

Special Educators' perceptions on competencies for education of students with visual impairments and additional handicaps

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As Sacks(2003) stated, “educating students who are visually impaired in the 21st century is a complex task.” The Republic of Korea is faced with diverse individuals who need high-quality service delivery. With increased numbers of students with multiple disabilities in special schools for the blind, there has been increasing interest among teachers of students with visual impairments. It is estimated that 50 to 60 percent of children who are blind or visually impaired have additional disabilities(Chen,1999; Holbrook, 1995; Ferrell et al., 1998).

This finding is consistent in this country. Teachers of children who are blind or visually impaired therefore have the additional challenges of multiple physical and cognitive disabilities in their children. Unfortunately, it is not clear what teachers should have

abilities to educate students with multiple disabilities and visual impairments (MDVI). There is an agreement that special education teachers need to aware and confirm their competencies, that is, knowledge and skills.

The purpose of this study was to investigate important knowledge and skills for special education teachers of students with visual impairments as qualification competencies in South Korea. The research draws upon the perceptions on CEC knowledge and skill base of special educators on their competencies for education of students with MDVI. It also aims to give desirable ways of developing human resource in special schools for the blind in South Korea.

Methods

In this study, of the 101 participants aged 28 to 60 years old, 51(50.5%) were males and 50(49.5%) were females. Their average age was 40.6 years old. All of them had over three years of teaching experience in special schools for the blind. Their average teaching experience was 11years 6months. An analysis of the participants' disabilities showed that 30(29.7%) had visual impairment and 71(70.3%) had no any handicap. All subjects were working with students with visual impairments and multiple disabilities as special teachers in schools for the blind.

CEC knowledge and skill Base for All Beginning Special Education Teachers of Students with Visual Impairment was used to identify important competencies in South Korea. Ratings in each item are made on a scale of 1 to 5. Each number indicates necessity of an item as follows: (a) 1 (very unnecessary), (b) 2 (unnecessary), (c) 3 (average), (d) 4 (necessary), and (e) 5 (very necessary). In making each rating, the base requires the subjects to make sure whether each item is necessary in working with students with visual impairments in their schools.

In order to identify which knowledge or skills are important, descriptive statistics, that is, means and standard deviations were calculated by using the SPSS package. By using factor analysis, the base has revised to give information about competencies for special teachers of students with visual impairments in Korea. In order to examine reliability and

validity of the new base, a correlational research design was used to obtain correlation coefficients.

Results

The purpose of this study was to investigate Korean teachers' perceptions of competencies. This study was implemented by using the instrument to identify knowledge and skills for teachers of students with MDVI. Table 1 indicates the means and standard deviations of factors and items. The mean of the total score is 4.08 with a standard deviation of .54. The mean scores among factors ranged 3.67(SD=.86) to 4.28(SD=.57).

Table 1
Means and Standard Deviations of CEC Knowledge and Skill Base

factor (M(SD))		ID	Knowledge/skill	M(SD)
Foundations	3.74 (.60)	VI1K1	Federal entitlements that provide specialized equipment and materials for individuals with visual impairments.	4.21(.84)
		VI1K2	Historical foundations of education of individuals with visual impairments.	3.24(.89)
		VI1K3	Educational definitions, identification criteria, labeling issues, and incidence and prevalence figures for individuals with visual impairments.	3.60(.94)
		VI1K4	Basic terminology related to the structure and function of the human visual system.	3.67(.88)
		VI1K5	Basic terminology related to diseases and disorders of the human visual system.	3.90(.78)
		VI1K6	Issues and trends in special education and the field of visual impairment.	3.84(.73)
Development and Characteristics of Learners	4.10 (.66)	VI2K1	Development of the human visual system.	3.80(.88)
		VI2K2	Development of secondary senses when vision is impaired.	4.22(.74)
		VI2K3	Effects of visual impairment on development.	4.22(.88)

		VI2K4	Impact of visual impairment on learning and experience.	4.30(.92)
		VI2K5	Psychosocial aspects of visual impairment.	4.28(.86)
		VI2K6	Effects of medications on the visual system.	3.81(.95)
Individual Learning Differences	4.21 (.71)	VI3K1	Effects of visual impairment on the family and the reciprocal impact on the individual's self-esteem.	4.18(.89)
		VI3K2	Impact of additional exceptionalities on individuals with visual impairments.	4.23(.94)
		VI3K3	Attitudes and actions of teachers that affect the behaviors of individuals with visual impairments.	4.24(.84)
Instructional Strategies	4.28 (.57)	VI4K1	Strategies for teaching Braille reading and writing.	4.58(.86)
		VI4K2	Strategies for teaching handwriting to individuals with low vision.	4.44(.88)
		VI4K3	Strategies for teaching signature writing to individuals who are blind.	4.02(.84)
		VI4K4	Strategies for teaching listening and compensatory auditory skills.	4.06(.96)
		VI4K5	Strategies for teaching typing and keyboarding skills.	4.41(.96)
		VI4K6	Strategies for teaching technology skills to individuals with visual impairments.	4.14(.86)
		VI4K7	Strategies for teaching use of the abacus, talking calculator, tactile graphics, and adapted science equipment.	4.13(.98)
		VI4K8	Strategies for teaching basic concepts to individuals with visual impairments.	4.27(.89)
		VI4K9	Strategies for teaching visual efficiency skills and use of print adaptations, optical devices, and non-optical devices.	4.28(.79)
		VI4K10	Strategies for teaching organization and study skills to individuals with visual impairments.	4.10(.78)
		VI4K11	Strategies to prepare individuals for structured pre-cane orientation and mobility assessment and instruction.	4.55(.70)

		VI4K12	Strategies for teaching tactual perceptual skills to individuals with visual impairments.	4.49(.70)
		VI4K13	Strategies for teaching human sexuality to individuals with visual impairments.	4.39(.71)
		VI4K14	Strategies for teaching adapted physical and recreational skills to individuals with visual impairments.	4.20(.79)
		VI4K15	Strategies for teaching social, daily living, and functional life skills to individuals with visual impairments.	4.50(.72)
		VI4K16	Strategies for teaching career-vocational skills and providing vocational counseling for individuals with visual impairments.	4.50(.78)
		VI4K17	Strategies for promoting self-advocacy in individuals with visual impairments.	4.25(.75)
		VI4K18	Techniques for modifying instructional methods and materials for individuals with visual impairments.	4.19(.92)
		VI4K19	Strategies to prepare students with progressive eye conditions to achieve a positive transition to alternative skills.	4.33(.80)
		VI4S1	Teach individuals with visual impairments to use thinking, problem-solving, and other cognitive strategies.	4.25(.77)
		VI4S2	Prepare adapted or modified materials in Braille, accessible print, and other formats.	4.26(.96)
		VI4S3	Transcribe, proofread, and interline materials in contracted literary and Nemeth Braille codes.	3.96(.96)
		VI4S4	Use Braillewriter, slate and stylus, and computer technology to produce Braille materials.	4.22(.83)
		VI4S5	Prepare individuals with visual impairments to access information and services from the community.	4.17(.87)
Learning Environments	4.03 (.64)	VI5K1	Roles of paraeducators who work directly with individuals with visual impairments	3.90(.94)

Environments and Social Interactions		VI5K2	Role models with visual impairments and their importance.	3.82(.94)
		VI5S1	Enhance instruction for individuals with visual impairments through modification of the environment.	4.15(.81)
		VI5S2	Design multisensory learning environments that encourage active participation by individuals with visual impairments in group and individual activities.	4.13(.80)
		VI5S3	Create learning environments that encourage self-advocacy and independence for individuals with visual impairments.	4.14(.92)
Communication	4.02 (.81)	VI6K1	Strategies for teaching alternatives to nonverbal communication.	3.74(1.10)
		VI6S1	Prepare individuals with visual impairments to respond constructively to societal attitudes and actions.	4.30(1.01)
Instructional Planning	4.19 (.63)	VI7K1	Relationships among assessment, individualized education plan development, and placement as they affect vision-related services.	4.02(.82)
		VI7K2	Model programs for individuals with visual impairments.	4.03(.93)
		VI7S1	Select and use technologies to accomplish instructional objectives for individuals with visual impairments.	4.13(.90)
		VI7S2	Sequence, implement, and evaluate learning objectives based on the expanded core curriculum for individuals with visual impairments.	4.30(.83)
		VI7S3	Obtain and organize special materials to implement instructional goals for individuals with visual impairments.	4.27(.80)
Assessment	3.93 (.63)	VI8K1	Specialized terminology used in assessing individuals with visual impairments.	3.71(.85)
		VI8K2	Ethical considerations, laws, and policies for assessment of individuals with visual impairments	3.85(.84)
		VI8K3	Specialized policies on referral and placement procedures for individuals with visual impairments.	3.82(.90)

		VI8K4	Specialized procedures for screening, prereferral, referral, and identification of individuals with visual impairments.	3.91(.84)
		VI8K5	Alternative assessment techniques for individuals with visual impairments.	4.02(.80)
		VI8K6	Interpretation and application of scores from assessments of individuals with visual impairments.	3.94(.81)
		VI8S1	Interpret eye reports and other vision-related diagnostic information.	3.73(.82)
		VI8S2	Use disability-specific assessment instruments.	4.19(.72)
		VI8S3	Adapt and use assessment procedures when evaluating individuals with visual impairments.	4.19(.83)
		VI8S4	Maintain disability-related records for individuals with visual impairments.	3.91(.85)
		VI8S5	Gather background information and family history related to the individual's visual Status.	3.86(.86)
		VI8S6	Interpret and use assessment data for instructional planning with individuals with visual impairments.	4.06(.75)
Professional and Ethical Practice	3.67 (.86)	VI9K1	Organizations and publications relevant to the field of visual impairment.	3.60(.93)
		VI9S2	Participate in the activities of professional organizations in the field of visual impairment.	3.98(.85)
Collaboration	3.95 (.70)	VI10K1	Strategies for assisting families and other team members in planning appropriate transitions for individuals with visual impairments.	4.06(.88)
		VI10K2	Services, networks, publications for and organizations of individuals with visual impairments.	3.91(.80)
		VI10S1	Help families and other team members understand the impact of a visual impairment on learning and experience.	3.98(.85)

		VI10S2	Structure and supervise the activities of paraeducators and tutors who work with individuals with visual impairments.	3.86(.86)
Total				4.08(.54)

After using factor analysis, the revised base is consisted of four factors: (a) Foundations, (b) Individual Learning Differences, (c) Instruction, and (d) Learning and Assessment (see Table 2). It is consisted of 61 items(44 knowledge and 17 skill items). The total number of items in the Foundation factor was 5 items; in the Individual Learning Differences factor, 8 items; in the Instruction factor, 24 items; and in the Learning and Assessment factor, 24 items.

Table 2
Four Factors and their Items

Factor	standard	No. of items	Items
Foundations	knowledge	5	VI1K2, VI1K3, VI1K5, VI1K6, VI2K1
	skill	0	-
Individual Learning Differences	knowledge	8	VI2K3, VI2K4, VI2K5, VI2K6, VI3K2, VI3K3, VI4K18, VI4K19
	skill	0	-
Instruction	knowledge	15	VI1K1, VI3K1, VI4K1, VI4K2, VI4K4, VI4K5, VI4K6, VI4K7, VI4K8, VIK9, VI4K11, VI4K12, VI4K15, VI4K16, VI4K17
	skill	9	VI4S1, VI4S2, VI4S3, VI4S4, VI4S5, VI6S1, VI7S1, VI7S3, VI8S3
Learning & Assessment	knowledge	16	VI2K2, VI4K3, VI5K1, VI5K2, VI6K1, VI7K1, VI7K2, VI8K1, VI8K2, VI8K3, VI8K4, VI8K5, VI8K6, VI9K1, VI10K1, VI10K2
	Skill	8	VI5S2, VI8S1, VI8S4, VI8S5, VI8S6, VI9S2, VI10S1, VI10S2

In order to investigate the reliability of the revised base, internal consistency reliability coefficients were obtained. The coefficients ranged from .88 to .96 across factors. High internal consistency coefficients were found across the factors as follows: (a) .96 on the Instruction, (b) .96 on the Learning and Assessment, (c) .91 on the Individual Learning Differences, and (d) .88 on the Foundations.

In the item-total score procedure, Pearson product-moment correlation coefficients were obtained among each item, factor and the total score. Table 3 indicates item-total correlations of the revised base scores. Cells were shaded to indicate items which are included each factor. All of item scores correlated with each factor at the .001 level. As shown in Table 4, the total score had highly positive relationships with the Foundations($r=.82$), the Individual Learning Differences($r=.88$), the Instruction($r=.86$) and the Learning and Assessment($r=.90$) factors. These four correlations were significantly high at the .001 level. Among factors, the Foundations factor score also correlated highly with the Individual Learning Differences($r=.62$), the Instruction($r=.53$) and the Learning and Assessment($r=.90$) factors. The Individual Learning Differences factor score also correlated moderately with the Instruction($r=.72$) and the Learning and Assessment($r=.69$) factors. The Instruction factor score also correlated moderately with the Learning and Assessment factor($r=.76$).

Table 3
Intercorrelations among the Revised Base Scores

Item	Instruction	Learning & Assessment	Individual Learning Differences	Foundations	Total
VI1K1	.67***	.43***	.47***	.48***	.59***
VI3K1	.61***	.47***	.56***	.32***	.56***
VI4K1	.68***	.46***	.50***	.37***	.58***
VI4K2	.75***	.57***	.46***	.38***	.62***
VI4K4	.61***	.48***	.40***	.15	.47***
VI4K5	.71***	.48***	.53***	.28**	.57***
VI4K6	.70***	.44***	.44***	.39***	.56***

VI4K7	.61***	.47***	.51***	.21*	.52***
VI4K8	.70***	.57***	.59***	.38***	.65***
VI4K9	.72***	.49***	.50***	.42***	.61***
VI4K11	.72***	.58***	.61***	.50***	.69***
VI4K12	.74***	.54***	.53***	.34**	.62***
VI4K15	.72***	.50***	.58***	.39***	.63***
VI4K16	.79***	.47***	.47***	.37***	.60***
VI4K17	.71***	.59***	.58***	.45***	.67***
VI4S1	.68***	.60***	.42***	.31**	.57***
VI4S2	.67***	.54***	.34**	.34**	.54***
VI4S3	.70***	.57***	.44***	.40***	.60***
VI4S4	.78***	.65***	.48***	.42***	.67***
VI4S5	.67***	.58***	.42***	.38***	.59***
VI6S1	.58***	.43***	.44***	.26**	.49***
VI7S1	.66***	.53***	.59***	.46***	.64***
VI7S3	.75***	.52***	.57***	.47***	.66***
VI8S3	.73***	.63***	.53***	.53***	.69***
VI2K2	.54***	.68***	.56***	.51***	.66***
VI4K3	.58***	.63***	.41***	.33***	.56***
VI5K1	.43***	.65***	.54***	.49***	.61***
VI5K2	.44***	.58***	.41***	.39***	.53***
VI5S2	.61***	.73***	.56***	.46***	.68***
VI6K1	.34***	.59***	.38***	.38***	.49***
VI7K1	.50***	.72***	.50***	.42***	.62***
VI7K2	.47***	.54***	.48***	.28**	.51***
VI8K1	.45***	.69***	.52***	.38***	.59***
VI8K2	.60***	.77***	.54***	.52***	.70***
VI8K3	.55***	.81***	.56***	.64***	.74***
VI8K4	.58***	.77***	.60***	.59***	.73***

Item	Instruction	Learning Assessment & Individual Learning Differences	Foundations	Total	
VI8K5	.56***	.78***	.51***	.54***	.69***
VI8K6	.55***	.73***	.54***	.45***	.65***
VI8S1	.52***	.71***	.54***	.58***	.68***
VI8S4	.67***	.80***	.52***	.59***	.74***
VI8S5	.68***	.78***	.50***	.46***	.70***
VI8S6	.61***	.76***	.48***	.50***	.67***
VI9K1	.44***	.70***	.38***	.54***	.60***
VI9S2	.53***	.74***	.41***	.59***	.65***
VI10K1	.61***	.73***	.38***	.54***	.60***
VI10K2	.59***	.79***	.58***	.51***	.71***
VI10S1	.68***	.80***	.53***	.47***	.71***
VI10S2	.56***	.75***	.51***	.43***	.65***
VI2K3	.50***	.52***	.80***	.58***	.70***
VI2K4	.48***	.45***	.79***	.46***	.64***
VI2K5	.54***	.47***	.80***	.50***	.67***
VI2K6	.50***	.53***	.71***	.44***	.63***
VI3K2	.57***	.56***	.72***	.48***	.68***
VI3K3	.57***	.53***	.76***	.48***	.68***
VI4K18	.56***	.51***	.70***	.40***	.63***
VI4K19	.63***	.57***	.70***	.37***	.65***
VI1K2	.44***	.48***	.41***	.79***	.62***
VI1K3	.32***	.38***	.41***	.76***	.55***
VI1K5	.46***	.56***	.53***	.72***	.66***
VI1K6	.40***	.52***	.54***	.76***	.65***
VI2K1	.43***	.61***	.52***	.79***	.68***

* p < .05 ** p < .01 *** p < .001

Table 4
Factor-Total Correlations

Factor	Foundations	Individual Learning Differences	Instruction	Learning & Assessment	Total
Foundations					
Individual Learning Differences	.62***				
Instruction	.53***	.72***			
Learning & Assessment	.66***	.69***	.76***		
Total	.82***	.88***	.86***	.90***	

*** p < .001

Conclusions

This study was designed to describe the competencies of persons serving students with visual impairments and additional handicaps. Special education teachers in schools for the blind perceived that CEC knowledge and skill Base for All Beginning Special Education Teachers of Students with Visual Impairment included important knowledge and skills. However, it was found that 8 items were not important to them. The revised base(61 items) is consisted of four factors (foundations, individual learning differences, instruction, learning and assessment).

There is a national shortage of university trained and certified vision teachers in South Korea. This study raises issues on how human resource development will be implemented to achieve equality in education of students with MDVI. The university program should prepare individuals to develop the competencies for the provision of comprehensive vision services to students with visual impairments and additional handicaps. There continues to be a need for more studies to develop a model curriculum preparing the special education teachers for students with visual impairments at the undergraduate or graduate levels.

References

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