DOCUMENT RESUME

ED 156 628 SP 012 507

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TITLE The Identification of Inservice Training Needs and Their Relationship to Teacher Demographic Characteristics, Attitude Toward, and Knowledge of Mildly Handicapped Children. Research Report Series.
INSTITUTION Connecticut Univ., Storrs. Bureau of Educational Research and Service.
PUB DATE Mar 78
NOTE 34p.; Paper presented at the Annual Meeting, American Educational Research Association (Toronto, Canada, March 29-31, 1978)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Data Analysis; Demography; Educational Research; *Factor Analysis; Handicapped Students; Higher Education; *Inservice Education; Knowledge Level; *Mainstreaming; *Needs Assessment; Statistical Data; *Teacher Attitudes; *Teacher Characteristics

ABSTRACT

Because most current literature regarding needs assessment data fails to discuss the meaning of the identified needs, two research questions are investigated: What valid and reliable constructs (components) can be derived from the data which reflect the interrelationships among teacher perceived skills needed for working with mildly handicapped children? What is the relationship between teacher perceived needs and demographic characteristics, attitudes toward, and knowledge of mildly handicapped children? Sample group, instrumentation, and data collection of the project, which investigated over 1,000 teachers in K8 rural, suburban, and urban schools, are described. Eight factors were identified for the first research question: (1) record keeping and evaluation; (2) development of goals and objectives; (3) selection and use of assessment instruments; (4) curriculum development; (5) general knowledge; (6) parent communication; (7) individualization of instruction; and (8) utilization of primary resources. For the second research question, results of a stepwise regression indicate that attitudes and knowledge variables are the best predictors of inservice training needs. Statistical data and charts are appended. (MJB)

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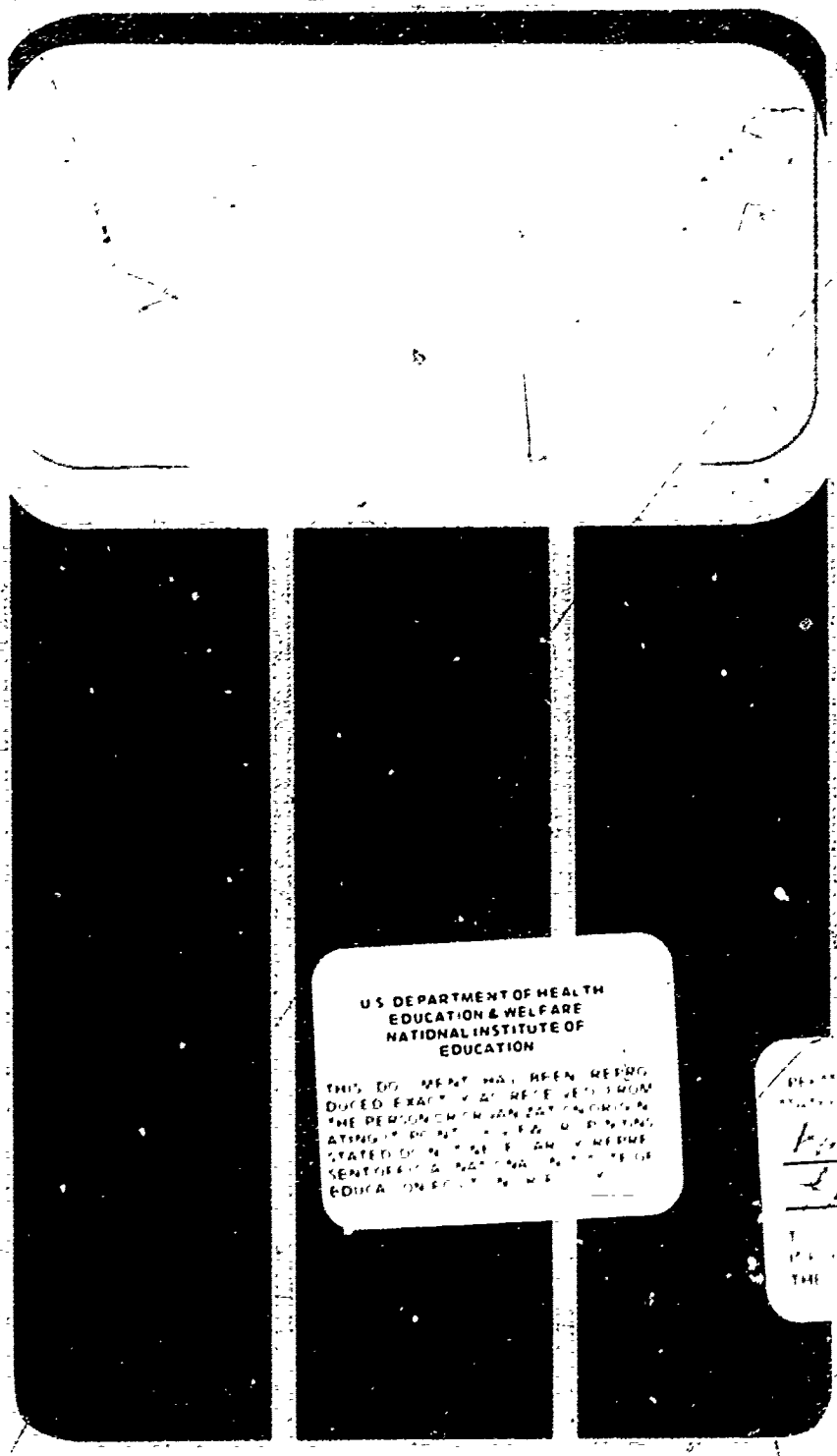

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The Identification of Inservice Training Needs and Their Relationship to Teacher Demographic Characteristics, Attitude Toward, and Knowledge of Mildly Handicapped Children

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Paper presented at the American Educational Research Association Annual Meeting, Toronto, March, 1978. Copies made in the United States.

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THEORETICAL RATIONALE

The use of inservice training for the purpose of improving teacher competencies has been well established. Educators have increasingly become aware of the need to involve teachers and other prime interest groups in the planning of these inservice programs. Shearron (1974) concludes that involving prime interest groups in inservice planning is important, but not sufficient; the planning for viable inservice training must begin with a needs assessment. However, the inservice needs assessment methodology is limited and inadequate (McGinty & Keogh, 1975).

A compelling reason for further development of a more comprehensive inservice needs assessment methodology is the recent mainstreaming legislation pertaining to the integration of mildly handicapped children into public schools (Public Law 94-142, 1976). Rucker (1972) suggests that successful integration will not be achieved without additional inservice training of regular classroom teachers. The basis of any inservice training effort must necessarily focus on needs assessment data that is able to identify the competencies needed by regular classroom teachers to effectively teach mildly

handicapped children (Gable & Gillung, 1976). However, prior to employing needs assessment data for training decisions, validation research must be carried out to develop proper interpretations of needs assessment data. This is consistent with Cronbach's (1971) description of the continuing validation process as refining and elaborating on the interpretation of response data for the purpose of achieveing a greater understanding of the meaning of a particular score. This research will examine the methodological properties of needs assessment data as well as relationships of needs assessment data to respondents' demographic characteristics, attitudes towards and knowledge of mildly handicapped children.

RESEARCH QUESTIONS

1. What valid and reliable constructs (components) can be derived which reflect the interrelationships of the perceived teacher competencies needed for working with mildly handicapped children.

2. What is the relationship between classroom teachers perceived needs and their demographic characteristics, attitude toward and knowledge of mildly handicapped children?

RESEARCH METHODOLOGY

This section will describe the sample, instrumentation, and data collection.

SAMPLE

The sample consisted of classroom teachers (N=1045) from school systems in the States of Connecticut and Massachusetts. School systems were selected to be representative of grades K-8 within a range of school types (e.g., rural, suburban, and urban). Within each one of these categories a representative pool of possible communities was identified and invited to participate in this

study. Fifteen communities from the above categories agreed to participate.

All classroom teachers in grades K-8 within these selected communities were requested to complete an instrument packet. Classroom teachers are defined as teachers who are primarily responsible for instruction in the subject areas (i.e., reading, math, English, science, and history). Ancillary personnel and special education teachers were not included in the sample and did not complete the instrument packet.

The specific sample characteristics of the 1,045 classroom teachers relating to personological and background information are presented in Table 1.

Insert Table 1 about here.

As can be seen from this table, a significantly higher proportion of females (75%) participated in this study than males (25%). Since this study focused on the grades K-8, where female membership usually predominates, the obtained percentages should be representative of most communities. The categories labeled Special Education Class Located within the School Building, Highest Degree Earned, and Number of Special Education Courses appears to represent the expected category proportions. Moreover, it should be noted that the proportion of teachers participating in this study spans the full range of the grade category (K-8). This finding is encouraging since it serves to greatly reduce the possibility that grade membership would significantly influence the results of the study.[1]

[1] Additional demographic information will be reported upon later in this paper. The specific variables are: years of teaching experience, amount of previous experience with mildly handicapped children, and exposure to exceptional children within and outside of class situations.

INSTRUMENTATION

This section will present the reliability and validity information for the instruments employed in this study.

An instrument packet was developed which included the following information: a cover letter outlining the purpose of the study and directions for completing the instruments, a background information form, The Survey for Identifying Inservice Training Needs, The Rucker-Gable Educational Programming Scale and the Michigan Survey (see Appendix A). In addition, the validation of the Survey for Identifying Inservice Training Needs will be discussed in detail due to the importance of this instrument to this study. The content validation procedures, factor analysis (construct validity) of response data and resulting alpha reliabilities will be presented.

RUCKER-GABLE EDUCATIONAL PROGRAMMING SCALE (RGEPS) (Rucker and Gable, 1974)

This instrument was selected on the basis of the content validity of its scales and the fact that the authors reported acceptable reliability and validity evidence. The RGEPS consists of 30 items that describe specific behavioral characteristics of actual children who have been referred for special education services. For each item the respondents are asked to chose the best educational placement for the child from seven possible placement choices. The RGEPS yields scale scores measuring the respondents' attitude toward and knowledge of mildly handicapped children for three types of handicapped children with varying degrees of disability (i.e., types: mentally retarded, learning disabled, and emotionally disturbed; degree: mild, moderate, and severe).

Interrater reliabilities for the experts' placement ratings ranged from .87 to .99 for the subscales and total scores. Alpha internal consistency

reliabilities were calculated for the subscales and total scores ranging from .87 to .94. In addition, split-half internal consistency reliabilities were performed on the attitude subscale and total score. The resulting split-half reliabilities ranged from .81 to .96.

Content validity of the RGEPS was established from a two step judgmental process involving 65 experts in the field of special education. First, actual case studies were selected by the experts to reflect the mental retardation, emotional disturbance and learning disabilities areas. Next, each item was rated on the basis of its appropriateness to a given category and the severity of the disability. The final set of 30 items represents a continuum of disability across each of the three disability areas.

Construct validity of the RGEPS has been supported through the examination of known group differences in workshop situations (Rucker and Gable, 1974).

MICHIGAN SURVEY

This instrument was developed by Bates (1976) at the University of Michigan for the purpose of evaluating the attitudes of pre-service general education trainees' toward working with mildly handicapped children. It has been selected for this study because of its apparent content validity and the fact that it is a generalized scale that directly assesses attitude.

It is important to note that the RGEPS measures attitude inferentially from the respondent's choice of educational placement.

The Michigan Survey is comprised of 11 attitude items that assess a regular teacher's general attitude toward mildly handicapped children. Three survey questions assess: (1) how knowledgeable teachers feel they are about exceptional children; (2) how comfortable they are with exceptional

children; (3) how confident they feel they are about teaching exceptional children.

Alpha internal consistency reliability was computed for the 11 item scale from 1,034 regular class teachers in the States of Connecticut and Massachusetts. The attained alpha reliability was .80 which meets the a priori criterion established for this study. The 11 items were also factor analyzed using a principal component analysis with an oblique rotation to examine the instrument's construct validity. Two meaningful factors resulted from this analysis. However, since this intercorrelation between the factors was .51 and the two factors were conceptually more meaningful together, the researchers collapsed the factors. After collapsing the factors the final scale corresponded exactly to the original 11 item scale.

SURVEY FOR IDENTIFYING INSERVICE TRAINING NEEDS

This instrument was originally developed by Strauch (1976) to identify the skills (teacher competencies) needed by special education teachers to work effectively with mildly handicapped children. The original instrument has been adapted in this study to assess the teacher competencies needed by classroom teachers to work effectively with mildly handicapped children. In order to standardize this instrument for classroom teachers content and construct validity needed to be re-established.

A two-step content validation procedure was employed to select items for a revised instrument appropriate for the assessment of inservice training needs of regular class teachers. First, the original 110 items were pilot tested on 84 special education teachers who attended a summer workshop (1977) at the University of Connecticut. These teachers were instructed to rate on a five-point likert rating scale each item on the basis of its importance to

teaching mildly handicapped children in the classroom. A mean cut off score of 3.5 or better was established in order to identify the pool of items. A pool of 75 items was thus identified. Further inspection of these items was conducted to eliminate redundencies or items lacking appropriate variability. As a result of this procedure a 70 item instrument was established. Next, 18 experts in special education were asked to rate, using a five-point Likert scale, these 70 competency items relative to their importance to teaching mildly handicapped children in a regular class setting and the appropriateness of the category placement.

Each content expert was also asked to generate new items which they considered important but were not included in the original category listings. Cut off scores were established for the experts' importance ratings (3.5 or better) and category placement ratings (4.0 or better). Inspection of the item means and standard deviations identified 60 items which were judged most important to teaching mildly handicapped children in the regular classroom. Five items were added to this pool from those recommended by the content experts. In the final step of the content validation process, items were clustered into homogeneous categories based on the (previously generated) category placement ratings. Items with low placement ratings (3.9 or less) or which were newly developed were then recategorized based on the judgments of the content experts. Following this procedure, all items were clustered into 5 a priori categories.

Table 2

A Priori Categories for the Survey of Inservice Training Needs

Categories	Number of Items
Planning Instruction for MHC	15
Conducting Instruction for MHC	19
Assessing and Evaluating the School Performance of MHC	14
Communication Pertaining to MHC	8
Professional Information and Development	9

*See Appendix A for a copy of this instrument.

Establishing construct validity for this questionnaire is the focus of the first research question stated in this study.

> Research Question 1: What valid and reliable constructs (components) can be derived which reflect the interrelationships of the perceived teacher competencies needed for working with mildly handicapped children?

Each competency on this questionnaire was rated twice on a five-point Likert type rating scale (i.e., Very Low, Low, Medium, High, Very High). First, for each competency statement teachers were asked to rate their present ability (competency) to work with mildly handicapped children. Next, for each competency item, classroom teachers' were requested to rate their desired competency performance levels.

The needs assessment questionnaire was then administered to the sample of 1,045 regular class teachers from the States of Connecticut and Massachusetts. Using the response data from the present competency ratings as the unit for analysis, a 65 x 65 matrix of intercorrelations was generated to examine the construct validity of this instrument. A principal component factor analysis with an oblique transformation was employed to identify the common dimensions within the survey.

Results of the Factor Analysis. The means and standard deviations of the 65 items included in the Survey for Inservice Training Needs are presented in Table 3.

Insert Table 3 about here.

Inspection of the Table 3 entries indicates sufficient variability among the items. Further, extreme responses such as Very High or Very Low means and standard deviations appear generally not to be associated with the item response data.

Employing the unity root criterion, nine components (61.7% of total variation) were generated from the primary pattern matrix as a result of the

principal component analysis.

Insert Table 4 about here.

Table 4 contains the entries from the primary pattern matrix for each of the nine components. Items were assigned to categories on the basis of the following two criteria: (A) a loading of .35 or higher and (B) items loading of .35 or higher on more than one facter were assigned to the factor on which they loaded highest. The nine components illustrated in Table 4 were intercorrelated to assess the general relationship among the factors.

Insert Table 5 about here.

The intercorrelations among the factors were generally low. However, the following pairs of components I and III, II and VIII, V and VI had significantly higher intercorrelations (.50 or >). This finding suggests that these factors may be collapsed. However, the researchers chose not to collapse these factors due to the nature of the components. Individually these components were interpretable and highly reliable and represented sufficient differences in meaning to warrant their independent treatment.

Table 6 contains the a priori clusters generated by the content experts, the derived scales based on the factor analysis and the respective alpha internal consistency reliabilities.

Insert Table 6 about here.

Inspection of the entries in Table 6 indicates the extent that the factor solution reflects the a priori categories derived from the content experts. It is important to note, that the factor solution reduces the original survey from 65 items to 51 items and increases the number of dimensions from the 5 original categories to 8 interpretable components.

In addition, the alpha internal consistency reliabilities derived for the judgmental and factor dimensions were high across all categories for both methods. The a priori categories alpha reliabilities ranged from .90 to .91 and the factor dimensions reliabilities ranged from .80 to .91. However since the principal component solution is more parsimonious and represents emperically derived constructs, the factor solution will be employed as a dependent measure in subsequent analysis in this paper.

Table 7 provides a listing of the item stems and loadings that contributed to the naming of each factor.

Insert Table 7 about here.

Factor I (Table 7) was labeled Record Keeping and Evaluation. Items defining this dimension reflect the systematic recording of information about mildly handicapped children for the purpose of evaluating their progress. Classroom teachers who tend to rate themselves highly with regard to the item content defining this factor would generally feel competent in performing these skills. Since classroom teachers will be required to individualize their curriculum for mainstreamed students, it is reasonable that a dimension pertaining to record keeping and evaluation emerged from the response data.

Factor II was named Developing Goals and Objectives. The items in this factor represent the development of appropriate goal and objectives for the purpose of meeting individual needs of mildly handicapped children. Teacher competency is assessed by the degree in which they can identify, state and organize appropriate objectives for working with mildly handicapped children. Classroom teachers who rate themselves highly on these competencies feel they have the ability to develop appropriate goals and objectives for mildly handicapped children.

Factor III was named Selection and Use of Assessment Instruments. The items defining this factor depict various procedures for selecting, developing, and using test data for evaluating pupil performance. A high score on this dimension indicates that classroom teachers feel capable of employing these assessment procedures with mildly handicapped children.

Factor IV was named Curriculum Development. The items within this dimension focus on the activities associated with curriculum development in schools. These activities are designed to meet the instructional needs of mildly handicapped children and at the same time stimulates interest, thinking, & pupil achievement. Classroom teachers who rate themselves highly on this factor feel they have the competency to provide curriculum that is challenging, interesting, and appropriate for working with mildly handicapped children.

Factor V was labeled General Knowledge. The items in this factor are concerned with the teacher's knowledge about issues that are related to mildly handicapped children. A high score on this dimension represents the degree in which a classroom teacher is knowledgeable about these issues.

Factor VI was labeled Parent Communication. This factor is characterized by items that represent important areas of general communication (interaction) pertaining to mildly handicapped children. However, since the highest loadings focus on areas of parent communication and because this is such an integral part of the mainstreaming concept, the factor dimension was labeled Parent Communication.

Classroom teachers who rate themselves highly on this dimension feel that they can effectively communicate about classroom performance of mildly handicapped children with parents, students, and colleagues.

Factor VII was called Individualizing Instruction. Items loading on this dimension assesses the degree in which classroom teachers feel able to

individualize instruction for mildly handicapped children within their classrooms. High scoring teachers would feel that they have a high degree of skill (competency) regarding individualizing instruction for mildly handicapped children.

The final factor, Factor VIII, was called Utilization of Primary Resources. The items in this dimension suggest that classroom teachers should employ a variety of resources (i.e., parents, paraprofessionals, students, and colleagues) to assist them in working with exceptional children. Classroom teachers scoring highly on this dimension feel competent that they would be able to incorporate these resources into their working with mildly handicapped children.

Data Collection. An instrument packet was distributed to all communities during April and May of 1977. Within each community a school administrator was designated to be responsible for the administration and distribution of these instrument packets. The responsibilities of the local school administrator included identifying the target population, and meeting with principals and teacher representatives to review procedures for implementing the study. Upon completing this process, instrument packets were delivered to regular classroom teachers in grades K-8. These classroom teachers were instructed to complete the instrument packet at home and return it sealed to the specified school administrator within one week. The participants were requested not to put their names on the instrument packets and were further cautioned not to discuss their individual responses with their colleagues. This was done to ensure both the anonymity of the respondents and to reduce the chance of obtaining socially desirable responses.

RESULTS AND DISCUSSION

Stepwise multiple regression was employed to analyze the second research question.

> Research Question 2: What is the relationship between classroom teachers' perceived needs and their demographic characteristics, attitude toward, and knowledge of mildly handicapped children?

PREDICTOR-CRITERION INTERCORRELATION MATRIX

Prior to discussing the regression findings, a correlation matrix containing the relationships among the predictor variables and the dependent measures will be examined.

Insert Table 8 about here.

Notice, Table 8 has been partitioned into the following three areas:

1. Upper triangle: this section is composed of all intercorrelations among the 16 predictors utilized in this study.
2. Lower triangle: this area is comprised of the intercorrelations between the dependent measures.
3. Rectangle: this portion of the matrix represents the correlations between the predictors and the dependent measures.

Each area of the correlation matrix will be briefly discussed.

Upper Triangle. The 16 predictors identified in Table 8 are compared of demographic variables (e.g., items 1, 2, 3, 4, 5, 6, 7, 8, and 12), attitude variables (e.g., items 10, 11, 14, and 16), and knowledge variables (e.g., 9, 13, and 15) which will be employed to explain the variation in the dependent measures (e.g., scale scores from the needs assessment survey).

The negative correlations for the background variables labeled years teaching experience (item 1), degree earned (item 4) and special education course work (item 6) are, in general, negatively correlated with the attitude and knowledge variables. These negative correlations reflect scaling reversals

between these items rather than "true negative" relationships. (See Appendix A to verify the scaling). Moreover, the intercorrelations between the background attitude and knowledge variables are generally quite low. However, the intercorrelation between the attitude and knowledge variables are moderate to high (i.e., correlations range from .37 to .68). This indicates that the shared common variation between these predictors may effect their overall relationships with the dependent measures.

Lower Triangle. This area of the correlation matrix is comprised of the intercorrelations between the dependent measures (e.g., items 17 through 24). The dependent measures are scale scores (as opposed to component scores) developed from the principal component analysis of the Survey for Identifying Inservice Training Needs. For each factor dimension these scale scores represent the inservice training needs of classroom teachers who will be working with mildly handicapped children.[1]

The intercorrelations between the dependent measures are generally high (i.e., correlations range from .41 to .70). This result was likely due to the similarity of content (competency ratings) across the factor dimensions and the fact that scale scores instead of component scores were employed. The dependent measures were analyzed separately because if the dependent measures were formed from unrelated component scores, the analyses would be more independent, but lose practical application to special educators.

Rectangle. The intercorrelations in the rectangle reflect the level of relationship between the predictor variables and the dependent measures.

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[1]Scale scores are computed for each dimension by summing across the respondents' present competency ratings. It should be noted that the Euclidean Distance Formula has also been used in this study to identify inservice training needs within dimensions. However, these results are presently being analyzed and therefore will not be presented in this paper.

Inspection of these correlations indicates a great amount of variability in the degree of correlation between these variables. This variability was expected due to the nature of the differiential relationships between the predictors and the dependent criteria. Again, it should be noted that the negative correlations are a result of differences in scaling the items (See Appendix A).

STEPWISE MULTIPLE REGRESSION

Eight separate multiple regressions were performed to: (1) identify which predictor variables contributed most to the explanation of the eight dependent measures; (2) assess the relative importance of each predictor by examining the order in which the predictors entered the regression equation; and (3) assess the "effectiveness" of the regression equation by inspecting the magnitude of the multiple correlations for each dependent measure.

Insert Table 9 about here.

Table 9 presents the results of the stepwise multiple regression which examines the relationship between inservice training needs and teacher demographic characteristics, attitude toward, and knowledge of mildly handicapped children. The entries in Table 9 represent those predictors which significantly contributed to explaining the variation in the dependent measures. This was determined by examining the significance of the entering variables. Predictor variables were not reported in Table 9 unless the beta weight was significant, the multiple correlation significantly increased at the respective step, and the standard error of estimate deceased.

Inspection of Table 9 generally indicates that across the 8 separate dependent dimensions attitude and knowledge variables were the best predictors

of inservice training needs. The most important attitude and knowledge variables appear to be the general survey items on the Michigan Survey (Appendix A). Specifically the items assessing confidence (attitude) and knowledge about mildly handicapped children and the mainstreaming legislation were generally the first variables to enter the regression equations. This finding suggests that attitude and knowledge variables are better predictors of inservice training needs than the teacher demographic (background) variables. The background variables that did enter the regression equations were far less consistent. Thus, no general statements can be made regarding these variables.

The overall multiple correlations for the eight dependent measures ranged from .38 to .64 and explained from 13% to 41% of the variation in the dependent measure (inservice needs). The best prediction of inservice training needs was in the General Knowledge dimension and the worst prediction was attained for the Individualized Instruction factor. This finding is understandable in light of the content congruence between the General Knowledge dimension and many of the predictors. Whereas the teachers' perception of their competencies regarding the Individualizing Instruction dimension are probably more likely to be influenced by extraneous factors other than a teachers attitude toward and knowledge of mildly handicapped children. Those factors which would serve to moderate (predict) a teacher's perception of their ability to individualize instruction were not controlled for in this study. Thus, the low multiple correlation attained for this dimension may reflect this lack of congruity between the dependent measure and the predictor variables.

In general, the multiple correlations across the eight dependent measures were reasonably high given the nature of these dimensions.

SUMMARY AND CONCLUSIONS

The purpose of this study was twofold. First, the underlying constructs of the needs assessment questionnaire were identified through employing a primary component analysis. Eight interpretable and reliable components were generated from this analysis. Scale scores were computed for each of the eight dimensions and served as the dependent measures for the regression analysis.

The second aspect of this study was to investigate the relationship between inservice training needs and teacher demographic variables, attitude toward and knowledge of mildly handicapped children. Inservice training needs were defined as the classroom teachers' level of skill (competency) regarding working with mildly handicapped children.

The specific competency areas were identified through the factor analysis of the needs assessment questionnaire. The resulting scale score provided an index of inservice training "needs" for each dimension.

Most current literature regarding needs assessment fails to discuss the meaning of the identified needs. The focus of this study is to achieve a greater understanding of these needs through employing stepwise regression.

The results of the stepwise regression indicates that attitude and knowledge variables are the best predictors of inservice training needs. The combination of attitude, knowledge, and demographic variables in the 16 predictor equation resulted in a R that ranged from .38 to .64 across the eight dependent measures and explained from 14% to 41% of the variation in needs. Due to the exploratory nature of this study the obtained multiple correlations were quite respectable.

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Table 1

Frequencies and Percentages of Teachers with

Identified Demographic Characteristics

N = 1,045

Demographic Characteristics	Frequency	Percent
Sex:		
Male	265	25
Female	780	75
Special Education Class Located Within Building:		
Yes	826	79
No	217	21
Highest Degree Earned:		
BA	498	48
MA	495	47
Sixth-Year	49	4.7
Ph.D.	3	.3
Grade Taught:		
K	88	8
1	135	13
2	126	12
3	123	12
4	103	10
5	104	10
6	128	12
7	140	14
8	95	9
Number of Special Education Courses:		
0	575	55
1	172	16
2	112	11
3	57	5
4	39	4
5	17	2
6	5	1
7+	59	6

Table 3

Item Means and Standard Deviations

N=1034

Items	$\bar{X}$	S.D.	Items	$\bar{X}$	S.D.
1	2.55	.90	33	2.37	.93
2	2.96	.92	34	3.06	.99
3	2.89	.95	35	2.49	.97
4	2.82	.94	36	2.37	1.05
5	2.56	.92	37	2.39	1.03
6	2.98	.93	38	2.31	.98
7	2.71	.89	39	2.74	1.02
8	3.34	.88	40	3.08	.97
9	2.91	.90	41	3.34	1.04
10	3.29	.91	42	2.54	1.02
11	3.20	.85	43	2.44	.96
12	2.90	.89	44	2.47	.96
13	2.88	.90	45	3.08	1.17
14	2.54	1.01	46	2.38	.90
15	2.67	.91	47	2.44	.92
16	2.49	.89	48	2.32	.96
17	3.08	.83	49	3.62	1.04
18	3.34	.84	50	2.81	1.06
19	3.29	.80	51	2.60	1.14
20	2.74	.88	52	2.86	1.06
21	2.96	.95	53	3.39	.97
22	3.27	.87	54	2.96	.97
23	3.17	.95	55	2.89	1.07
24	3.17	.87	56	2.64	1.06
25	2.60	1.05	57	2.31	.98
26	2.81	1.03	58	2.89	1.08
27	3.41	.88	59	2.81	.98
28	2.93	1.02	60	2.27	.92
29	3.28	.97	61	2.74	.91
30	3.06	1.02	62	2.56	.96
31	2.96	.97	63	2.85	1.02
32	3.16	.99	64	2.77	1.01
			65	3.53	.92

Table 4

Principal Component Loading Matrix with Oblique Rotation

Items	Components I	II	III	IV	V	VI	VII	VIII	IX
1				52					
2		69							
3		75							
4									
5				54					
6		46							
7				51					
8								34	
9									
10		52							
11		49							
12									
13		67							
14									40
15				51					
16				49					
17								63	
18								61	
19								67	
20				44					
21									
22								48	
23								36	
24									
25									53
26									38
27									
28									48
29									
30				35					
31									
32				47					

Continued

Table 4 (Continued)

Items	Components I	II	III	IV	V	VI	VII	VIII	IX
33									36
34									
35			64						
36			85						
37			80						
38			68						
39			42						
40	48								
41									
42	46								
43			40						
44	41								
45									
46	37								
47	53								
48	58								
49						40			
50						73			
51						59			
52						83			
53						46			
54									
55						89			
56						71			
57					66				
58					72				
59					73				
60					57				
61					57				
62	41								
63					68				
64					74				
65					42				

*Only loadings greater .35 have been presented.

Decimals have been omitted.

Table 5

Component Intercorrelation Matrix*

Component	Component I	II	III	IV	V	VI	VII	VIII	IX
I									
II	35								
III	57	31							
IV	27	31	35						
V	47	40	43	36					
VI	47	28	46	34	66				
VII	10	10	6	5	22	22			
VIII	28	52	21	24	30	25	13		
IX	32	23	29	36	37	44	12		34

*Decimals have been omitted.

Table 6

Apriori Category Item Placements, Factor Derived Scales, Item Numbers and Alpha Internal Consistencies Reliabilities from the Survey for Inservice Training Needs

Apriori Categories	Item Numbers	Alpha Reliabilities	Factor Derived Scales	Item Numbers	Alpha Reliabilities
1. Planning Instruction for Mildly Handicapped Children	1-15	.91	1. Record Keeping and Evaluation	40, 42, 44, 46, 47, 48, 62	.87
2. Conducting Instruction for Mildly Handicapped Children	16-34	.93	2. Developing Goals and Objectives	2, 3, 6, 11, 13	.84
3. Evaluating and Assessing the Performance of Mildly Handicapped Children	35-48	.90	3. Selection and Use of Assessment Instruments	35, 36, 37, 38, 39, 43	.91
4. Communication Pertaining to Mildly Handicapped Children	49-56	.90	4. Curriculum Development	1, 5, 7, 15, 16, 20, 30, 32	.89
5. Professional Information and Development	57-65	.90	5. General Knowledge	57, 58, 59, 60, 61, 63, 64, 65	.90
			6. Parent Communication	49, 50, 51, 52, 53, 55, 56	.90
			7. Individualizing Instruction	17, 18, 19 22, 23	.83
			8. Utilization of Primary Resources	14, 25, 26, 28, 33	.80

Table 7

Items Contributing to the Naming of Factor I-VIII

Item Number	Item Stem	Loading
	RECORD KEEPING AND EVALUATION	
48	Providing students with a system for charting and evaluating their own progress.	.57
47	Assessing the extent to which a curriculum has been changed in regular classrooms.	.53
40	Gathering information on individual differences among students such as interests and attitudes	.48
42	Developing teacher-made tests to assess a particular learning pattern.	.46
44	Designing evaluation procedures which identify strengths and weaknesses in the total educational program.	.41
62	Developing a recording system for each child which indicates his progress in relation to specific objectives.	.41
46	Developing a systematic approach to identifying and resolving curricular problems.	.37
	DEVELOPING GOALS AND OBJECTIVES	
3	Arranging educational objectives into an instructional hierarchy (sequence).	.75
2	Stating objectives in terms of observable behavior of the learner.	.69
13	Breaking down general educational goals into sequences of specific instructional objectives.	.67
11	Identifying goals and objectives appropriate to pupil needs.	.49
6	Planning lessons and units that include procedures which measure the effectiveness of instruction.	.46

Table 7 (Continued)

Item Number	Item Stem	Loading
	SELECTION AND USE OF ASSESSMENT INSTRUMENTS	
36	Selecting tests appropriate for assessment of pupils in given content areas, e.g., reading and math).	.85
37	Using diagnostic test data in determining preferred learning styles and approaches for working with students.	.80
35	Interpreting diagnostic data in a manner that can be used in developing instructional objectives.	.64
38	Developing criterion referenced (mastery) tests to evaluate student performance.	.68
39	Designing infromal test procedures for measuring learner progress according to specified objectives.	.42
43	Evaluating long-term changes in pupil performance on the basis of pre/post test measures.	.40
	CURRICULUM DEVELOPMENT	
5	Formulating specific instructional objectives.	.54
1	Developing instructional materials to meet the instructional needs of students.	.52
7	Adapting innovative elements of regular education practices in planning educational programs.	.51
15	Designing teaching procedures to improve pupil motivation.	.51
16	Employing teaching techniques that stimulate convergent and divergent thinking.	.49
32	Providing success-procuding situations for students.	.47
20	Employing procedures that bring about lesson and unit summary.	.44
30	Establishing and maintain defined guidelines for classroom behavior.	.35

Table 7 (Continued)

Item Number	Item Stem	Loading
	GENERAL KNOWLEDGE	
64	Discussing the concept of "mainstreaming" as it applies to the regular classroom.	.74
59	Identifying the major socio-cultural factors that impede learning and subsequent school success.	.73
58	Understanding various administrative arrangements and reasons for their existence (e.g., resource room, special school, etc.).	.72
57	Having an awareness of state laws and educational provisions relating to student rights.	.66
63	Explaining the positive and negative effects of labeling or classifying students.	.63
60	Translating information about pupils into lists of functional attributes for these children.	.57
61	Describing various factors in the regular school environment that may enhance or depress student performance.	.57
65	Developing working relationships with peers and supervisors.	.42
	PARENT COMMUNICATION	
55	Advising and consulting with parents.	.89
52	Communicating outcomes of the instructional process to parents.	.83
50	Aiding parents in defining realistic goals for their children.	.73
56	Providing parents with information about strategies, techniques, and extensions of school programs which they can use at home.	
51	Participating as a member of an interdisciplinary team in planning an educational program for mildly handicapped children.	.59
53	Communicating with colleagues regarding strengths and weaknesses of particular pupils in his/her class.	.46
49	Observing accepted ethical practices, (i.e., confidentiality and the individual's rights) in communicating to others about students.	.40

Table 7 (Continued)

Item Number	Item Stem	Loading
	INDIVIDUALIZING INSTRUCTION	
19	Pacing instructional activities to maintain high pupil interest.	.67
17	Employing a variety of procedures that enhance and maintain learner attention to instructional activities.	.63
18	Employing procedures that effectively introduce learners to lessons and units.	.61
22	Devising pupil activities which accomplish specific instructional goals.	.48
23	Utilizing information about home and community conditions in daily teaching.	.36
	UTILIZATIONS OF PRIMARY RESOURCES	
25	Involving paraprofessional's skills to maximize individual contact with students.	.53
28	Utilizing professional resources to assist in managing pupils.	.48
14	Enlisting parent cooperation and support in developing educational programs.	.40
26	Applying behavior modification techniques where appropriate.	.38
33	Involving mildly handicapped children in instructional planning and evaluation.	.36

Table 8

Intercorrelations of Predictors and Criteria

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Years Teaching																								
2. Sex																								
3. Special Education Class in Building		16																						
4. Degree Earned	23	-11																						
5. Grade		-14	-11																					
6. Special Education Coursework				11																				
7. Exposure to MHC Within School	-17			-14		-28																		
8. Exposure to MHC Outside School		11				-17	32																	
9. Knowledge About MHC	14			-13		-42	56	40																
10. Comfort						-29	42	39	61															
11. Confidence	-12					-28	41	29	58	65														
12. Previous Experience	-15			-13		-33	65	44	68	58	56													
13. Knowledge About Mainstreaming				-10		-28	30	25	48	39	37	37												
14. RCSPS Attitude Scale																								
15. RCSPS Knowledge Scale	10	-24				-10																		
16. Michigan Survey		-11				-13	10		14	25	29	17	17	-18	19									
17. Developing Goals and Objectives				14		25	-19	-12	-32	-24	-30	-25	-28		-11	-16								
18. Record Keeping and Evaluations				10	-11	24	-25	-17	-37	-30	-37	-29	-30			-15	50							
19. Utilization of Primary Resources		17			-10	24	-26	-19	-39	-38	-39	-33	-31			-18	44	61						
20. Selection and Use of Assessment Instruments				11	-10	29	-27	-20	-39	-32	-37	-32	-29			-17	46	77	56					
21. Curriculum Development						33	-38	-23	-52	-46	-55	-47	-38			-27	55	63	70	61				
22. General Knowledge				10		33	-39	-28	-52	-42	-41	-43	-50		-13	-19	47	65	59	58	63			
23. Parent Communication		16			-11	21	-32	-21	-38	-34	-35	-35	-33		-15	-22	39	64	63	58	59	71		
24. Individualizing Instruction						20	-18	-12	-30	-25	-32	-23	-23		-10	-17	68	51	47	43	59	46	41	

Decimals are omitted.

Correlations ± 10 were excluded from the above.

Table 9

Multiple Regression Findings Assessing the Relationship Between Inservice Training Needs and Teacher Demographic Characteristics, Attitude Toward and Knowledge of Mildly Handicapped Children

Criterion Variables: Scale Scores							
Parent Communication	Selection and Use of Assessment Instruments	Record Keeping and Evaluation	Developing Goals and Objectives	Utilization of Primary Resources	Curriculum Development	Individualizing Instruction	General Knowledge
9	9	9	9	10	10	10	9
13	10	10	13	9	9	9	13
2	6	13	14	2	14	15	7
10	5	5	10	13	13	13	16
7	13	6	4	11	6	14	10
14	14	4	1	5	7	1	6
5	4	2	15	6	5	6	1
16	8	15	6	3	2	15	5
8	2		5	14	12		2
11					3		8
4							4
R .51 R^2 .26 S.E. 5.10	R .47 R^2 .22 S.E. 4.41	R .46 R^2 .21 S.E. 4.45	R .43 R^2 .18 S.E. 3.82	R .50 R^2 .25 S.E. 3.25	R .64 R^2 .41 S.E. 3.82	R .38 R^2 .14 S.E. 2.58	R .64 R^2 .41 S.E. 4.63

1 = Years Teaching Experience
2 = Sex
3 = Special Education Classroom Located in Your School Building
4 = Highest Degree Earned
5 = Grade Level
6 = Number of Courses in Special Education
7 = Exposure to MHC Within Teaching Situations
8 = Exposure to MHC Outside of Teaching Situations
9 = Teacher Knowledge about MHC
10 = Teacher Confidence About Working With MHC
11 = Teacher Comfort Concerning Working With MHC
12 = Amount of Previous Experience With MHC
13 = Teacher Knowledge About Mainstreaming Legislation
14 = Michigan Survey
15 = RGEPS Attitude Scale
16 = RGEPS Knowledge Scale