISTING OF CATEGORIES

Stimulus Term: CRITERION REFERENCED TEST

Category No.	Category Descriptor	Acceptability Score
1	Individualized, child's level, child oriented, etc.	_____
2	Standardized tests, achievement tests, stanines, percentiles, intelligence, I.Q., intelligence tests, readiness tests, etc.	_____
3	Objectives, goals, specific behaviors, etc.	_____
4	Data, information, etc.	_____
5	Specific skills, specific strengths, specific, specific results, etc.	_____
6	Person competing with self, not norm referenced, based on competency, etc.	_____
7	Analyzing, testing, diagnosing, assessing, measuring: specific objectives	_____
8	Analysis, test, diagnosis, assess, measure, etc.	_____
9	Analysis, test: strengths and weaknesses, skills, tasks, items, etc.	_____
10	Teacher constructed test, self-constructed, etc.	_____
11	Test names: SRA, PRI, LAP, etc.	_____
12	Based on subjects, specific subjects: reading, math, etc.	_____
13	Test structure, construction: validity, reliability, etc.	_____
14	Skills, strengths, ability, etc.	_____
15	Pretest-posttest	_____
16	Based on experience, experience, etc.	_____

SCORING CRITERIA FOR ACCEPTABILITY SCORES

4 Clearly acceptable. A refined, sophisticated understanding of the term.

3 Acceptable. A reasonably well defined and basically correct understanding of the term

2 Marginal, but not clearly wrong. Definitely leaning in the right direction.

1 Ambiguous, but might be OK. Muddy, fuzzy, but not absolutely, positively wrong.

0 Unacceptable; downright wrong. A clear misunderstanding of the term; confused with something else or totally irrelevant.

Examples

Stimulus Term: Programmed Instruction

Category Descriptor	Acceptability Score
Feedback, immediate feedback	4
Paced, sequential, stepwise	3
Skinner, Skinnerian	2
Curriculum, subjects	1
(No totally wrong categories)	-

Stimulus Term: Behavior Modification

Category Descriptor	Acceptability Score
Reinforcing acceptable behavior	4
Behavior change	3
Good self conception; improve self concept	2
Interventions	1
Self discipline	0

APPENDIX D

OVERLAP COEFFICIENTS UPON WHICH PROCEDURE 1 RANKINGS WERE BASED

TABLE D-1

Category Overlap Coefficients Between Group Pairs Ranked from Greatest to Least[1]

	Practitioner Group Pairs														
	CT 1-5 CT 6-10	CT 1-5 CT 11+	CT 1-5 RT	CT 1-5 SP	CT 1-5 Prin	CT 6-10 CT 11+	CP 6-10 RT	CT 6-10 SP	CT 6-10 Prin	CT 11+ RT	CT 11+ SP	CT 11+ Prin	RT SP	RT Prin	SP Prin
Individualized Instruction*	.59	.38	.47	.34	.52	.39	.53	.31	.55	.44	.21	.40	.31	.53	.33
Rank	1	10	6	11	5	9	4	13.5	2.5	7	15	8	13.5	2.5	12
Immediate Reinforcement*	.29	.25	.43	.42	.35	.25	.45	.35	.39	.33	.26	.33	.45	.48	.41
Rank	12	14.5	4	9	7.5	14.5	2.5	7.5	6	10.5	13	10.5	2.5	1	5
Criterion Referenced Test*	.10	.07	.14	.18	.21	.19	.24	.25	.34	.12	.16	.27	.31	.36	.36
Rank	15	8	13	10	7	9	6	12	3	14	11	5	4	1.5	1.5
Curriculum*	.56	.50	.63	.46	.57	.64	.57	.46	.53	.53	.46	.48	.47	.52	.42
Rank	5	9	2	13	3.5	1	3.5	13	6.5	6.5	13	10	11	8	15
School Psychologist*	.33	.35	.20	.23	.20	.38	.37	.23	.34	.22	.20	.36	.30	.35	.30
Rank	7	4.5	14	10.5	14	1	2	10.5	6	12	14	3	8.5	4.5	8.5
OC Total**	1.86	1.68	1.87	1.55	1.85	1.85	2.16	1.60	2.15	1.64	1.29	1.84	1.84	2.26	1.82
Rank of Cumulative Ranks	9	11	5	13	3	4	2	14	3	12	15	6	8	1	10

[1] One is greatest; fifteen is least.

* Maximum overlap possible for an individual stimulus term is 1.0.

** Maximum overlap possible for five stimulus terms is 5.0.

TABLE D-2

Overlap Coefficients for Individual Group Distributions, Ranked from Greatest to Least[1]

	Practitioner Groups					
	CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
Immediate Reinforcement*	.36	.26	.22	.59	.27	.24
Rank	2	4	6	1	3	5
Individualized Instruction*	.12	.13	.18	.20	.08	.24
Rank	5	4	3	2	6	1
Criterion Referenced Test*	.00	.17	.17	.08	.08	.27
Rank	6	2.5	2.5	4.5	4.5	1
Curriculum*	.32	.27	.51	.38	.24	.38
Rank	4	5	1	2.5	6	2.5
School Psychologist*	.29	.28	.27	.32	.32	.39
Rank	4	5	6	2	3	1
Total Overlap**	1.09	1.11	1.35	1.57	.99	1.51
Rank of Cumulative Rank	5	4	3	2	6	1

[1] One is greatest; six is least.

* Maximum overlap possible: 1.0.

** Maximum overlap possible: 5.0.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

APPENDIX E

COMPOSITE DATA UPON WHICH PROCEDURE 3 RANKINGS WERE BASED

TABLE E-1

Acceptability Scores Grouped According to Level of Acceptability and Ranked;[1]
Stimulus Term: INDIVIDUALIZED INSTRUCTION

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
4	N*	68	29	15	25	22	30
clearly acceptable, etc.	Acceptability score**	108	116	60	100	88	120
	Rank	3	2	6	4	5	1
3	N*	15	18	0	21	7	19
acceptable, etc.	Acceptability score**	45	54	27	63	21	57
	Rank	4	3	5	1	6	2
2	N*	6	5	1	5	0	4
marginal, etc.	Acceptability score**	12	10	2	10	0	8
	Rank	1	2.5	5	2.5	6	4
1	N*	3	3	3	2	0	1
ambiguous, etc.	Acceptability score**	3	3	3	2	0	1
	Rank	2	2	2	4	6	5

TABLE E-1 (Continued)

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
0	N*						
unacceptable, etc.	Acceptability score**	0	0	0	0	0	0
Total acceptability score		168	183	92	185	109	185
Rank of total		4	2	6	3	5	1

[1]Rank of 1 is greatest; rank of 6 is least.

*N = number of associates in all categories receiving the same acceptability score.

**Acceptability score is a weighted score; NX acceptability level. Maximum possible score: 90 X 4 = 360.

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE E-2

Acceptability Scores Grouped According to Level of Acceptability and Ranked;[1]
Stimulus Term: IMMEDIATE REINFORCEMENT

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
4	N*	9	18	12	19	11	14
clearly acceptable, etc.	Acceptability score**	36	72	48	76	44	56
	Rank	6	2	4	1	5	3
3	N*	33	18	7	38	29	18
acceptable, etc.	Acceptability score**	99	54	21	114	87	54
	Rank	2	4.5	6	1	3	4.5
2	N*	6	1	5	5	2	3
marginal, etc.	Acceptability score**	12	2	10	10	4	6
	Rank	1	6	2.5	2.5	5	4
1	N*	0	4	0	0	1	0
ambiguous, etc.	Acceptability score**	0	4	0	0	1	0
	Rank	4.5	1	4.5	4.5	2	4.5

TABLE E-2 (Continued)

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
0 unacceptable, etc.	N*	4	9	13	4	4	6
	Acceptability score**						
Total acceptability score		147	132	79	200	136	116
Rank of total		2	4	6	1	3	5

[1]Rank of 1 is greatest; rank of 6 is least.

*N = number of associates in all categories receiving the same acceptability score.

**Acceptability score is a weighted score; NX acceptability level. Maximum possible score: 90 X 4 = 360.

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE E-3

Acceptability Scores Grouped According to Level of Acceptability and Ranked;[1]
Stimulus Term: CRITERION REFERENCED TEST

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
4	N*	2	7	0	9	8	7
clearly acceptable, etc.	Acceptability score**	8	28	0	36	32	28
	Rank	5	3.5	6	1	2	3.5
3	N*	4	5	5	13	17	15
acceptable, etc.	Acceptability score**	12	15	15	39	51	45
	Rank	6	4.5	4.5	3	1	2
2	N*	3	1	0	3	6	5
marginal, etc.	Acceptability score**	6	2	0	6	12	10
	Rank	3.5	5	6	3.5	1	2
1	N*	0	0	0	0	0	0
ambiguous, etc.	Acceptability score**	0	0	0	0	0	0
	Rank						

TABLE E-3 (Continued)

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
0 unacceptable, etc.	N*	1	11	4	0	0	4
	Acceptability score**						
Total acceptability score		26	45	15	81	95	83
Rank of total		5	4	6	3	1	2

[1]Rank of 1 is greatest; rank of 6 is least.

*N = number of associates in all categories receiving the same acceptability score.

**Acceptability score is a weighted score; NX acceptability level. Maximum possible score: 90 X 4 = 360.

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE E-4

Acceptability Scores Grouped According to Level of Acceptability and Ranked;[1]
Stimulus Term: CURRICULUM

Acceptability Level			Practitioner Groups					
			CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
4		N*	7	8	4	4	4	14
clearly acceptable, etc.	Acceptability	score**	28	32	16	16	16	56
		Rank	3	2	5	5	5	1
3		N*	38	37	50	40	31	32
acceptable, etc.	Acceptability	score**	114	141	150	120	93	96
		Rank	3	4	1	2	6	5
2		N*	6	0	0	9	5	4
marginal, etc.	Acceptability	score**	12	0	0	18	10	8
		Rank	2	5.5	5.5	1	3	4
1		N*	0	0	0	0	0	0
ambiguous, etc.	Acceptability	score**	0	0	0	0	0	0
		Rank						

TABLE E-4 (Continued)

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
0 unacceptable, etc.	N*	0	0	0	0	0	0
	Acceptability score**						
Total acceptability score		154	173	166	154	119	160
Rank of total		4.5	1	2	4.5	6	3

[1]Rank of 1 is greatest; rank of 6 is least.

*N = number of associates in all categories receiving the same acceptability score.

**Acceptability score is a weighted score; NX acceptability level. Maximum possible score: 90 X 4 = 360.

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE E-5

Acceptability Scores Grouped According to Level of Acceptability and Ranked;[1]
Stimulus Term: SCHOOL PSYCHOLOGIST

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
4	N*	3	12	4	18	28	17
clearly acceptable, etc.	Acceptability score**	12	48	16	72	112	68
	Rank	6	4	5	2	1	3
3	N*	6	11	11	18	6	15
acceptable, etc.	Acceptability score**	18	33	33	54	18	45
	Rank	5.5	3.5	3.5	1	5.5	2
2	N*	5	7	7	10	6	3
marginal, etc.	Acceptability score**	10	14	14	20	12	6
	Rank	5	2.5	2.5	1	4	6
1	N*	10	10	10	12	4	7
ambiguous, etc.	Acceptability score**	10	10	10	12	4	7
	Rank	3	3	3	1	6	5

TABLE E-5 (Continued)

Acceptability Level		Practitioner Groups					
		CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
0 unacceptable, etc.	N*	0	3	0	0	0	0
	Acceptability score**						
Total acceptability score		50	105	73	158	146	126
Rank of total		6	4	5	1	2	3

[1]Rank of 1 is greatest; rank of 6 is least.

*N = number of associates in all categories receiving the same acceptability score.

**Acceptability score is a weighted score; NX acceptability level. Maximum possible score: 90 X 4 = 360.

CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

TABLE E-6

Sum of Acceptability Scores, Summed by Group Across All Acceptability Levels (4,3,2,1,0) for Each Stimulus Term

	CT 1-5	CT 6-10	CT 11+	RT	SP	Prin
Individualized instruction	177	181	92	177	109	188
Rank	3	2	6	4	5	1
Immediate reinforcement	149	126	81	205	142	124
Rank	2	4	6	1	3	5
Criterion referenced test	24	45	15	84	95	85
Rank	5	4	6	3	1	2
Curriculum	154	173	166	156	119	154
Rank	4.5	1	2	3	6	4.5
School psychologist						
Rank	6	4	5	1	2	3
Total acceptability score	554	617	421	778	591	671
Rank of total	5	3	6	1	4	2

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists.
Prin = Principals.

APPENDIX F

LISTING OF ALL ASSOCIATES FOR

/SCHOOL PSYCHOLOGIST/

TABLE F-1

Listing of All Associates and Categories and Their Frequencies;
Stimulus Term: SCHOOL PSYCHOLOGIST

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Blanks			34	18	19	14	5	17	107
Test, evaluate, offer suggestions				1					1
Behavior and social testing				1					1
Tester				1	1	2	1	2	7
Tests				2	1	3		1	7
Testing					4	3	1	4	12
Responsible for psych. testing						1			1
An individual who tests						1			1
Test person						1			1
Tester of referrals						1			1
Test evaluation								1	1
Learning disabilities tester								1	1
Emotional testing								1	1
	1		0	5	6	12	2	10	35
Consult			1						1
Consultant and counselor			1						1
Consultant				3	1	5	11	4	24
Consultant to help understand behavior				1					1
Intervention consultant							1		1
Program consultant							1		1
Consultation							2	1	3
	2		2	4	1	5	15	5	32
Helping			1						1
Help			2	1	1				4
Helper			2	1	1	1	2	3	10
Helpful			1	3	2				6
Helpful suggestions					1				1
Helpful person					1				1
Assistant					1				1
Helps set up appropriate programs for exceptional children						1			1
Aid to all concerned						1			1
Helps with behavior change								1	1
Part time help								1	1
	3		6	5	6	4	2	5	28

TABLE F-1 (Continued)

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Be like a counselor			1						
Counselor			2	3	1	4	2	2	14
Guidance counselor			1		1				2
Counseling					1	1			2
Counselor-parent						1			1
Counselor-child						1			1
	4	4	3	3	7	2	2	21	
Assessment specialist							1		1
Individual assessment							1		1
Assess strengths and weaknesses				1					1
Assessment of problems						1			1
Assessments						1	1	1	3
Assesser						2			2
Assessment team						1			1
Examiner						1	1	2	4
M-team member						1			1
M-team						1			1
	5	0	1	0	8	4	3	16	
Psych. evaluation			1						1
Evaluation						2	2	1	5
Evaluator						2		2	4
Evaluator, consultant						1			1
Psych. educat. evaluator						1			1
Local evaluation							1		1
Evaluate							1		1
Makes psych. evaluation							1		1
	6	1	0	0	4	4	6	15	
Helps with school problems				1					1
Person trained in helping child find his problem			1						1
Problem children			1		1				2
School work with problem child			1						1
Help with children who won't help					1				1
Help find problems					1				1
Works with problems					1				1
Identifies problems						1			1
Specializing in educational problems						1			1
Consults with children with problems						1			1
	7	3	1	4	3	0	0	11	

TABLE F-1 (Continued)

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Diagnostician			1	1		2	1	2	7
Diagnose					1				1
Diagnosis								1	1
Diagnostic								1	1
	8		1	1	1	2	1	4	10
Recommend			1	1					2
For interviewing			1						1
Screening			1						1
Screening program			1						1
Suggests procedures and follow-up				1					1
Conferences					2				2
Makes recommendations						1			1
Determiner of placement						1			1
	9		4	2	2	2	0	0	10
Resource and consultant							1		1
Resource person			2	1					3
Resource						2	1		3
Resource person to aid teacher						1			1
	10		2	1	0	3	2	0	8
Helpful to teacher and parent							1		1
Works with teacher			1						1
Helps teacher deal with school problems				1					1
Helps classroom teacher					1				1
Consults with teacher regarding problem child						1			1
Consults with parents of problem child						1			1
Consults me and child						1			1
Works with parents and pupils								1	1
	11		1	1	1	3	1	1	8
Child oriented				1					1
A person to help plan a program to help a child					1				1
Child defender								1	1
Help for special children								1	1
Works with youngsters							1		1
Child advocate							1		1
Person to aid students						1			1
Teacher as well as child oriented					1				1
	12		0	1	2	1	2	2	8

TABLE F-1 (Continued)

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Advisor			1	3	2				6
Gives helpful advice							1		1
	13		1	3	2	0	1	0	7
Help for emotionally different				1					1
Help with emotional problem				3	1				4
Emotional stress					1				1
Person trained to analyze feelings, emotions	14		0	4	2	0	0	1	1 7
Specialist			1			1	2	1	5
Learning specialist							1		1
	15		1	0	0	1	3	1	6
One who helps to find learning disability problems				1					1
Help with L.D. study				1					1
Determines learning problems				1					1
Learning disability					1				1
Someone to help with learning problem					1				1
Personalizing learning problems in a school setting	16		0	3	2	1 1	0	0	1 6
A sounding board sometimes				1					1
A good listener					1				1
Helpful listener					1				1
Sounding board							2		2
	17		0	1	2	0	2	0	5
Report			1		1	2			4
Reveal test results						1			1
	18		1	0	1	3	0	0	5
Friend				2	1	1			4
	19		0	2	1	1	0	0	4
Strategy							1	1	2
Curriculum innovations							1		1
Development of individual problems	20		0	0	0	0	2	1 2	1 4

TABLE F-1 (Continued)

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Professional worker				1					1
Professional							3		3
	21		0	1	0	0	3	0	4
Psychological techniques				1					1
A person trained in psychology				1					1
Authority in psychology				1					1
	22		0	3	0	0	0	0	3
A person who helps with behavior problems				1					1
Behavior problems					1				1
	23		0	1	1	0	0	0	2
Skilled							1		1
Good			1					1	2
Good for students			1						1
A happy person			1						1
Would be helpful			1						1
Well trained				1					1
Wonder person				1					1
Would be able to help us meet the needs of our children				1					1
Important guide				1					1
Could be helpful					1				1
Important					1				1
Supportive					1				1
One we need bad to help with guidance					1				1
A very important part of any system					1				1
Intelligent							1		1
Work with us								1	1
Necessary								1	1
Problem solver								1	1
In some ways useful to teacher			1					1	2
Good for closed classroom			1						1
	24a		4	6	5	0	2	5	22

TABLE F-1 (Continued)

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Spread thin							1		1
Late						1			1
Resented by students								1	1
Need a guidance counselor			1						1
More expensive than counselor			1						1
Does nothing much but gets paid more			1						1
Results of his work never used			1						1
Is not around enough to help			1						1
Different ideas from own				1					1
Not here often enough				1					1
Not much help so far			1						1
Out of mainstream of teaching				1					1
Lack of communication with teachers				1					1
Too few aided					1				1
Unnecessary					1				1
Ego trip					1				1
Detrimental					1				1
Jack of all trades, master of none							1		1
Different orientation						1			1
Effectiveness?						1			1
Remote involvement								1	1
Not practical at times								2	2
	24b		6	4	4	3	2	4	23
Not always correct								1	1
Well trained in narrow area								2	2
Smooth talking					1				1
Over worked					1				1
Don't have one			1						1
Never saw one			1						1
Lack of time				1					1
Seldom see her				1					1
Too busy				1					1
Unavailable					1				1
Busy					1				1
Not enough time					1				1
Not a full time one					1				1
Too scarce						1			1
-1						1			1

TABLE F-1 (Continued)

Associate	Category Number	Practitioner Groups N*	CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Need one			1						1
Needed			1	1	1			2	5
Needed badly in our area				1					1
Need in schools						1			1
What's to omit to get?					1				1
More practical			1						1
Does she really understand			1						1
Cost				1					1
Qualifications				1					1
A signature					1				1
Misused						1			1
Need to develop power base						1			1
Role						1			1
I'd like to do less testing						1			1
Ethical						1			1
Many beliefs						1			1
Growth						1			1
		24c	6	6	9	7	8	5	41
Sounds			1						1
Difficulty in speech			1						1
Understanding			1						1
Progress			2						2
Discipline problem			1						1
Someone trained in psychology to aid children with problems			1						1
Aid			1						1
Mental health				1			1		2
Teacher relation to solve problem				1					1
Help find child				1					1
Behaviors				1					1
Team person learning				1					1
Tool				1					1
Mixed up parents					1				1
A teacher's key to behavior				1					1
Explanation of behavior				1					1
Observation								1	1
Observing					1				1
Class meetings					1				1
Guidance					2			2	4
Pupils					1				1

TABLE F-1 (Continued)

Associate	Category Number	N*	Practitioner Groups: CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Solutions				1					1
Discuss					1				1
Male					1				1
Back-up					1				1
Ideas for behavior					1				1
Competency						1			1
Counsels parents						1			1
Necessary for placement in resource					1				1
Program placement					1				1
Data								1	1
Curriculum development							1		1
Therapy							1	1	2
Mel (sic)							1		1
State certification							1		1
Learning-emotion							1		1
Practicing of mind							1		1
Interested in individual learning							1		1
Intervention							1		1
Research								1	1
Analytical and descriptive								1	1
Change of behavior								1	1
Takes all known data								1	1
Psychologist especially trained to understand child								1	1
Behavior modification								1	1
Liaison-learning problem			1						1
Mental hygenist			1						1
Analyst			1	1					2
Weaver of problems							1		1
Change agent							1		1
Confidante				1					1
Coworker				2					2
Staff				3					3
Problem solver							1	1	2
Human relations expert							1		1
Facilitator							2		2
Member of system							1		1
Mediator							1		1

TABLE F-1 (Continued)

Associate	Category Number	N*	Practioner Groups CT 1-5 90	CT 6-10 90	CT 11+ 90	RT 90	SP 90	Prin 90	Total 540
Educational behaviorist							1		1
Pulls is all together							1		1
Psychometrician							1		1
Behaviorist							1		1
Developmental specialist							1		1
Team member							1		1
Change initiator							1		1
Goal setter for individual student								1	1
Intellectual and educational investigator								1	1
System interpreter of vital statistics								1	1
The revelator								1	1
	25		8	12	14	6	26	16	81
L.T.V.E.C.			4						4
Charley Gleich			3						3
Talley			1						1
Teacher				1	1				2
Principal				2	1				3
School nurse				1					1
Ms. Marine				1		1			2
Person					3				3
Me							1		1
PSW								1	1
	26		8	5	5	1	1	1	21

*N is total associates possible.

Note: CT 1-5 = Classroom teachers with 1-5 years work experience.
CT 6-10 = Classroom teachers with 6-10 years work experience.
CT 11+ = Classroom teachers with 11 or more years work experience.
RT = Resource teachers.
SP = School psychologists
Prin = Principals.

VITA

George Douglas Cox was born in Pacific Grove, California on October 24, 1945. He graduated from Wartburg Central High School, Wartburg, Tennessee in 1963. After serving four years in the United States Air Force he entered Maryville College, Maryville, Tennessee graduating cum laude in 1971. He entered the School Psychology Program, Psychology Department, The University of Tennessee, Knoxville in 1971 and left to work full time after beginning his dissertation research in 1975. Since that time he served as a full time psychological intern (1974-1975) for the Little Tennessee Valley Educational Cooperative in Alcoa, Tennessee and as Director of the Community Technical Assistance Program and Director of AMSA Southeast for the American Medical Student Association Foundation. He is married to the former Elizabeth Lee Crawford of Apollo, Pennsylvania and has two children, McKenna Louise, three, and Christopher Douglas, ten months.