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ABSTRACT

This study explored the inservice training needs of teachers (in Taiwan) working with mentally handicapped students. Elementary (N=224) and junior high (N=171) school teachers of the retarded were surveyed concerning perceived competency levels and preferred inservice training topics and formats. Findings included: (1) both teacher groups selected the same 10 basic competencies as most important; (2) 8 of the 10 lowest rated competencies were also shared between groups; (3) both groups of teachers felt most competent in the area of guidance and least competent in the areas of "general competencies" and curriculum/instruction; (4) both groups showed consistency in their self assessments; (5) teacher sex and age were not related to competency levels; (6) teachers with junior teachers college training assessed their competencies higher than did teachers with standard college background in the area of curriculum and instruction; (7) teachers with the most experience teaching the retarded rated their competencies the highest; (8) formal inservice education formats were rated as most desirable by both groups; and (9) most desired inservice training activities were visiting other educational programs, a combination of program visitation and recreation, and workshops on instructional materials. Includes 21 references. (DB)

# INSERVICE EDUCATION NEEDS OF TEACHERS WORKING WITH THE MENTALLY RETARDED

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# INSERVICE EDUCATION NEEDS OF TEACHERS WORKING WITH THE MENTALLY RETARDED

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## ABSTRACT

The purpose of this study was to explore the inservice training needs of teachers working with mentally retarded students. The expressed relative competency levels, preferred inservice training formats, and the relationships between the expressed competency levels and the variables, namely, job status, sex, age, academic background, professional training, teaching experience in special class for the mentally retarded, teaching experience in regular class, and school location were determined in the study.

The respondents of the study consisted of 224 elementary and 171 junior high school teachers of the mentally retarded in Taiwan. The instrument for data collection was the Inservice Needs Survey for Teachers of the Mentally Retarded. The data analysis approaches included mean scores ranking, the Spearman rank correlation, *t* test, analysis of variance, and the Chi-square test.

The conclusions drawn from the study are as follows:

1. The elementary and junior high teacher groups share the same highest ten competencies related to basic abilities with which a teacher must be familiar.

2. Eight of the lowest ten ranks of the competency items are identical for both elementary and junior high teacher groups. These competency items are related to special knowledge or skills in the areas of research, resource usage, and rehabilitation.

3. In terms of competency areas, both elementary and junior high teacher groups felt most comfortable in the area of guidance ability. The area of general competencies and the area of curriculum and instruction were marked lowest, respectively, for the elementary and junior high teacher groups.

4. The elementary and junior high teacher groups have fairly consistent self-assessment in regard to the levels of competencies.

5. The variables of sex and age are not related to the expressed competency levels of both elementary and junior high teacher groups.

6. The teachers having junior teachers college background assessed their competency levels significantly higher than did the teachers

with ordinary college background with respect to the competency area of curriculum and instruction.

7. A tendency was revealed that the teachers having professional training in the department of special education, special education training in junior teachers college, or certification program of special education, generally expressed higher levels in all or some competency areas than did the teachers with no special education training.

8. The more teaching experience in special class for retarded students a teacher had, the higher competency levels he/she might self-assess.

9. Teaching experience in regular class may have a relationship to expressed competency levels but it appears to be a weak one.

10. No relationship was found between expressed competency levels and school location for the elementary teacher group. However, the junior high teachers from Taipei City assessed their competency levels significantly higher than did the junior high teachers from Taiwan Province on some competency areas. In the over-all teacher group, the teachers from Taipei City evaluated their competency levels on assessment and records significantly higher than did the teachers from Taiwan Province and Kaoshiung City.

11. The degree and certification programs, perceived as most desirable, were two formal inservice education formats by elementary and junior high school teachers working with the mentally retarded.

12. The top three desired short-term inservice training activities for both elementary and junior high teacher groups are visiting educational programs of other institutions, a combination of program visitation and recreation, and workshops on instructional materials. These short-term inservice formats are fairly related to practical operations with respect to the education of mentally retarded students.

## INTRODUCTION

The formal special education provision for mentally retarded children was initiated in Taiwan in 1962 (MOE, 1976). From then on, much more attention has been paid to the needs of educating the mentally subnormal children. Special classes, special schools, and resource rooms are becoming popular educational placements for this population in recent years. The Welfare Act of the Disabled and the Special Education Act enacted, respectively, in 1980 and 1984 are an important impetuses to provide appropriate educational opportunities for mentally retarded. Owing to the rapid expansion of special education programs for the mentally retarded students, an increasing need of teacher supply in Taiwan seems evident. Thus, the preparation of teacher manpower should not be neglected in the decision-making of educational policies.

In the process of teacher preparation, we should not only attend to quantity need, but we should also promote teacher quality in order to insure

appropriate education for the mentally retarded. Although preservice education should be emphasized for the purpose of upgrading teacher quality, the importance of inservice education to retrain and up-date teachers can not be overlooked. Mercer, Forgnone, and Beattle (1978) indicated that "no profession in the social sciences can assume that preservice education alone is sufficient for maintaining professional status" (p. 30). Egbert and Kluender (1979) also maintained that "it is not reasonable to assume that a given training period can prepare a person for a life-time in any complex profession" (p. 19). In a similar vein, Knox (1982) stated that a massive expansion of knowledge in the field of special education in recent years has increased the discrepancy between the functioning level of teachers and current "best practices". Furthermore, the turnover rate of teachers working with the mentally retarded is the highest among special education teachers in Taiwan (Tsai, 1985). It is obvious that a systematic and continuing inservice training program seems fairly important for this teacher group.

In the consideration of providing an appropriate inservice education program, an understanding of teacher training needs should be a must. From the review of literature, we could find some investigations pertaining to this issue but studies specifically focused on inservice education needs of teachers working with retarded children seem few. Studies on inservice training needs of teachers have typically emphasized the content and format of the educational program. For understanding inservice training content, Crawford, Bostrom, Navara, Zenk, and Uhlenberg (1981) conducted a study to determine the employment and training needs of rehabilitation homemaker paraprofessionals in North Dakota. They found that the most important job skills for inservice training are understanding the handicapped condition, observing and evaluating behavior, developing ways to teach, knowledge of medical concerns, and areas related to training for independent living skills such as protection of rights, appropriate sexual expression, and the use of first aid. According to the study of Knox (1982), the major inservice training needs of direct service personnel working with handicapped children in Minnesota were design and implementation of educational programs, techniques of behavior management, and evaluation of student performance. From the study of inservice needs of those working in handicapped preschool programs in New Mexico and in the El Paso Independent School District, Wachtel, Abernathy, and Stile (1983) found that identification/screening of high risk children and parent training techniques were ranked as most needed for staff development. In a survey of Nebraska administrators' perception, Grosenick and Huntze (1983) reported that the greatest inservice training needs of persons involved in direct service to behaviorally impaired

students are individual counseling and behavioral management strategies. Based on an investigation of educators serving students with severe handicaps in Oregon, Arick, Falco, and Brazeau (1989) stated that the four major categories prioritized by educators as future inservice training needs are: (1) teaching students having specific handicapping conditions, (2) teaching functional communication, (3) teaching appropriate behavior and modifying inappropriate behavior, and (4) identifying/designing appropriate curriculum materials and specific instructional programs to implement IEPs. They also found that the specific inservice priorities by educators include: (1) teaching students with the handicapping condition of autism; (2) teaching students to spontaneously interact with others, and (3) teaching students to engage in appropriate social interactions.

For understanding the inservice training needs of resource teachers working with retarded students, Davis (1982) examined the perceptions of 420 special education resource teachers serving mainly retarded pupils. He found that the most important ten areas of inservice needs are as follows: (1) individual pupil counseling skills, (2) ability to interpret formal pupil psychoeducational tests, (3) knowledge of and skill in employing a variety of methods for teaching reading, (4) ability to deal effectively with personal/professional frustrations related to position, (5) knowledge of and skill in employing methods for teaching math, (6) ability to administer formal pupil psychoeducational tests, (7) knowledge of and skill in employing a variety of pupil behavior management techniques, (8) group counseling skills, (9) developing and monitoring of IEP's, and (10) knowledge of instructional materials. Carri (1985) investigated the inservice teachers' assessed needs in behavioral disorders, mental retardation, and learning disabilities in Georgia. He found that teachers of the learning disabled and teachers of the mentally retarded shared similar views concerning competencies needed, while teachers of the behaviorally disordered differed in their ratings of competencies when compared to teachers of the mentally retarded and learning disabled.

From the above reviewed inservice training needs of teachers working with the mentally retarded or inservice needs of personnel serving other handicapping conditions, we could find that different emphases of needs seem to be revealed among various service providers. Both studies of Knox (1982) and Wachtel et al. (1983) all reported that inservice training of special educators should be based on different regional needs. Assessing inservice training needs through teacher responses, Ingersoll (1975) found that differences in responses of elementary or secondary school teachers, or between teachers of greater or lesser experience, may support the

development of differentiated inservice training programs. In addition, Crawford et al. (1981) also advocated that inservice training of rehabilitation homemaker paraprofessionals should be field-based and problem-centered. Therefore, an effective inservice education program for teachers of mentally retarded children, undoubtedly, should likewise reflect those teachers' differentiated training needs.

As to the inservice format preferences, Grosenick and Huntze (1983) reported that the high priority formats selected by direct service providers of the behaviorally impaired are salary credit, college credit, visitations, "hands on", supervisory support, observations, staff/peer support, and conference/workshops. They also found that the low priority formats of inservice training for these special educators were as follows: "make and take", teacher/child exchanges, personal contracts, brown bag, regional study groups, weekend offerings, panel discussions, and early bird. After analyzing 135 inservice models, Adams (1977) indicated that some inservice designs are: designation of specific skills to be acquired, lectures, demonstrations, videotaping, utilization of behavior modification techniques in training, role playing, and modeling. For developing a model for instructional mainstreaming of handicapped children, Adams, Striefel, Killoran, and Quintero (1987) proposed a tri-partite inservice training of needed teacher competencies. This inservice education model includes the following three types of inservice training for mainstreaming: (1) on going general skills training, (2) student specific training when the teacher knows prior to mainstreaming that a specific student will be joining his class, and (3) problem focused training which occurs after placement in response to specific needs. In the study of Davis (1982), he found that "short-term courses modules, etc., taught by university personnel" was considered to be the most effective vehicle for delivering inservice training for resource teachers of retarded pupils, whereas "workshops provided exclusively by local special education personnel" and "provision of self-study and programmed materials" were viewed as the least effective methods. From the above mentioned literature, we could understand that effective inservice training requires specific attention be directed to implementation strategies and design. On the other hand, it seems important that teacher preferences should be taken into account in the development of effective formats for delivery of inservice education.

In Taiwan, no published studies related to inservice needs of teachers working with the mentally retarded could be found at the present time. Therefore, it is worthwhile to conduct such an investigation in order to provide appropriate inservice training programs for this teacher population.

This study was designed to collect necessary data of differentiated needs and format preference of inservice education about teachers of mentally retarded children. More specifically, the study was trying to explore the following research questions:

1. What are the expressed relative competency levels of teachers working with the mentally retarded?

2. Is it consistent in regard to the competency levels as expressed by junior high and elementary school teachers of the mentally retarded?

3. What are the relationships between the expressed competency levels and the selected demographic variables of sex, age, academic background, professional training, teaching experience in special class for the mentally retarded, teaching experience in regular class, and school location?

4. What are the preferred inservice training formats for teachers of the mentally retarded?

## METHOD

Since each teacher has unique and diverse needs during his/her professional career (Allen, 1971; Lippitt & Fox, 1971; Ingersoll, 1975), it is essential to have input from the teaching faculty in the study of their differing needs in the content and format of inservice training. A combined approach of self-assessment and competency-based teacher evaluation was designed in this study for better understanding differentiated inservice needs of teachers working with the mentally ratarded. The inclusion of competency-based teacher evaluation was intended to make teacher inservice needs well reflect required teaching skill components (Peterson and Kauchak, 1982). On the other hand, the adequacy to use self-assessment for the purpose of staff development and improvement has been given ample testimony (Dubravcic, 1986). In addition, an opinion survey was also conducted in order to collect teachers' perception data in regard to inservice training formats. This section describes (1) respondents, (2) instrument, and (3) data collection and treatment.

### Respondents

A group of 76 schools having special classes for the mentally retarded, 3 special schools, 46 elementary schools, and 27 junior high schools, listed in the Directory of Special Education, Rehabilitation, and Welfare Services in

Taiwan (Wu and Chang, 1987) was identified through a systematic sampling method. Employing this sampling approach, every prefecture or municipality in Taiwan at least had one elementary and one junior high school selected. Each selected school then was asked to provide to the researcher all the names of its full time teachers who are working with mentally retarded students. A list of 510 teachers , 278 from elementary and 232 from junior high schools, was thus obtained for responding to the instrument of this study.

## Instrument

The instrument employed in the study was the Inservice Needs Survey for Teachers of the Mentally Retarded (INSTMR). The INSTMR included three major dimensions. The first dimension elicited information about the demographic characteristics of the respondents. Items were developed which related to the sex of the teacher, age, present position, academic background, professional training, years of special class teaching experience, years of regular class teaching experience, and the region in which the respondent was providing services.

The second portion of the INSTMR was the Competency Assessment Scale (CAS). The CAS consisted of 74 competency items with a 9-point rating scale. The respondents were asked to self-assess the competency level they had for each item. The rating of 1 indicates the lowest competency level and 9 is the highest. The 74 competency items were derived from the Competency Inventory for Teachers of the Mentally Retarded (CITMR) used in the study of Ho (1989). According to the study of Ho (1989), he stated that all 74 competency items were found to be needed for teachers of retarded students. Ho also pointed out that these 74 competency items were developed upon (1) information contained in the literature, (2) input from practicing teachers of the mentally retarded, (3) input from expert evaluations, and (4) a pilot study. The items could be sorted into the following five competency areas which had apparent commonality: (1) general competencies (items 1-13), (2) assessment and records (items 14-26), (3) curriculum and instruction (items 27-51), (4) guidance ability (items 52-60), and (5) interpersonal communication (items 61-74).

The third part of the INSTMR tapped preferred inservice training formats. One item provided the respondents with four types of formal or long term inservice education. Respondents were asked to check one format in which they are most interested. Another item consisted of 8 specific

short-term inservice training activities with a 5-choice Likert scale. The respondents were asked to rate those activities in terms of their own willingness to participate in professional development.

The whole INSTMR was field tested on some practicing teachers of the mentally retarded. Changes were incorporated in the instrument as a result of the pilot study.

The reliability coefficients of the CAS were determined and are shown in Table 1. The split-half reliability coefficient for the responses to 8 short-term inservice training activities was .7710 ($p < .001$). The entire study sample of 395 respondents who returned the INSTMR was included in the reliability determinations.

Table 1
Reliabilities of the CAS

| Areas | No. of Items | Split-half Reliabilities (Odd/even Method) |
|---|---|---|
| General Competencies | 13 | .8961*** |
| Assessment and Records | 13 | .9672*** |
| Curriculum and Instruction | 25 | .9617*** |
| Guidance Ability | 9 | .9550*** |
| Interpersonal Communication | 14 | .9512*** |
| Total CAS | 74 | .9882*** |

*** $p < .001$

## Data Collection and Treatment

The INSTMR was distributed to the sampled 510 teachers of the mentally retarded and returned by postage-paid mail. The respondents were asked to provide their demographic information, to self-evaluate the levels of competencies they had, and to give opinions on the inservice training formats. A follow-up letter with another copy of the INSTMR was sent to those teachers who were unable to complete and return the first copy of the INSTMR before the designated date. The final number of respondents who completed and returned the INSTMR was 395, 224 elementary and 171 junior high school teachers, representing 77.45% of the initial sample.

The data analysis approaches employed were frequency and percentage

for demographic information illustrations, mean scores ranking for research question 1, the Spearman rank correlation and $t$ test for research question 2, analysis of variance and a posteriori comparisons if needed for research question 3, and the Chi-square test as well as mean scores ranking for research question 4. Significance level of .05 was set for the purpose of statistical tests.

## RESULTS AND DISCUSSION

The results of the study are presented and discussed in this section. A total of 395 respondents completed and returned the INSTMR from which the results of the study were derived. The descriptive statistics of demographic information of the respondents were depicted by frequencies and percentages and are shown in tables 2-8. From these statistics, we could find that most respondents are female, have finished professional training in certification program of special education, have teaching experience in special class for the mentally retarded under 5 years, and are from Taiwan Province. 40.6% of the elementary teachers are between 30 and 40 years of age. More than 37% of the junior high teachers are between the age of 40 and 50. Most elementary teachers are graduates of junior teachers college (51.3%), while 43.3% of junior high teachers are graduates of teachers college. The respondents who have more than 10 years teaching experience in regular class are 38.8% and 52.0%, respectively, for elementary and junior high teacher groups. It indicates that most respondents are experienced in teaching regular students. However, a total of 28.6% of all respondents have still received no special education training. This should be a great concern for those who are responsible for professional development of teachers working with mentally retarded students.

The presentation and discussion of the results are organized according to the aforementioned research questions. First, the relative ranks of competency levels expressed by teachers of the mentally retarded are described. Secondly, the consistency in the relative ranks of competency levels as expressed by elementary and junior high teachers is presented. Third, the relationships between the expressed competency levels and the selected demographic variables are discussed, and fourth, the preferred inservice training formats for teachers of the mentally retarded are described.

Table 2
Distribution of Sex

| Present Position | Male | | Female | | No Response | | Over-All | |
|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % |
| Elementary Teacher | 49 | 21.9 | 174 | 77.7 | 1 | .4 | 224 | 100 |
| Junior High Teacher | 55 | 32.2 | 113 | 66.1 | 3 | 1.8 | 171 | 100 |
| Over-All | 104 | 26.3 | 287 | 72.7 | 4 | 1.0 | 395 | 100 |

Table 3
Distribution of Age

| Present Position | 20-29 | | 30-39 | | 40-49 | | 50-59 | | Above 60 | | No Response | | Over-All | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Elementary Teacher | 57 | 25.4 | 91 | 40.6 | 48 | 21.4 | 17 | 7.6 | 10 | 4.5 | 1 | .4 | 224 | 100 |
| Junior High Teacher | 20 | 11.7 | 53 | 31.0 | 64 | 37.4 | 24 | 14.0 | 6 | 3.5 | 4 | 2.3 | 171 | 100 |
| Over-All | 77 | 19.5 | 144 | 36.5 | 112 | 28.4 | 41 | 10.4 | 16 | 4.1 | 5 | 1.3 | 395 | 100 |

Table 4
Analysis of Academic Background

| Present Position | Graduate School | | Ordinary College | | Teachers College | | Junior Teachers College | | Ordinary Junior College | | Normal School | | Senior High School | | Others | | Over-All | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| Elementary Teacher | 1 | 4 | 26 | 11.6 | 57 | 25.4 | 115 | 51.3 | 6 | 2.7 | 3 | 1.3 | 16 | 7.1 | 0 | 0 | 224 | 100 |
| Junior High Teacher | 17 | 9.9 | 40 | 23.4 | 74 | 43.3 | 2 | 1.2 | 32 | 18.7 | 1 | .6 | 2 | 1.2 | 3 | 1.8 | 171 | 100 |
| Over-All | 18 | 4.6 | 66 | 16.7 | 131 | 33.2 | 117 | 29.6 | 38 | 9.6 | 4 | 1.0 | 18 | 4.6 | 3 | .8 | 395 | 100 |

Table 5
Analysis of Professional Training in Special Education

| Present Position | Graduate study in Special Education | | Department of Special Education | | Certification of Special Education | | Special Education Training in Junior Teachers College | | Workshops on Special Education | | No Special Education Training | | No Response | | Over-all | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % |
| Elementary Teacher | 0 | 0 | 11 | 4.9 | 123 | 54.9 | 16 | 7.1 | 2 | .9 | 69 | 30.8 | 3 | 1.3 | 224 | 100 |
| Junior High Teacher | 15 | 8.8 | 16 | 9.4 | 88 | 51.5 | 0 | 0 | 2 | 1.2 | 44 | 25.7 | 6 | 3.5 | 171 | 100 |
| Over-All | 15 | 3.8 | 27 | 6.8 | 211 | 53.4 | 16 | 4.1 | 4 | 1.0 | 113 | 28.6 | 9 | 2.3 | 395 | 100 |

Table 6
Analysis of Teaching Experience in Special Class for the Mentally Retarded

| Present Position | Under One Year | | 1-2 Years | | 3-4 Years | | 5-9 Years | | Above 10 Years | | No Response | | Over-All | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % |
| Elementary Teacher | 64 | 28.6 | 65 | 29.0 | 25 | 11.2 | 46 | 20.5 | 23 | 10.3 | 1 | .4 | 224 | 100 |
| Junior High Teacher | 23 | 13.5 | 35 | 20.5 | 35 | 20.5 | 31 | 18.1 | 47 | 27.5 | 0 | 0 | 171 | 100 |
| Over-All | 87 | 22.0 | 100 | 25.3 | 60 | 15.2 | 77 | 19.5 | 70 | 17.7 | 1 | .3 | 395 | 100 |

Table 7
Analysis of Teaching Experience in Regular Class

| Present Position | No Experience | | Under One Year | | 1-2 Years | | 3-4 Years | | 5-9 Years | | Above 10 Years | | No Response | | Over-All | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % |
| Elementary Teacher | 33 | 14.7 | 11 | 4.9 | 24 | 10.7 | 23 | 10.3 | 45 | 20.1 | 87 | 38.8 | 1 | .4 | 224 | 100 |
| Junior High Teacher | 15 | 8.8 | 9 | 5.3 | 13 | 7.6 | 13 | 7.6 | 31 | 18.1 | 89 | 52.0 | 1 | .6 | 171 | 100 |
| Over-All | 48 | 12.2 | 20 | 5.1 | 37 | 9.4 | 36 | 9.1 | 76 | 19.2 | 176 | 44.6 | 2 | .5 | 395 | 100 |

Table 8
Analysis of School Location

| Present Position | Taiwan Province | | Taipei City | | Kaoshiung City | | Fujan Province | | No Response | | Over-All | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % | *n* | % |
| Elementary Teacher | 127 | 56.7 | 37 | 16.5 | 53 | 23.7 | 3 | 1.3 | 4 | 1.8 | 224 | 100 |
| Junior High Teacher | 124 | 72.5 | 35 | 20.5 | 5 | 2.9 | 1 | .6 | 6 | 3.5 | 171 | 100 |
| Over-All | 251 | 63.5 | 72 | 18.2 | 58 | 14.7 | 4 | 1.0 | 10 | 2.5 | 395 | 100 |

## Relative Ranks of Competency Levels Expressed by Teachers of the Mentally Retarded

Using the INSTMR, a total of 74 Competency items were provided to 395 elementary and junior high school teachers of retarded children for self-evaluating their levels of professional competencies. The competency items were ranked according to their mean scores obtained from various teacher groups. The higher the mean score, the higher competency level a teacher may have. In Table 9 the rank order of expressed competency levels for the elementary teacher, junior high teacher and over-all teacher groups are displayed.

Inspection of Table 9 indicates that the top ten competency items are the same for the elementary and junior high teacher groups although the order varies within each population. These 10 competency items are as follows:

1. Understanding of teaching methods for regular students (no. 4).
2. Use of student's dialect (no. 13).
3. Establishment of student's record (no. 25).
4. Teaching the basic academic skills (no. 31).
5. Implementation of life-centered education (no. 49).
6. Using various reinforcements for getting student's response (no. 54).
7. Effective classroom management (no. 56).
8. Developing good human relations (no. 66).
9. Cooperation with colleague in teaching (no. 67).
10. Effective communication with others (no. 69).

Table 9
Rank Order of Expressed Competency Levels

| Competency Items | Elementary Teacher | | Junior High Teacher | | Over-All | |
|---|---|---|---|---|---|---|
| | Mean | Rank | Mean | Rank | Mean | Rank |
| 1.Familiarity with special education laws and regulations | 4.5540 | 73 | 4.8360 | 72 | 4.6750 | 72 |
| 2.Planning and decision making for effective learning | 5.6290 | 60 | 5.7720 | 53 | 5.7040 | 57 |
| 3.Understanding the development of retarded students | 6.1520 | 39 | 6.3860 | 13 | 6.2690 | 22 |
| 4.Understanding of teaching methods for regular students | 6.6650 | 9 | 6.6550 | 6 | 6.6600 | 7 |
| 5.Development of educational philosophy to retarded students | 6.0710 | 46 | 6.2340 | 24 | 6.1580 | 35 |
| 6.Familiarity with social welfare services for the mentally retarded | 5.1740 | 69 | 5.3100 | 66 | 5.2350 | 68 |
| 7.Presentation of research report | 5.0130 | 70 | 5.2160 | 68 | 5.1090 | 70 |
| 8.Understanding of learning principles | 5.8480 | 54 | 6.1050 | 32 | 5.9540 | 45 |
| 9.Tolerating work pressure | 6.5980 | 12 | 6.4910 | 11 | 6.5440 | 11 |
| 10.Seeking in-service training in less competent areas | 6.3210 | 24 | 6.1700 | 26 | 6.2350 | 27 |
| 11.Study of clinical teaching | 5.2630 | 67 | 5.3040 | 67 | 5.2670 | 67 |
| 12.Interpretation and application of research findings for teaching | 5.3790 | 66 | 5.5910 | 62 | 5.4830 | 64 |
| 13.Use of student's dialect | 7.2590 | 1 | 6.9880 | 1 | 7.1410 | 1 |
| 14.Development of criterion-referenced tests based on teaching objectives | 5.8710 | 52 | 6.0350 | 38 | 5.9470 | 47 |
| 15.Recording and interpretation of interactions between teacher and student | 6.2630 | 28 | 6.0880 | 34 | 6.1890 | 30 |
| 16.Selection of assessment tools | 5.9640 | 48 | 6.0180 | 39 | 5.9950 | 44 |
| 17.Control of variables affecting assessment results | 5.5800 | 62 | 5.5910 | 61 | 5.5870 | 63 |
| 18.Interpretation of assessment results | 5.9020 | 51 | 5.9360 | 42 | 5.9220 | 50 |

(Continued)

| Competency Items | Elementary Teacher | | Junior High Teacher | | Over-All | |
|---|---|---|---|---|---|---|
| | Mean | Rank | Mean | Rank | Mean | Rank |
| 19.Developing IEP based on assessment results | 5.9200 | 50 | 5.8540 | 48 | 5.8910 | 51 |
| 20.Systematic self-evaluation to improve teaching | 5.8660 | 53 | 5.8480 | 50 | 5.8540 | 53 |
| 21.Systematic assessment of student's learning | 5.9290 | 49 | 5.8540 | 47 | 5.8810 | 52 |
| 22.Using evaluation results to decide objectives, materials, and methods | 5.5710 | 63 | 5.7780 | 52 | 5.6650 | 60 |
| 23.Evaluating the effectiveness of instructional program | 5.6030 | 61 | 5.7080 | 55 | 5.6500 | 62 |
| 24.Keeping assessment and teaching information | 6.5540 | 14 | 6.2400 | 23 | 6.4000 | 14 |
| 25.Establishment of student's record | 6.6560 | 10 | 6.5960 | 8 | 6.6210 | 9 |
| 26.Use of important assessment instruments | 6.1120 | 43 | 6.2630 | 20 | 6.1720 | 33 |
| 27.Using task analysis to develop the sequence of teaching objectives | 5.7560 | 59 | 5.5960 | 60 | 5.6820 | 58 |
| 28.Writing behavioral objectives | 6.0890 | 45 | 5.9820 | 40 | 6.0360 | 43 |
| 29.Planning teaching activities to meet the developmental needs of students | 6.3930 | 20 | 6.0990 | 33 | 6.2430 | 26 |
| 30.Implementing instructional plan | 6.2590 | 30 | 6.1350 | 29 | 6.2090 | 28 |
| 31.Teaching the basic academic skills | 6.8880 | 3 | 6.7540 | 4 | 6.8110 | 4 |
| 32.Science teaching | 6.2500 | 32 | 5.5670 | 64 | 5.9340 | 48 |
| 33.Teaching social studies | 6.4150 | 17 | 6.3330 | 17 | 6.3570 | 16 |
| 34.Teaching at least one subject among music, art, and craft | 6.6560 | 11 | 5.7600 | 54 | 6.2500 | 24 |
| 35.Effective behavior management | 6.3170 | 25 | 6.0580 | 37 | 6.2010 | 29 |
| 36.Guidance of learning transfer | 6.1520 | 41 | 5.9120 | 43 | 6.0390 | 42 |
| 37.Individual teaching and guidance | 6.3660 | 22 | 6.2690 | 19 | 6.3110 | 18 |
| 38.Selection and use of needed materials | 6.4380 | 16 | 6.3390 | 16 | 6.3790 | 15 |
| 39.Making instructional media | 5.8350 | 55 | 5.6200 | 59 | 5.7450 | 55 |

(Continued)

| Competency Items | Elementary Teacher | | Junior High Teacher | | Over-All | |
|---|---|---|---|---|---|---|
| | Mean | Rank | Mean | Rank | Mean | Rank |
| 40.Use of instructional media | 6.2010 | 35 | 5.9010 | 44 | 6.0830 | 40 |
| 41.Planning recreational activities | 6.3080 | 26 | 6.2110 | 25 | 6.2820 | 20 |
| 42.Implementing speech therapy | 5.4240 | 65 | 5.3510 | 65 | 5.3810 | 65 |
| 43.Use of incidental learning to achieve objectives | 6.2410 | 34 | 6.0700 | 36 | 6.1500 | 36 |
| 44.Arranging the classroom environment to meet teaching needs | 6.3970 | 19 | 5.9360 | 41 | 6.1890 | 31 |
| 45.Implementing physical therapy | 4.3210 | 74 | 3.9590 | 74 | 4.1920 | 74 |
| 46.Implementing occupational therapy | 4.5800 | 72 | 4.5730 | 73 | 4.5850 | 73 |
| 47.Implementing physical education | 6.0000 | 47 | 5.1750 | 69 | 5.6580 | 61 |
| 48.Implementing vocational guidance | 4.8970 | 71 | 5.6260 | 58 | 5.2230 | 69 |
| 49.Implementation of life-centered education | 6.8170 | 4 | 6.8420 | 2 | 6.8200 | 3 |
| 50.Writing needed teaching materials | 6.2990 | 27 | 6.3220 | 18 | 6.2910 | 19 |
| 51.Flexible use of various teaching methods | 6.2590 | 31 | 6.1290 | 30 | 6.1840 | 32 |
| 52.Prevention of student's inappropriate behaviors | 6.1920 | 36 | 6.1400 | 27 | 6.1630 | 34 |
| 53.Management of student's behavior problem | 6.3350 | 23 | 6.3630 | 14 | 6.3500 | 17 |
| 54.Using various reinforcements for getting student's response | 6.7320 | 6 | 6.5730 | 9 | 6.6380 | 8 |
| 55.Providing guidance and counseling services | 6.2460 | 33 | 6.4040 | 12 | 6.2770 | 21 |
| 56.Effective classroom management | 6.7190 | 7 | 6.7430 | 5 | 6.7090 | 5 |
| 57.Stimulating and maintaining student's interest in learning | 6.5220 | 15 | 6.3510 | 15 | 6.4130 | 12 |
| 58.Using activities to stimulate student to initiate learning behavior | 6.1740 | 38 | 6.0760 | 35 | 6.1070 | 39 |
| 59.Developing student's attention | 6.1520 | 40 | 6.1170 | 31 | 6.1170 | 38 |
| 60.Developing the attention of a class | 6.2590 | 29 | 6.2570 | 21 | 6.2500 | 25 |

(Continued)

| Competency Items | Elementary Teacher | | Junior High Teacher | | Over-All | |
|---|---|---|---|---|---|---|
| | Mean | Rank | Mean | Rank | Mean | Rank |
| 61.Communicating educational principles and goals with parents | 6.3710 | 21 | 5.8480 | 49 | 6.1290 | 37 |
| 62.Obtaining the information of family environment, goals and needs from parents | 6.3970 | 18 | 6.1350 | 28 | 6.2650 | 23 |
| 63.Using information from parents to develop the educational plan | 6.1920 | 37 | 5.8830 | 46 | 6.0440 | 41 |
| 64.Implementing continuing parent education based on individual family needs | 5.7630 | 58 | 5.5730 | 63 | 5.6700 | 59 |
| 65.Communicating children's learning needs with parents | 6.5710 | 13 | 6.2400 | 22 | 6.4080 | 13 |
| 66.Developing good human relations | 6.7460 | 5 | 6.6080 | 7 | 6.6770 | 6 |
| 67.Cooperation with colleague in teaching | 6.9240 | 2 | 6.8250 | 3 | 6.8640 | 2 |
| 68.Use and supervision of resource persons | 5.4730 | 64 | 5.1580 | 70 | 5.3280 | 66 |
| 69.Effective communication with others | 6.6740 | 8 | 6.4910 | 10 | 6.5800 | 10 |
| 70.Seeking colleague's support in education of the mentally retarded | 6.1340 | 42 | 5.6780 | 56 | 5.9340 | 49 |
| 71.Seeking the support from people out of school in education of the mentally retarded | 5.2590 | 68 | 4.8770 | 71 | 5.1090 | 71 |
| 72.Using related resources in curriculum planning | 6.0940 | 44 | 5.7890 | 51 | 5.9490 | 46 |
| 73.Seeking assistance from related resources for individual student with handicap | 5.7720 | 57 | 5.6370 | 57 | 5.7230 | 56 |
| 74.Providing consultation for other teachers about teaching problems | 5.7860 | 56 | 5.8950 | 45 | 5.8280 | 54 |

Considering the nature of the above 10 competency items, it appears that they are quite related to basic abilities with which a teacher must be

familiar. Thus, it comes as no surprise to see respondents feeling comfortable in those competency items.

Equally interesting is a comparison of the bottom ranks of the competency items, i.e., those competencies that were felt to be lowest levels expressed by elementary and junior high school teachers of the mentally retarded. Once again there is incredible similarity. Eight of the bottom ten are identical for these two respondent groups. They are listed as the following:

1. Familiarity with special education laws and regulations (no. 1).
2. Familiarity with social welfare services for the mentally retarded (no. 6).
3. Presentation of research report (no. 7).
4. Study of clinical teaching (no. 11).
5. Implementing speech therapy (no. 42).
6. Implementing physical therapy(no. 45).
7. Implementing occupational therapy (no. 46).
8. Seeking the support from people out of school in education of the mentally retarded (no. 71).

The above 8 competencies were marked as common items among the bottom ten competencies in which elementary and junior high respondents, respectively, had the lowest knowledge or skill level. These competency items appear to be related to special knowledge or skills in which most teachers may not have sufficient training.

On the other hand, Table 10 presents the rank order of five competency areas according to respondents' expressed competency levels in these areas. Both elementary and junior high teacher groups felt most comfortable in the area of guidance ability. However, the lowest rank for elementary teachers was general competencies. The area of curriculum and instruction was also marked lowest for junior high teachers.

Table 10
Rank Order of Levels of Expressed Competency Areas

| Competency Areas | Elementary Teacher | | Junior High Teacher | | Over-All | |
|---|---|---|---|---|---|---|
| | Mean | Rank | Mean | Rank | Mean | Rank |
| General Competencies | 5.841 | 5 | 5.928 | 3 | 5.878 | 5 |
| Assessment and Records | 5.984 | 4 | 5.985 | 2 | 5.984 | 3 |
| Curriculum and Instruction | 6.062 | 3 | 5.861 | 5 | 5.975 | 4 |
| Guidance Ability | 6.374 | 1 | 6.336 | 1 | 6.358 | 1 |
| Interpersonal Communication | 6.154 | 2 | 5.903 | 4 | 6.045 | 2 |

In sum, it appears that the respondents are in considerable agreement concerning what they do not need as well as what they do need. Specifically speaking, an inverse relationship between competency level and inservice training need seems to exist. In other words, the items or areas indicated as low in competency level should be high in inservice training needs, and the competency level items or areas marked high should be ranked low in need for inservice training. The results of this part should have important implications for developing the contents of inservice education of teachers working with the mentally retarded.

## Consistency in the Competency Levels as Expressed by Elementary and Junior High Teachers

Inspection of Table 11 reveals that the correlation coefficient between the rank order of competency levels expressed by the elementary teacher group and that assessed by the junior high teacher group was .8557. It was statistically significant at the .001 level. This result indicates that the elementary and junior high teachers of the mentally retarded have fairly consistent self-assessment with respect to the rank order of competency levels. In other words, the responses of the over-all teacher group might well reflect the perceptions either from the elementary or junior high respondent group about the rank order of competency levels.

Tale 11
Rank Correlation of Expressed Competency Levels

| | Elementary Teacher | Junior High Teacher |
|---|---|---|
| *n* of Respondents | 224 | 171 |
| *n* of Items | 74 | |
| Rank Correlation coefficient | .8557 | |
| Probability | .000 | |

On the other hand, Table 12 displays the comparison of the elementary and junior high teachers on the expressed levels of various competency areas. No significant differences were found between the elementary and junior high teacher groups in regard to the expressed levels of various competency areas. These results seem to be in accordance with the finding that the elementary and junior high teachers have consistent self-assessment

for the rank order of competency levels.

Table 12
Comparison of the Elementary and Junior High Teachers on the Expressed Levels of Various Competency Areas

| Competency Areas | Elementary($n$=224) | | Junior High($n$=171) | | $t$ | $p$ |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | | |
| General Competencies | 75.9286 | 15.951 | 77.0585 | 15.950 | -.70 | .486 |
| Assessment and Records | 77.7902 | 19.147 | 77.8070 | 17.513 | -.01 | .993 |
| Curriculum and Instruction | 151.5491 | 32.357 | 146.5205 | 30.165 | 1.58 | .116 |
| Guidance Ability | 57.3661 | 12.364 | 57.0234 | 11.288 | .28 | .777 |
| Interpersonal communication | 86.1563 | 19.082 | 82.6374 | 18.834 | 1.83 | .069 |
| Over-All | 455.4107 | 91.649 | 447.4561 | 85.807 | .88 | .380 |

In sum, in view of the similarity in the results of self-assessment on competencies, it is readily apparent that elementary and junior high school teachers of retarded students may have common needs in the contents of inservice education. Thus, a combined, not separate, inservice training program should be a reasonable arrangement for both teacher populations. Nevertheless, normal universities and teachers colleges, respectively, are usually responsible for training high school and elementary school teachers in Taiwan for years. The implementation of the "integrated approach" for inservice education of both elementary and junior high school teachers working with retarded children seems to need more support from administrators and teacher trainers.

## Relationships Between the Expressed Competency Levels and the Selected Demographic Variables

The relationships between the expressed competency levels and the selected demographic variables of sex, age, academic background, professional training, teaching experience in special class for the mentally retarded, teaching experience in regular class, and school location are presented and discussed in this part. Inspection of Tables 13 and 14 reveals that no statistically significant differences were found in expressed competency levels either from the viewpoint of sex or age. These results suggest that sex and age are not related to the expressed competency levels of elementary and junior high teachers working with the mentally retarded. In other words, the knowledge of age or sex cannot be used to predict the expressed competency

levels of elementary and junior high teacher groups.

Table 13
Analysis of Variance of Expressed Competency Levels by Sex

| Competency Areas | Elementary Teacher (n=224) | | Junior High Teacher (n=171) | | Over-All (n=395) | |
|---|---|---|---|---|---|---|
| | *F* | *p* | *F* | *p* | *F* | *p* |
| General Competencies | .869 | .352 | 1.339 | .249 | .003 | .959 |
| Assessment and Records | .083 | .774 | 3.076 | .081 | .867 | .352 |
| Curriculum and Instruction | .308 | .580 | .235 | .628 | .011 | .918 |
| Guidance Ability | .085 | .770 | .468 | .495 | .076 | .783 |
| Interpersonal Communication | .277 | .599 | .212 | .646 | .028 | .868 |
| Over-All | .314 | .576 | .842 | .360 | .094 | .760 |

Table 14
Analysis of Variance of Expressed Competency Levels by Age

| Competency Areas | Elementary Teacher (n=224) | | Junior High Teacher (n=171) | | Over-All (n=395) | |
|---|---|---|---|---|---|---|
| | *F* | *p* | *F* | *p* | *F* | *p* |
| General Competencies | 1.827 | .125 | 1.003 | .408 | .932 | .445 |
| Assessment and Records | 1.686 | .154 | 1.881 | .116 | .836 | .503 |
| Curriculum and Instruction | 1.777 | .134 | 1.168 | .327 | 1.277 | .278 |
| Guidance Ability | 2.265 | .063 | .730 | .573 | 1.839 | .121 |
| Interpersonal Communication | 1.922 | .108 | 1.282 | .279 | 1.059 | .376 |
| Over-All | 2.030 | .091 | 1.207 | .310 | 1.212 | .305 |

Table 15 presents the results of analysis of variance pertaining to expressed competency levels by academic background. Analysis of variance indicated that teachers' self-expressed competency levels were statistically different on 2, 4, and 6 competency areas, respectively, for elementary, junior high, and over-all teacher groups. Post hoc analysis, using Scheffe' method revealed that the teachers having junior teachers college background evaluated their competency levels significantly higher than did the teachers with ordinary college background in over-all teacher group with regard to the competency area curriculum and instruction. This is the only one post

hoc test which shows statistically significant difference in multiple comparisons. Two reasons might be used to explain the exceptional outcomes: (1) the Scheffe' method is a conservative post hoc testing procedure that tends to result in fewer statistically significant differences in the pair-wise comparison of sample means (Hinkle, Wiersma, and Jurs, 1979), and (2) the small and/or greatly unequal samples exist in the academic background categories.

Table 15
Analysis of Variance of Expressed Competency Levels by Academic Background

| Competency Areas | Elementary Teacher ($n$=224) | | Junior High Teacher ($n$=171) | | Over-All ($n$=395) | |
|---|---|---|---|---|---|---|
| | $F$ | Scheff'e Method | $F$ | Scheff'e Method | $F$ | Scheff'e Method |
| General Competencies | 1.271 | | 2.819** | | 2.739** | |
| Assessment and Records | 2.309* | | 2.361* | | 3.235** | |
| Curriculum and Instruction | 1.903 | | 1.860 | | 3.076** | 4>2 |
| Guidance Ability | 2.698* | | 1.694 | | 3.256** | |
| Interpersonal Communication | 1.242 | | 2.482* | | 3.157** | |
| Over-All | 1.945 | | 2.440* | | 3.303** | |

Note: Academic Background: Graduate School=1, Ordinary college=2, Teachers College=3, Junior Teachers College=4, Ordinary Junior College=5, Normal School=6, Senior High School=7, Others=8
*$p$ <.05 **$p$ <.01

From inspection of Table 16, the importance of professional training in special education seems to be supported. In the over-all teacher group, the teachers having professional training in the department of special education assessed their competency levels significantly better than did the teachers with no special education training in all competency areas. The teachers with special education training in junior teachers college or for certification also expressed higher levels in most competency areas than did the teachers with no special education training. In the elementary teacher group, the teachers with special education training in junior teachers college evaluated their competency levels significantly higher than did the teachers with no special education training in all competency areas. The teachers having certification of special education also expressed higher levels in most competency areas than did the teachers with no special education training. As to the junior high teacher group, teachers graduated from department of

special education assessed their competency levels significantly higher than did the teachers with no special education training in the competency areas of general competencies, assessment and records, and over-all area. From the above mentioned results, it seems clear that there is a close relationship between professional training and expressed competency levels of teachers working with the mentally retarded.

Table 16
Analysis of Variance of Expressed Competency Levels by Professional Training

| Competency Areas | Elementary Teacher ($n$=224) | | Junior High Teacher ($n$=171) | | Over-All ($n$=395) | |
|---|---|---|---|---|---|---|
| | $F$ | Scheff'e Method | $F$ | Scheff'e Method | $F$ | Scheff'e Method |
| General Competencies | 4.182** | 4>6 | 3.695** | 2>6 | 5.899*** | 3>6,2>6 |
| Assessment and Records | 7.060*** | 3>6,4>6 | 3.529** | 2>6 | 7.574*** | 3>6,2>6,4>6 |
| Curriculum and Instruction | 6.303*** | 3>6,4>6 | 2.376 | | 6.390*** | 2>6,4>6 |
| Guidance Ability | 7.077*** | 3>6,4>6 | 1.508 | | 5.674*** | 3>6,2>6 |
| Interpersonal Communication | 4.599** | 4>6 | 2.061 | | 5.226*** | 2>6,4>6 |
| Over-All | 6.548*** | 3>6,4>6 | 2.792* | 2>6 | 7.010*** | 3>6,2>6,4>6 |

Note: Professional Training: Graduate Study in Special Education=1
Department of Special Education=2, Certification of Special Education=3, Special Education Training in Junior Teachers College=4
Workshops on Special Education=5
No Special Education Training=6
*$p$ <.05　**$p$ <.01　***$p$ <.001

Inspection of Table 17 shows that a relationship seems to exist between expressed competency levels and teaching experience in special class for the mentally retarded. In the elementary teacher group, the teachers with 5-9 years teaching experience in special class assessed their competency levels significantly higher than did the teachers with under one year teaching experience in the competency areas of assessment and records, curriculum and instruction, guidance ability, and over-all area. The teachers with above 10 years teaching experience in special class also expressed higher levels in the same competency areas than did the teachers with under one year teaching experience in the over-all teacher group. These results apparently suggest that the more teaching experience in special class for the mentally retarded a teacher had, the higher competency levels he/she might self-evaluate. These findings appear to be on the same side of Ingersoll (1975).

Table 17
Analysis of Variance of Expressed Competency Levels by Teaching Experience in Special Class for the Mentally Retarded

| Competency Areas | Elementary Teacher ($n$=224) | | Junior High Teacher ($n$=171) | | Over-All ($n$=395) | |
|---|---|---|---|---|---|---|
| | $F$ | Scheff'e Method | $F$ | Scheff'e Method | $F$ | Scheff'e Method |
| General Competencies | 1.842 | | 1.642 | | 2.779* | |
| Assessment and Records | 3.536** | 4>1 | 1.969 | | 3.507** | 5>1 |
| Curriculum and Instruction | 4.107** | 4>1 | 2.438* | | 3.698** | 5>1 |
| Guidance Ability | 5.013*** | 4>1 | 1.718 | | 3.939** | 5>1 |
| Interpersonal Communication | 2.747* | | 1.936 | | 2.161 | |
| Over-All | 3.769** | 4>1 | 2.216 | | 3.472** | 5>1 |

Note:Teaching Experience in Special Class for the Mentally Retarded: Under One Year=1, 1~2 years=2, 3~4 Years=3, 5~9 Years=4, Above 10 Years=5
*$p$ <.05 **$p$ <.01 ***$p$ <.001

Table 18 presents the results of analysis of variance with regard to expressed competency levels by teaching experience in regular class. In the elementary teacher group, teachers' self-evaluated competency levels were statistically different on all competency areas except the area of interpersonal communication. The teachers in the junior high group also expressed statistically different levels on the competency area of assessment and records. However, post hoc analysis using Scheff'e method indicated that no statistically significant differences in expressed competency levels were found in the pair-wise comparison of means from teachers with different teaching experience in regular class. Therefore, teaching experience in regular class may have a relationship to expressed competency levels but it appears to be a weak one.

Table 18
Analysis of Variance of Expressed Competency Levels by Teaching Experience in Regular Class

| Competency Areas | Elementary Teacher ($n$=224) | | Junior High Teacher ($n$=171) | | Over-All ($n$=395) | |
|---|---|---|---|---|---|---|
| | $F$ | Scheff'e Method | $F$ | Scheff'e Method | $F$ | Scheff'e Method |
| General Competencies | 2.329* | | 1.472 | | .702 | |
| Assessment and Records | 2.580* | | 3.102* | | .944 | |
| Curriculum and Instruction | 3.456** | | 1.242 | | 1.518 | |
| Guidance Ability | 2.455* | | .658 | | 1.070 | |
| Interpersonal Communication | 1.942 | | 1.336 | | .719 | |
| Over-All | 2.929* | | 1.534 | | 1.060 | |

Note: Teaching Experience in Regular Class:
No Experience=1, Under One Year=2, 1~2 Years=3, 3~4 Years=4, 5~9 Years=5, Above 10 Years=6
*$p$ <.05　　**$P$ <.01

Inspection of Table 19 indicates that no relationship was found between expressed competency levels and school location for the elementary teacher group. Analysis of variance revealed that junior high teachers' self-assessed competency levels were statistically different on all competency areas except guidance ability. However, post hoc analysis using Scheff'e method showed that the junior high teachers from Taipei City evaluated their competency levels significantly higher than did the junior high teachers from Taiwan Province on only the competency areas of assessment and records, curriculum and instruction, interpersonal communication, and over-all area. As to the over-all teacher group, it was also found that the teachers from Taipei City assessed their competency levels on assessment and records significantly higher than did the teachers from both Taiwan Province and Kaoshiung City. These findings seem to support both studies of Knox (1982) and Wachtel et al. (1983) that special educators from different regions may have different inservice training needs.

Table 19
Analysis of Variance of Expressed Competency Levels by School Location

| Competency Areas | Elementary Teacher ($n$=224) | | Junior High Teacher ($n$=171) | | Over-All ($n$=395) | |
|---|---|---|---|---|---|---|
| | $F$ | Scheff'e Method | $F$ | Scheff'e Method | $F$ | Scheff'e Method |
| General Competencies | 1.319 | | 4.086* | | 2.701 | |
| Assessment and Records | 1.345 | | 9.460*** | 2>1 | 5.811** | 2>3,2>1 |
| Curriculum and Instruction | .656 | | 5.662** | 2>1 | 2.626 | |
| Guidance Ability | .528 | | 2.017 | | .420 | |
| Interpersonal Communication | .760 | | 5.126** | 2>1 | 1.781 | |
| Over-All | .826 | | 6.026** | 2>1 | 2.875 | |

Note: School Location: Taiwan Province=1, Taipei City=2, Kaoshiung City=3,
*$p$ <.05 **$p$ <.01 ***$p$ <.001

From the above mentioned findings and discussion, it is easy to note that both sex and age are not related to teachers' expressed competency levels. Other demographic variables of academic background, professional training, teaching experience in special class for the mentally retarded, teaching experience in regular class, and school location appear to have more or less relationships with teacher's expressed competency levels. These variables should be useful for the development of differentiated inservice training programs for teachers of the mentally retarded.

## Preferred Inservice Training Formats for Teachers of the Mentally Retarded

The results of preferred formal and short-term inservice training formats are presented and discussed in this part. Inspection of Table 20 shows that the differences in the distribution of preferred formal inservice education formats were significant for both elementary ($X^2$=15.091, $p$=.002) and junior high ($X^2$=35.732, $p$=.000) teacher groups. Certification program and bachelor degree program were perceived as the two most desirable formal inservice education formats by elementary school teachers. The third desired format was master degree program for the elementary teacher group. On the other hand, a considerable high percentage (43.79%) of junior high school teachers selected master degree program as their most desirable formal inservice

format. Certification program became the second desired format for the junior high teacher group. In view of the above presented results of the preferred formal inservice education formats, it is clear that degree programs and certification program are a top priority of all respondents. The high desirability of certification program perceived by both elementary and junior high teacher groups may be due to its offering of salary credit within a short period of time. The selection of degree programs seem to depend on the academic background of a respondent. Thus, it is understandable that most junior high teachers are interested in master degree program since the majority of this teacher group already have bachelor degrees. On the other hand, the percentage (29.09%) of elementary teachers interested in bachelor degree program was higher than that of those who were interested in master degree program(25.91%). This fact appears to suggest that many elementary school teachers still have not obtained bachelor degrees.

Table 20
Responses for Formal Inservice Education Formats

| | Elementary Teacher(n=224) | | | | Junior High Teacher(n=171) | | | |
|---|---|---|---|---|---|---|---|---|
| | *n* | % | $X^2$ | *p* | *n* | % | $X^2$ | *p* |
| 1.Master Degree Program | 57 | .2591 | | | 67 | .4379 | | |
| 2.Graduate Credit Program | 31 | .1409 | 15.091 | .002 | 29 | .1895 | 35.732 | .000 |
| 3.Bachelor Degree Program | 64 | .2909 | | | 17 | .1111 | | |
| 4.Certification Program | 68 | .3091 | | | 40 | .2614 | | |
| Missing Case | 4 | | | | 18 | | | |

As to the short-term inservice training, Table 21 ranks those inservice activities by their mean scores for the elementary, junior high, and over-all respondent groups. The results of these ranked orders show considerable consistency. The top three desired activities are identical for both elementary and junior high teacher groups although the order varies within each group. These three desired inservice activity formats are visiting educational programs of other institutions, a combination of program visitation and recreation, and workshops on instructional materials. Equally clear is the consensus on least desired activities. The bottom three formats for all groups were identical. It is interesting to note that the rank order of these three formats was the same for each group. A statistically significant rank correlation coefficient of .9524 ($p$ <.01) between the ranks of short-term inservice preferences indicated by the elementary teacher group and those marked by the junior high teacher group seems to strongly support the consensus between groups on inservice activities. Therefore, it should be

feasible to use the responses of over-all teacher group to indicate the short-term inservice training preferences of either elementary or junior high school teachers. In view of the nature of top ranked activities, it would appear clear that these short-term inservice formats are quite related to the type of practical operations in regard to the education of mentally retarded students. Presumably respondents might feel that they could benefit from such inservice activities as program visiting and workshops on materials and methods. Therefore, problem solving may be the key consideration for teachers of the mentally retarded in their selections of short-term inservice training formats.

Table 21
Rank Order of Short-term Inservice Training Preferences

| Inservice Activities | Elementary Teacher | | Junior High Teacher | | Over-All | |
|---|---|---|---|---|---|---|
| | Mean | Rank | Mean | Rank | Mean | Rank |
| 1.Seminars on mental retardation | 3.897 | 7 | 3.807 | 7 | 3.858 | 7 |
| 2.Visiting educational programs of foreign contries | 3.987 | 5 | 4.041 | 4 | 4.010 | 4 |
| 3.Workshops on special topics related to mental retardation | 4.045 | 4 | 3.895 | 5 | 3.980 | 5 |
| 4.Visiting educational programs of other institutions | 4.254 | 1 | 4.152 | 1 | 4.210 | 1 |
| 5.Self-study activities | 3.960 | 6 | 3.883 | 6 | 3.927 | 6 |
| 6.A combination of program visitation and recreation | 4.138 | 3 | 4.117 | 2 | 4.129 | 3 |
| 7.International conferences on mental retardation | 3.625 | 8 | 3.491 | 8 | 3.567 | 8 |
| 8.Workshops on instructional materials | 4.223 | 2 | 4.099 | 3 | 4.170 | 2 |

# CONCLUSIONS AND RECOMMENDATIONS

## Conclusions

The data on levels of competencies, needs of inservice training formats, and demographic information of 224 elementary and 171 junior high school

teachers of the mentally retarded were collected and statistically analyzed in the study. From the section of results and discussion, several conclusions could be derived as follows:

1. The elementary and junior high teacher groups share the same highest ten competency items which are as follows: Understanding of teaching methods for regular students, use of student's dialect, establishment of student's record, teaching the basic academic skills, implementation of life-centered education, using various reinforcements for getting student's response, effective classroom management, developing good human relations, cooperation with colleague in teaching, and effective communication with others. These items are quite related to basic abilities with which a teacher must be familiar.

2. Eight of the lowest ten ranks of the competency items are identical for both elementary and junior high teacher groups. These items are familiarity with special education laws and regulations, familiarity with social welfare services for the mentally retarded, presentation of research report, study of clinical teaching, implementing speech therapy, implementing physical therapy, implementing occupational therapy, and seeking the support from people out of school in education of the mentally retarded. These competency items are related to special knowledge or skills in which most teachers may not have sufficient training.

3. In terms of competency areas, both elementary and junior high teacher groups felt most comfortable in the area of guidance ability. The area of general competencies and the area of curriculum and instruction were marked lowest, respectively, for the elementary and junior high teacher groups.

4. The elementary and junior high teacher groups have fairly consistent self-assessment in regard to the levels of competencies.

5. The variables of sex and age are not related to the expressed competency levels of both elementary and junior high teacher groups.

6. The teachers having junior teachers college background assessed their competency levels significantly higher than did the teachers with ordinary college background with respect to the competency area of curriculum and instruction.

7. A tendency was revealed that the teachers having professional training in the department of special education, special education training in junior teachers college, or certification program of special education, generally expressed higher levels in all or some competency areas than did the teachers with no special education training.

8. The more teaching experience in special class for retarded students a teacher had, the higher competency levels he/she might self-assess.

9. Teaching experience in regular class may have a relationship to expressed competency levels but it appears to be a weak one.

10. No relationship was found between expressed competency levels and

school location for the elementary teacher group. However, the junior high teachers from Taipei City assessed their competency levels significantly higher than did the junior high teachers from Taiwan Province on some competency areas. In the over-all teacher group, the teachers from Taipei City evaluated their competency levels on assessment and records significantly higher than did the teachers from Taiwan Province and Kaoshiung City.

11. The degree and certification programs were perceived as the two most desirable formal inservice education formats by elementary and junior high school teachers working with the mentally retarded.

12. The top three desired short-term inservice training activities for both elementary and junior high teacher groups are visiting educational programs of other institutions, a combination of program visitation and recreation, and workshops on instructional materials. These short-term inservice formats are fairly related to practical operations with respect to the education of mentally retarded students.

## Recommendations

In light of the findings and the possible limitations of this study, the following recommendations are made for inservice education of teachers working with the mentally retarded and future research:

1. Since elementary and junior high teachers of the mentally retarded are not comfortable with some special knowledge or skills related to the areas of research, resource usage, and rehabilitation, it is reasonable to suggest that these special competencies should be emphasized in the contents of inservice training for this teacher population. As to the competency areas, attention should be paid to the area of general competencies and the area of curriculum and instruction, respectively, for inservice education of the elementary and junior high teacher groups.

2. Because elementary and junior high teachers of the mentally retarded may have common needs in the contents of inservice training, a "combined" or "integrated", not separate, inservice education program should be a reasonable arrangement for both teacher populations.

3. Since the demographic factors of academic background, professional training, teaching experience in special class for the mentally retarded, teaching experience in regular class, and school location may have more or less relationships with teacher's expressed competency levels, a differentiated inservice training program for teachers of the mentally retarded seems to be warranted. Thus, teachers of the mentally retarded with such backgrounds as ordinary college graduates, no special education training, and less teaching experience should be given priority to take part in inservice education

activities. The educational administrators and teacher trainers of Taiwan Province, Taipei City, and Kaoshiung City should also pay attention to the differences in teachers' self-evaluated competency levels among teachers from different school locations. Therefore, providing balanced opportunities of inservice training for teachers of the mentally retarded may be necessary in order to help them get an adequate development in professional competencies regardless of where they are working.

4. In the consideration of formal inservice education formats for elementary and junior high teachers of the mentally retarded, the degree and certification programs are the two most desirable options. As to the short-term inservice training, it is encouraged to develop programs which can satisfy the practical needs of teachers in teaching mentally retarded students.

5. Future research using those respondents who are from social welfare institutions should be undertaken in order to understand inservice education needs of that population.

6. Research should be undertaken using different approaches such as peer review, teacher competency testing, teacher interviews, and classroom observation that measure the levels of competencies a teacher may have in order to determine the concurrent validity of the Competency Assessment Scale.

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# 啓智教育教師在職進修需求之研究

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## 摘 要

本研究之目的，乃在探討啓智教育教師在職訓練之需求狀況。教師自陳的相對專業能力水準、喜愛的在職訓練方式，以及自陳專業能力水準和現職、性別、年齡、最高學歷、專業訓練、啓智班教學年資、普通班教學年資、與學校轄屬的關係，皆在本研究中加以探討。

對本研究的調查工作作回應的有臺灣地區224名國小與171名國中啓智教育教師。蒐集資料所用的研究工具爲啓智教育教師專業能力及進修需求調查問卷。資料分析所採用的方法包括平均數的排序、史皮爾曼等級相關，$t$ 考驗、變異數分析、以及卡方考驗。

從本研究所獲致的結論有下列幾方面：

1.國小與國中教師在自陳的十項水準最高的專業能力是相同的。這些專業能力皆與教師必須熟稔的基本能力有關。

2.國小與國中教師在自陳的十項水準最低的專業能力項目中有八項是相同的。這些專業能力項目和研究、資源運用、及復健領域的特殊知識或技能有關。

3.就專業能力的領域而言，國小與國中教師皆對輔導能力這一領域最感自在。而一般專業能力領域和課程與教學領域，卻分別是國小與國中教師自認爲能力最低的所在。

4.國小與國中教師在專業能力水準的自我評價方面，其結果是相當一致的。

5.國小與國中教師自陳的專業能力水準和其性別及年齡變項無關。

6.在課程與教學這一專業能力領域方面，師專畢業的教師對他們專業能力水準的評價顯著高於一般大學畢業的教師。

7.受過特殊教育系、師專特殊教育組、或特殊教育專業學分訓練的教師，在全部或某些專業能力領域上，一般要比沒受過特殊教育專業訓練的教師，有自陳較高能力水準的趨勢。

8.教師具有較長的啓智班教學年資者，其在專業能力水準的自我評價上也較高。

9.普通班教學年資可能與自陳的專業能力水準有關，不過此一關係似乎微弱。

10.在國小教師方面，自陳的專業能力水準與學校轄屬並無關係。然而，台北市的國中教師在某些專業能力領域方面，對彼等能力水準的評價，要比台灣省的國中教師明顯的爲高。若將國小與國中教師合併而言，台北市的教師對其評量與記錄專業能力水準的評價，顯著高於台灣省與高雄市的教師。

11.國小與國中啓智教育教師皆認爲特殊教育學位與專業學分之修習是最好的兩項正規進修方式。

12.國小與國中教師最想參與的三項短期進修活動是參觀其他學校或機構啓智教育活動、國內啓智教育參觀與旅遊合併安排之活動、及啓智教育相關教材之研習。這些短期的進修方式與啓智教育的實際運作有十分密切的關係。

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