ENVIRONMENTAL AWARENESS AS A DISTINGUISHING FACTOR THAT DIFFERENTIATES SPECIAL EDUCATION STUDENTS FROM THEIR REGULAR EDUCATION PEERS

Thesis

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Deborah Broikou

State University of New York

College at Brockport

Brockport, New York

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SUBMITTED BY:

Deborah Brackin — 8/4/95
Candidate — Date

APPROVED BY:

Gerard 2 Begy — 8/4/95
Thesis Advisor — Date

Arthur E. Smith — 8/6/95
Second Faculty Reader — Date

Patricia E. Baker — 8-7-95
Director of Graduate Studies — Date

Abstract

The purpose of this study was to distinguish the differences between special education and regular education students regarding their awareness of environmental changes in the classroom.

The subjects in this study were from a suburban school district in New York State. Of the sixteen students involved, eight were from a self-contained special education first grade class. The other eight students were randomly selected from a regular education first grade class.

Alterations were made to the classroom environment (twice a week for four weeks). The days of the week and the alterations were staggered to avoid alerting the students to the changes. On the days that changes were made, the students were asked if they had noticed anything different about the classroom. Their yes or no responses were charted. At the completion of the study, the students' responses were converted into percentages. The findings indicated that the regular education students outperformed the special education students. Based on the results, environmental awareness proved to be a distinguishing factor that differentiates special education students from regular education students.

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Chapter I

Statement of the Problem

Purpose

The purpose of this study was to distinguish the differences between special education and regular education students in terms of their awareness of environmental changes in the classroom.

Question to be Answered

Is environmental awareness a distinguishing factor that differentiates special education students from regular education students?

Need for the Study

Special education programs are designed to meet the individual needs of students classified with handicapping conditions. Since a higher priority is placed on grouping students according to age rather than need, it is beneficial to become familiar with the ways children perform academically, interact socially, behave appropriately, and the ways they differ from their nondisabled peers. What makes them operate the way they do?

The classroom environment needs to have an abundance of materials and manipulatives to stimulate and enhance learning. Such as books, games, building blocks, and toys. The students need to be able to interact confidently and comfortably with their environment as well.

This study examined the ways in which students perceived their surroundings.

Definition of Terms

Environmental Awareness - Conscious knowledge of immediate surroundings.

Special Education - A continuum of services provided to students classified as having handicapping conditions.

Learning Disabled (LD) - These students have a disability in receiving, organizing or expressing information. They may have difficulty listening, thinking, speaking, reading, writing, or doing arithmetic and this results in a severe discrepancy between school achievement and the expected level of achievement. A learning disability is not primarily due to a physical, mental, or emotional handicap or to environmental, cultural or economic factors (New York State Education Department, 1984).

Emotionally Disturbed (ED) - Such students may have behavior difficulties over a long period of time and to such a degree that they are unable to do well in school.

The reason the student is not doing well in school cannot be explained by intellectual, sensory or health factors. The student may be unable to build satisfactory relationships, may be generally unhappy or develop physical symptoms or fears associated with his or her school or personal problems (New York State Education Department, 1984).

Mentally Retarded (MR) - These students learn at a slower rate because of a significantly lower level of intelligence. They usually have delayed language and/or motor development and seem unable to learn new skills as quickly as those of the same age group (New York State Education Department, 1984).

Limitation of the Study

The small number of special education and regular education students may have hindered the results of this study.

Chapter II

Review of the Literature

Purpose

The purpose of this study was to distinguish the differences between special education and regular education students regarding their awareness of environmental changes in the classroom.

Special education students have been compared academically, behaviorally, and socially to their regular education peers. The outcomes of the numerous studies in these areas showed that special education students displayed poor academic achievement, behaved inappropriately, and socialized negatively.

Academic

Cognitive style has been defined as "the way individuals structure stimuli so that the world takes on psychological meaning" (Bayliss & Livesey, 1985, p.326 quoting Blackman & Goldstein, 1982, p.106). The following four studies examined the cognitive styles of handicapped students and their nonhandicapped peers.

Shinn-Strieker (1986) set out to determine whether cognitive style operated independently of cognitive functioning. Children ranging in intellectual ability from normal to Educable Mentally Retarded (EMR) were given a battery of neuropsychological tests. The results indicated that cognitive learning

patterns occur at all levels and separate learning styles were common to all children.

Cherkes-Julkowski, Gerter, and Norlander (1986) investigated the ability of LD, slow learners, and average children to adapt different strategies to different stimuli. The researchers found that there were differences among the strategy usage of the three diagnostic categories and "...that there is no single 'good strategy' either for all kinds of stimuli or for all types of learners" (Cherkes-Julkowski, Gertner, & Norlander, 1986, p.444).

Bayliss and Livesey (1985) examined the differences in cognitive strategies used by two subgroups of dyslexics (dysphonetics and dyseidetics) and normal children. The two dyslexic subgroups differed in their cognitive strategies in visual sequential memory tasks. Dysphonetics processed spatially for serial/spatial information while dyseidetics processed serially for the same information. Normal readers displayed similar ranges of cognitive strategies. All groups showed strong strategy preferences and inflexibility for switching strategies.

Cotugno (1987) compared the cognitive control functioning of hyperactive LD (HLD), nonhyperactive LD (NHLD), and nonlearning disabled children. In general, HLD and NHLD children processed information less efficiently than their nonlearning disabled peers. HLD children proved to be more narrow and restricted in scanning information and more distracted by contradictory and aggressive information in their environment.

The results of the previous studies concluded that handicapped students displayed deficits in cognitive functioning. Short-term memory, which plays a central role in normal cognitive functioning, is the focus of the next three studies.

In their study, Cermak, Goldberg, Cermak, and Drake (1980) used the Peterson and Peterson distractor technique to test the short-term retention abilities of three groups of learning disabled boys and a control group of their nonhandicapped peers. Cermak, et al. found that none of the three LD groups performed significantly below their normal peers. Thus, the LD children's use of language for storing and analyzing verbal information was sufficient.

Siegel and Linder (1984) studied the short-term memory processes in children 7 to 13 years of age with specific reading disabilities, children with specific arithmetic disabilities, and children who were achieving normally in school. Their study was based on two hypotheses: (1) phonemic coding was a characteristic of poor readers 7 to 13 years of age and (2) short-term memory difficulties were not limited to visual stimuli, but would also be present in auditory mode.

The children participating in the study were individually administered visual-written, visual-oral, and auditory-written tasks. Siegal and Linder concluded that:

> At the early stages of reading and arithmetic acquisition, children with learning disabilities showed insensitivity to intralist phonemic similarity, presumably because of difficulty with the speech-based coding system that is part of short-term memory. However, children with learning disabilities did show sensitivity to intralist phonemic similarity at later ages (Siegel & Linder, 1984. p.206).

Normally achieving children in contrast showed sensitivity to phonological tasks in early stages of development. Phonemic codes in short-term memory did develop in children with learning disabilities, but at a slower rate.

Swanson's (1978) investigation of short-term memory focused on the hypothesis that verbal encoding deficits are related to reading disabilities. Normal and learning disabled children were trained and tested on named and unnamed stimulus conditions.

Swanson found that visual memory was not a specific cause of reading disabilities because children with learning disabilities performed as well as normal children on nonverbal visual-spatial short-term memory tasks. However, normal readers' recall of labels of unfamiliar random shapes were significantly better than learning disabled readers' recall. The results of Swanson's study supports the hypothesis that visual-verbal spatial integration dysfunctions are related to reading difficulties.

Phonological deficits, including "...a lack of phonological awareness, problems in the ability to encode or represent verbal stimuli phonologically, and difficulties in the retrieval of phonological codes from memory "(Catts, 1986, p.504) were the focus of two studies, one by Catts (1986) and the other by Manis (1985). Past research has suggested that phonological deficits affected reading disabled children's ability to decode, to articulate, to provide verbal labels, and to recall verbal information. Catts and Manis both concluded phonological and retrieval difficulties were an added source of reading difficulties.

Research has shown that children with learning disabilities do not make academic achievements that equal their intellectual ability. Learning disabled

children have exhibited "learned helplessness", a feeling of having no control over their successes and failures.

Pearl, Bryan, and Donahue (1980) conducted two studies, one with parochial children in grades three through eight and the other with parochial children in grades one through eight. Each study examined the beliefs of underachieving and control group children about the causes of their success and failure.

They found:

> ...that learning disabled children may devalue their influence over both successful and unsuccessful outcomes. Study 1 indicated that, compared to their classmates, underachieving children believed successes to be caused by external factors; Study 2 revealed that, compared to their classmates, underachieving children were less likely to think that their failures occurred because of a lack of trying. This difference in the interpretation of the causes of success and failure may be an important factor contributing to performance differences between academically successful and unsuccessful children (Pearl, Bryan, & Donahue, 1980, p.9).

Behavior

Teacher rating scales have been a reliable source of assessing handicapped children's behavior problems. The most widely used teacher rating scale, the Behavior Problems Checklist assesses conduct, personality, and immaturity-inadequacy disorders. The following studies used the Behavior Problems Checklist to compare the behaviors of handicapped children with the behaviors of their nonhandicapped peers.

McCarthy and Paraskevopoulos (1969) conducted a study comparing the problem behavior pattern of LD, ED, and average children. The Behavior Problems Checklist was used to assess the severity of behaviors categorized as a) unsocialized aggression, b) immaturity-inadequacy, and c) personality problems.

The findings indicated that ED and LD children both displayed more conduct disorders (restlessness, disruptiveness, attention seeking, fighting, irresponsibility, tension, hyperactivity, distractibility, and jealousy) than average children but, at different levels of severity. Their problems were distributed evenly across the three categories.

Cullinan and Epstein (1985) also used the Behavior Problems Checklist to examine the social and emotional problems displayed by EMR, LD, behavior disordered (BD), and nonhandicapped children. The BD group displayed significantly more adjustment problems of all the groups.

Epstein, Cullinan, and Nieminen (1984) used the Behavior Problems Checklist to investigate the behavior and emotional problems of LD and normal females and the influence age had on those problems. The behavior and emotional problems of middle-age and older LD and normal females did not differ. However, at the younger level, personality problems, feelings of inferiority, social withdrawal, and anxiety differentiated the two groups. Females labeled LD by age seven/eight displayed academic and social disabilities.

Cullinan, Epstein, and Lloyd (1981) attempted to replicate a previous study, comparing LD and normal boys, done by Cullinan et al. (1979). The present study also used the Behavior Problems Checklist to compare normal and

learning disabled students' behavior. Unlike the previous study, the present one included girls and focused on how LD children's behavior problems vary by sex.

The findings indicated that learning disabled boys and girls displayed significantly more anxiety and withdrawal related problems than normal boys and girls. The findings further revealed that the behavior problems displayed by learning disabled boys and girls were remarkably similar.

The next two studies, one by Gampel, Gottlieb, and Harrison and the other by McKinney, McClure, and Feagans were observational studies comparing handicapped and nonhandicapped children in segregated and integrated classrooms.

Gampel, Gottlieb, and Harrison (1974) observed the classroom behavior of segregated educable mentally retarded (EMR), integrated EMR, low IQ children, and nonhandicapped children across 12 behavior categories to determine the effects of integrating EMR children. Segregated EMR children displayed higher incidences of hostile, aggressive behaviors as compared to integrated EMR children. Integrated EMR children did not differ significantly from their low IQ and nonhandicapped peers. The results of the study concluded that segregated EMR children lacked appropriate role models. In contrast, integrated EMR children benefited from appropriate role models and were more likely to imitate their behavior.

The observational data collected by McKinney, McClure, and Feagans (1982) compared LD and non-LD boys'and girls' task-oriented, social, and affective behaviors in second and fourth grade. The major discrepancy between LD and non-LD children occurred in task-oriented behaviors. Learning disabled

boys and girls displayed poor task orientation, less task involvement, and more nonconstructive activity at both grade levels. Although the results were consistent, they were not statistically significant.

Temperament which "refers to the style of expression of a behavior, or the 'how' " Cardell & Parmar, 1988, p.497) was the focus of the next study. Cardell and Parmar (1988) used the Temperament Assessment Battery to compare teacher responses towards LD students to those of non-LD students to determine if temperament influenced negative views toward disabled students. The results showed that LD students behavior styles were viewed negatively. Also, social ability/adjustment and persistence contributed to the LD children's temperament.

Teacher rating scales and classroom observations have been the most reliable sources for diagnosing the behavior problems of LD children. These sources have provided a limited view because they have not indicated whether social-emotional and behavior problems exist outside of the classroom.

McConaughy and Ritter (1986) used parental responses on the Child Behavior Checklist to compare the social competence and behavioral problems of learning disabled boys 6-11 years of age and normal boys of the same ages. The learning disabled boys displayed significantly more social and behavioral problems. Specifically, the learning disabled boys exhibited fewer social contacts, less participation in activities, and lower school performance.

The results further concluded that the LD boys' social and behavioral problems extended beyond their learning disabilities. "The LD boys were reported to be deviant in terms of depression, ucommunicativeness, obsessive-compulsive behaviors, social withdrawal, hyperactivity, aggression and delinquent behaviors"

(McConaughy & Ritter, 1986, p.44).

Behavior and Achievement

The previous section examined the behaviors of handicapped students and the ways in which their behaviors compared to their nonhandicapped peers. It has been suggested that the inappropriate behaviors displayed by handicapped students directly relates to and affects their academic success.

Feagans and McKinney conducted two studies comparing newly identified learning disabled children to normally achieving children.

In their first study, Feagans and McKinney (1981) studied the intellectual, academic, and behavior characteristics of learning disabled and normal children using the WISC-R, the PIAT, and the Classroom Behavior Inventory. The LD children had significantly lower intelligence scores and performed at lower achievement levels than their normal peers. According to the results of the Classroom Behavior Inventory, LD children were more distractible, withdrawn, and inappropriate than their normal peers.

Their second study (1984) was a longitudinal investigation of the development of newly identified learning disabled children compared to that of normally achieving children. They went on to compare the development to school achievement and adjustment. Teacher rating scales, standardized tests, and classroom observations were used to assess development of the learning disabled and normal achieving subjects over a three year period.

McKinney and Feagans found that newly identified learning disabled children showed deficits in reading and math. Also, older learning disabled children were further behind peers of the same age than younger learning disabled children. Classroom observations of LD children engaged in regular classroom activities found them to be less task oriented, more distractible, and interacted more frequently with the teacher.

McKinney and Speece (1983) also researched behavior and academic success. First, they conducted a two-part study to assess the stability of classroom behavior patterns displayed by LD children as well as the relationship between their classroom behavior and their academic achievement over a 12-month period.

The first part of their study, a replication of the study done by Feagans and McKinney (1981) made the same conclusions. The LD children interacted more often with teachers and displayed more off-task than on-task behaviors during instructional tasks as compared to their classmates.

In the second part of their study, McKinney and Speece attempted to find out if the behaviors displayed by LD children affected their academic achievement at one point in time, or if the behaviors were consistent throughout their schooling. They found that LD children consistently showed deficits in task orientation and independence which are behaviors necessary for academic achievement.

The previous studies examined classroom behavioral effects on academic progress using LD students in a heterogeneous group. This 3-year study conducted by McKinney and Speece (1986) examined children who displayed

strengths and weaknesses in different behavioral subtypes categorized as independence-dependence, task orientation-distractibility, extraversion-introversion, and considerateness-hostility. They found that subtype membership in year one predicted membership in years two and three. "Specifically, the LD children who were members of the Normal behavior group achieved higher reading and comprehension scores than did LD children in the Attention Deficit and Problem Behavior groups" (McKinney & Speece, 1986, p.369).

Social

In comparison to their nondisabled peers, LD students display deficits in social interactions with their peers. On sociometric assessments, LD students rated lower than their nondisabled peers. They also exhibited difficulties in social perceptions which "refers to the ability to immediately identify, recognize, and interpret the meaning and significance of the behavior of others in the environment" (Maheady, Maitland, & Sainato, 1984, p.151 quoting Johnson & Myklebust, 1967). It has been further speculated that social skills deficits of learning disabled students may be related to cognitive dysfunctions necessary for processing verbal and nonverbal social cues.

The following two studies, one by Maheady, Maitland, and Sainato and the other by Reiff and Gerber focused on social interpretations and cognitive mechanisms necessary for social interaction.

Maheady, Maitland, and Sainato (1984) examined the perception and interpretation of nonverbal communication displayed by LD, EMR, and

socially/emotionally disturbed (SED) children and their nondisabled peers. They concluded that children with mildly handicapping conditions exhibited more frequent inappropriate behaviors than nonhandicapped children.

Reiff and Gerber (1990) investigated the cognitive correlates of social perception of 32 learning disabled children. The children were given the Wechsler Intelligence Scale for Children-Revised (WISC-R) and the Profile of Nonverbal Sensitivity (PONS).

Based on the results of the WISC-R and the PONS, they concluded that children with learning disabilities have difficulty making inferences and interpreting relevant cues. They further suggested that while these skills were important academically, they may also affect social situations.

Center and Wascom (1986) reviewed past research supporting the fact that teacher perceptions of students had an influence on the questions students asked, the answers students were given, and the types of interactions students has with teachers. It has further been found that LD students were ignored by and criticized more by teachers than their nondisabled peers.

For their study, Center and Wascom (1986) examined teacher perceptions of prosocial and antisocial behaviors in LD and socially normal (SN) children and the differences between males and females. Special education teachers and teachers of socially normal children completed the Social Performance Survey Schedule on each subject. The results indicated that differences in teacher perceptions of the social behaviors of LD and SN children did exist and varied by sex. Teachers favored SN and LD females for positive behaviors and only SN females for negative behaviors.

Previous studies have shown that handicapped children were frequently rejected by their nonhandicapped peers. The next three studies examined peer acceptance through direct observations, sociometric techniques, and various teacher, parent, and peer rating scales.

Cavallaro and Porter (1980) observed a preschool class containing at-risk and normal students. They set out to assess which students interacted with whom and the nature of those interactions. Data gathered from free play and gaze (looking at another individual) indicated that children interacted with others of equal developmental levels.

In previous studies conducted by Bryan, LD students did not differ from peers in the amount of time engaged in social interactions with peers and teachers, but did differ in the nature of interactions. LD children were significantly more likely to be ignored when initiating an interaction with peers and teachers.

For this study Bryan (1974) used a combination of two sociometric techniques to determine the social relationships of LD students and their peers in the classroom. The findings concluded that LD white females, in particular, were rejected by their peers. They were described by their peers as scared, unhappy, and worried. They were perceived as undesireable playmates.

Gresham and Reschly (1986) compared the positive social behaviors and peer acceptance of 100 mainstreamed learning disabled children and 100 nonhandicapped children. Teachers, parents, and peers were used to provide information concerning social skills and peer acceptance.

Based on the results of the teacher, parent, and peer rating scales, mainstreamed LD children showed deficits in task-related, interpersonal, and self-related social skills. Also, LD children were negatively accepted by peers in work and social situations.

Summary

Research has shown that special education students displayed academic deficits in their cognitive abilities, short-term memory skills, and phonological skills. Studies have also concluded that the inappropriate behaviors of special education children directly affect their achievement. Socially, special education students were negatively accepted as well as ignored by peers. They preferred to interact with teachers, who in turn also perceived them negatively. Their social deficits impacted on their home life as well. Parents viewed their special education children as inappropriate and withdrawn. Overall, research has proven differences exist in regular and special education students' academic, behavioral, and social awareness.

Chapter III

Design of the Study

Purpose

The purpose of this study was to distinguish the differences between special education and regular education students in terms of their awareness of environmental changes in the classroom.

Methodology

Subjects

The subjects consisted of eight students in a self-contained special education first grade class and eight students randomly chosen from a regular education first grade class in a suburban school district in New York.

Materials

Visual, auditory, schedule, and scent alterations were made to the immediate classroom environment. Specific changes were as follows: One visual change consisted of replacing the animal alphabet poster on the bathroom door for an alphabet poster displaying objects for each letter. For the other visual alteration the special education teacher wore eye glasses and the regular education teacher wore her shirt backwards. One auditory alteration consisted of

playing familiar music as the children were walking in at the beginning of the day. The other auditory alteration consisted of playing unfamiliar music as the children were returning from lunch. For the schedule changes Reading and Math were switched in the morning and Story time and Science were switched in the afternoon. The scent changes consisted of spraying a fresh smelling scent in the morning before the children arrived and spraying a strong smelling scent before the children returned from lunch.

Procedure

Two days a week, for approximately four weeks, alterations were made to the immediate classroom environment. Each week, different alterations were made so that the students did not identify the same kind of changes. For example, the first week included a visual change (switching the alphabet posters) on Tuesday and an auditory change (playing familiar music as the children arrived) on Thursday. The second week included a scent change (spraying a strong smelling scent as the children returned from lunch) on Wednesday and a schedule change (switching Reading and Math in the morning) on Friday. This type of pattern was continued throughout the next two weeks.

After each day in which a change occurred, the students were individually asked if they noticed anything different about the day. The students' yes or no

responses were recorded on a chart.

Analysis

Data gathered were analyzed qualitatively at the completion of the study. The students' answers were reviewed to determine which students were most aware of their environment and which changes were noticed most (e.g. visual, auditory, schedule or scent). The special education and regular education results were compared to determine which group of students were most aware of their environment.

Chapter IV

Statistical Analysis

Purpose

The purpose of this study was to distinguish the differences between special education and regular education students in terms of their awareness of environmental changes in the classroom.

Question to be Answered

Is environmental awareness a distinguishing factor that differentiates special education students from regular education students?

Table 1

Results of special education and regular education students' responses to changes in the classroom environment

Changes	Regular education students % of awareness	Special education students % of awareness
Visual	50	0
Music (pm)	50	0
Scent (am)	12.5	0
Schedule (am)	25	0

Visual	100	50
Music (am)	62.5	0
Schedule (pm)	100	0
Scent (pm)	12.5	0

Summary of the Findings

Based on the results of Table 1, the regular education students overwhelming outperformed the special education students in almost all areas tested. This further substantiated the fact that environmental awareness was a distinguishing factor that differentiated special education students from regular education students.

Chapter V

Conclusions and Implications

The purpose of this study was to distinguish the differences between special education and regular education students regarding their awareness of environmental changes in the classroom.

The results of this study substantiated the research previously reported. Documentation has shown that academic, behavioral, and social differences exist between special education and regular education students. The data from the current study adds yet another factor for consideration.

Throughout the course of the study, both regular education and special education students commented regarding the changes made in their classrooms. For example, students made remarks such as, "I know that song." and "What is that smell?". However, the regular education students were able to verbalize changes at the end of the day, whereas the special education students were unable to recall changes. Furthermore, when asked about changes, both regular education and special education students scanned the classroom for visual changes even on days in which alterations were nonvisual. The regular education students, concerned with providing the correct response, gave more appropriate

answers. The special education students, however, scanned the classroom and quickly stated there was no change despite comments they had made earlier in the day.

The researchers further noted that neither the regular education nor the special education students made any references as to reasons why they were asked such questions. This last finding suggests that even though the regular education students outperformed their special education peers, the regular education did not realize the intent of the questioning.

Implications for the Classroom

The information gathered in this study indicated that special education students had difficulties distinguishing subtle changes to their classroom environment. The findings suggest that special education students may have difficulties noticing subtle changes or cues in other aspects of their education.

Throughout their day children interact with other children and adults. When engaged in activities or conversations, special education students may not be picking up on others' use of humor, body language, voice inflection, eye contact, or physical space. This may lead to misunderstandings or inappropriate actions. Their inabilities may be evident in new social situations where special education students may withdraw rather than participate for fear of

nonacceptance.

That research has identified special education students' lack of awareness of their environment suggests that further action must be taken to remedy the difficulties associated with it. One recommendation may be to provide special education students with specific guided training by school counselors. Through group discussions, role playing, games, stories, and other appropriate techniques the counselor would address issues related to self awareness and awareness of one's environment.

Implications for Future Research

Numerous studies have been completed on the ways and reasons special education students differ from their regular education peers. The findings from this study substantiated previous research, but raised some questions about reasons that environmental changes may be a factor that distinguished special education students from their regular education peers.

The current study focused on ways in which special education and regular education students differ in their awareness of an ever-changing environment. The next step in substantiating the findings may be to determine reasons that special education students are less aware and to identify advantages of training special education students to become more aware.

The present findings indicated that the special education students were unable to recall changes made in the classroom. This inability may be due to the way special education students store and retrieve information. Further studies may be designed to require immediate responses rather than allowing a wait time. Then, in fact, special education students may have a higher success rate.

Research may be further developed to investigate both groups' dependence on visual cues to identify changes in the environment. While the regular education students also used their other senses to correctly identify changes, the special education did not. What causes special education students to rely so heavily on their visual sense while excluding the others?

Furthermore, a longitudinal study could be designed to determine whether awareness develops with maturity. A larger subject area, including three populations: self-contained special education class and a blended class with regular and special education students may provide more insights into the awareness of students.

Summary

The research has shown that environmental awareness is a distinguishing factor that differentiates special education and regular education students. There is a need for further research in this area to provide educators with more

information regarding reasons for these differences and to provide ways of educating and training special education students to become more aware.

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