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ABSTRACT

Visual difficulties among students with learning disabilities take two forms: visual-processing dysfunction and deficits in basic visual skills. Students with a visual-processing dysfunction have problems interpreting visual information even when the visual information is clear. Students with basic visual disability have problems obtaining sufficient visual information but can interpret what they see. While the latter is not considered an information-processing disorder, it can potentially exacerbate other disabilities. Despite differences in etiology and primary interventions, the two types of visual difficulties may lead to similar behaviors and may respond to similar compensatory (secondary) strategies. These strategies include enlarging print size, modifying worksheets, using a visual "window" or ruler, and using multiple senses during instruction. Students with basic visual deficits may benefit from visual therapy (eye exercises) or the use of tinted glasses. In most states, teachers of students with visual impairment (TVIs) provide services only to students with visual disabilities and may not serve students with learning disabilities. However, TVIs may provide other teachers and parents with consultation and professional brainstorming about possible compensatory strategies for either group. (SV)

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COLLABORATION AND ROLE RELEASE: CAN DIVERSTE SPECIAL EDUCATION TEACHERS & REGULAR EDUCATION TEACHERS WORK TOGETHER TO SERVE STUDENTS WITH VISUAL IMPAIRMENT OR WITH LEARNING DISABILITIES

Abstract

The numbers of students with learning disabilities are increasing in our schools. This article discusses one possible component of learning disability, visual-processing dysfunction. A small portion of students with learning disabilities exhibits visual-processing dysfunction. Visual difficulties arising from learning disabilities and visual disabilities are compared. Illustrations of mutual strategies between the two populations of students are provided. Isolation of staff and restriction of opportunities for informal collaboration is a more frequent condition in smaller and rural schools. Leadership of administrators is an essential condition for the development of collaboration between special education staff of diverse interests, especially in rural areas.

Learning challenges resulting from learning disabilities are receiving greater attention in our school systems. The number of children diagnosed with learning disabilities has increased by over one million students, an increase of 198%, between 1977 and 1993 (MacMillan, Gresham, & Bocian, 1998; Manset & Semmel, 1997). Increased resources are needed to serve this growing population. Learning disabilities can have both educational and social effects that can have far-reaching economic impact over an individual's lifetime. The appropriate concern of parents and special education teachers have sometimes led them to ask teachers of students with visual disabilities/impairments (TVI) to evaluate the student with learning disabilities or to provide recommendations.

Learning disabilities received greater attention from both the educational establishment and the media following the passage of PL 94-142 in 1973. Media has promoted the idea of learning disabilities meaning dyslexia (Beauchamp, 1987) and dyslexia as seeing letters or words reversed. However, learning disability takes many forms. They may include a variety of information-processing disorders including auditory-processing and language, attention, motor, and visual perceptual, all of with can contribute to disabilities in reading, spelling and mathematics (Smith, 1994). Thus, one component of learning disabilities may involve visual perception as a visual-processing dysfunction. Perhaps this is why special education teachers occasionally ask TVIs to assess, provide recommendations, or serve students with learning disabilities with a visual perceptual component.

Deficits in visual perception or visual-processing dysfunction account for only a portion of children with learning disabilities. The majority experiences a variety of language-processing difficulties (Beauchamp, 1987; Smith, 1994). Students with learning disabilities may also experience other visual difficulties other than a visual-processing dysfunction. Fifty to eighty percent of students with learning disabilities may still show deficiencies in basic visual skills (Cohen, 1988).

This article proposes to discuss one component of learning disability, visual-processing dysfunction. The educational effects of a visual-processing dysfunction will be compared to some of the educational effects of a visual disability. Deficits in basic visual skills, that may aggravate the impact of a learning disability, will be briefly discussed along with two controversial methods of remediating basic visual deficits. All challenges faced by a student with learning disabilities need to be addressed, including visual challenges. However, the focus on compensating and remediating for visual-processing skills should not reduce the compensation and remediation

provided for other, potentially more disabling components of the learning disability. Most students with learning disability have significant language-processing difficulties which are often more severely educationally disabling (Smith, 1994).

Visual difficulties among students with learning disabilities take two forms. Only a portion of students exhibits visual-processing dysfunction. Visual-processing dysfunction is included as one of four information-processing variations by which individuals with learning disabilities may be categorized: motor skills, attention and auditory processing, language, and visual perceptual skills. Other visual difficulties involve the binocular and accommodation functions of the visual system and are referred to as basic visual skills. While deficits in these basic visual areas are not considered an information-processing disorder they can potentially exacerbate other existing disabilities (Beauchamp, 1987).

Similarities between Behaviors of Students with Learning Disabilities and Visual Disabilities. Students whose learning disabilities include a visual component may demonstrate some behaviors similar to those demonstrated by students with visual disabilities. A few of the potential common behaviors included frustration, difficulty identifying letters, lack of judgement in spatial relationships, poor eye-hand coordination, and difficulties in language and mathematics (Sacks & Silberman, 1998). Smith (1994) states students with learning disabilities and a visual-processing dysfunction may experience difficulties in ocular-motor skills, visual perception, gross and fine motor, visual memory, and appear disorganized and unstructured, features which are commonly found among students with visual disabilities.

Therefore, what is the difficulty? Why not jointly share the responsibility for educating students with learning disabilities? The answer is that while some of the compensatory strategies are similar, the disability and many of the needs are different.

Differences in Etiology. Students whose learning disabilities including a visual-processing dysfunction experience problems interpreting visual information even when the visual information is clear. Learning disabilities have a neurological etiology (American Academy of Pediatrics, 1992; Smith, 1994). Students with visual disability, whose remaining vision is sufficient to read some form of print, have problems obtaining sufficient visual information, but can interpret what they are able to see. A visual disability is commonly established because of a physical defect in a part of the visual system (eye, optic nerve, etc.) resulting in a significant loss in acuity (clarity) and/or visual field (size of area viewed). Despite these fundamental differences in etiology of visual problems, some, but not all of the strategies used to make more efficient use of the vision are similar.

Visual-processing Dysfunction. Resources on the Internet (Ldonline.org, 1999; Ldonline, 1999) contain rich explanations of visual processing dysfunction and common strategies, not for remediation, but for easing students' ability to interpret information. The most common functional limitations resulting from a visual-processing dysfunction are in the areas of visual sequencing, visual memory, visual motor integration and dysgraphia, visual figure ground, visual discrimination, and spatial orientation. Most of the above features are considered components of visual perception.

Difficulties in visual sequencing and spatial orientation can result in reversals in letters, words, or numbers. Spacing and relationships of one symbol to another are important cues in reading and mathematics. Difficulties in visual memory may result in problems in reading comprehension and recall of information. A student may experience visual agnosia - problems recalling object or symbols. One result may be difficulty consistently recalling letters, words, and numbers. Visual motor integration (VMI) problems may be expressed as clumsiness or even as poor handwriting skills (dysgraphia). VMI problems may create difficulty copying from the board. Another area of visual-processing difficulty could be visual discrimination and visual figure ground. These skills involve the ability to pick out the visually important features and individual characteristics from all available visual information. A student with figure ground or visual discrimination difficulties may have trouble

seeing a word or image against other words or images, i.e. reading a line of print on a page. The student may have trouble distinguishing similar letters or be able effectively to use charts and graphs.

Learning disabilities and visual disabilities both exist on a continuum of severity, from severe to mild. Milder forms of both disabilities may be helped by a number of strategies used by TVIs. Were as the causes of the visual difficulties vary between students with visual disabilities and students with learning disabilities, the simplest strategies may be similar.

The shared strategies include enlarging print size, modifying worksheets, using a visual window or ruler, and using multiple senses while teaching. Enlarging print size, because it reducing the "density" of the information and helps with visual discrimination and figure ground, may help a student with learning disabilities. The greater space provides more writing room as an aid to handwriting difficulties.

Modifying worksheets is common strategy available to teachers in both disability areas. Adding structure or simplifying the layout can modify worksheets. Darkening or highlighting lines may help direct a student's attention to important features. Dividing the paper into clear parts may help a student stay organized. Color-coding may help a student with learning disability but is less likely to aid the student with visual disability. Reducing irrelevant information on a page will reduce the complexity of figure ground.

For some students using a cover paper with a window cut into it will help a student ignore irrelevant information and stay focussed on the task. A window may also help with tracking difficulties. Sometimes a line guide such as a ruler or student finger may also achieve the same effect.

The use of multiple senses may help both students with learning disabilities who are having trouble visually interpreting the information they see, and students with visual disabilities who may be able to interpret information but have trouble seeing it. Writing paper with raised lines may aid both groups by adding in some tactual information. Teachers may find students are helped when directions are read aloud, writing on the blackboard or overhead is verbalized, or a student is allowed to use a tape recorder to take notes or listen to a book-on-tape.

However, it is important to remember that the primary interventions for students in those two disabilities areas are different and the individual needs of the student vary greatly. No one method will work for every student and a special education teacher need to discriminate areas of possible problems unique to each disability (Mather & Roberts, 1994). A TVI, asked to consult on a student with learning disabilities, may not have much to offer in primary areas of learning difficulties resulting from a language processing dysfunction while being able to offer useful secondary strategies.

Basic visual deficits. The number of students who show deficits in basic visual skills and who are learning disabled is larger than the portion of individuals found in the general student population (Rosner & Rosner, 1987). However, deficits in basic visual skills do not automatically result in reading difficulties. Many students, with and without learning disabilities, adequately compensate without formal intervention (American Academy of Pediatrics, 1992). There is disagreement as to whether students who do experience reading difficulties may benefit from some form of intervention (American Academy of Pediatrics, 1992; Cohen, 1988). While not the cause of the learning disability, these deficits can exacerbate other existing challenges faced by the child. Students with learning disabilities should receive multidisciplinary team evaluations including a visual evaluation by optometrist or ophthalmologist (American Academy of Pediatrics, 1992; Beauchamp, 1987). Vision screening by the school is not designed to diagnose subtle visual defects. Neither are TVIs trained to diagnose subtle visual defects.

Visual therapy. Sometimes, parents have told teachers that their child has gone to a behavioral optometrist. Either the child may be receiving visual therapy or the parents had been given a vision therapy

program (eye exercises) for their child. The parent may want the teacher to complete the exercises at school. Vision therapy (vision training, orthoptics, eye training, and eye exercises) is a process for correcting some eye movement disorders and a few visual perceptual disorders. Vision therapy consists of non-surgical treatment usually involving motor activities. Vision therapy may be as simple a patching an eye, as mundane as exercises with a penlight or complex, involving electronics and biofeedback. Visual therapy is done to treat functional deficiencies in order to maximize visual efficiency and effectiveness. The exercise program is most commonly completed in the optometrists' office.

Tinted lenses. A recent innovation is the use of tinted lenses or overlays to alleviate reading disorders. The lenses or colored overlays are purported to promote reading by increasing reading time, improve reading ability and visual perception and reducing difficulty with light sensitivity, headaches, and watery eyes. The problems addressed by tinted lenses and overlays, which underlie visual perceptual difficulties, are referred to as scotopic sensitivity syndrome (SSS). An extensive review of research undertaken by the American Optometric Association (1999) found that testing on the effectiveness of tinted lenses is ambiguous with results varying. Most of the studies are not repeatable. Another finding is that students diagnosed with SSS, upon further testing, frequently exhibited measurable vision deficits treatable through appropriate prescriptive correction and or vision therapy. Most students treated for their underlying visual difficulties no longer qualified as SSS. Based on their review of literature the American Optometric Association calls for further research on the beneficial claim of tinted lenses, comprehensive eye/vision examination wit emphasis on binocular vision function for all individual with reading difficulties, and a continued multidisciplinary approach for the diagnosis and treatment of learning disorders.

Should you ask for suggestions or services by the TVI? A TVI provides a service for students with visual disabilities. In most states, services are based on need, and the label of the disability determines the provider of the service. Technically, this means that a TVI can not formally serve a student with learning disabilities unless they also are labeled visually disabled. Check with your own state for their special education rules and regulations and for their district policies.

This does not mean that a TVI may not be willing to consult with a special education teacher or parent of a student with learning disabilities. The TVI's training and experience with students with visual disabilities may provide creative forms of old strategies. For example, the TVI may have found student more willing to use a brightly colored post-it note to focus attention rather than a line guide such as a ruler or finger. However, the TVI probably can not provide direct service.

TVI's generally do not receive training during their teacher-training program on visual therapy, as provided by behavioral optometrists, or training in scotopic sensitivity and the prescription of tinted lenses and overlays. This is not to say that "your" TVI may not have an interest in these areas and have attended workshops or taken advantage of training opportunities to acquire this knowledge. However, if he/she has done so it was for their own interest and not a required component of the job description. The TVI's priority will be to provide the needed educational services for students with visual disabilities.

Sometimes the special education teacher can feel at a loss with a student with learning disabilities. A parent may approach them with a vision therapy program they have received from a behavioral optometrist, they may have read an article about scotopic sensitivity syndrome and have questions, the diagnostic assessment may have revealed a visual-processing disorder as a component of the learning disability and they wonder if the TVI may have more information. For students with milder forms of learning disabilities the TVI will have information similar to that available from a teacher of students with learning disabilities. Since service is not available from the TVI, use the TVI for professional brainstorming and consultation. Use other resources for more in-depth information, not forgetting that the major disabling component of most students with learning disability is probably language-processing (Cohen, 1988; Eden & Stein, 1995; Smith, 1994). Even the American Optometric

Association states in their policy statement on visual therapy that a MDT assessment is of greatest concern because of linguistic, non-visual concerns.

It is important to remember that the primarily interventions for students in those two disabilities areas are different and the individual needs of the student vary greatly. No one method will work for every student and a special education teacher need to discriminate areas of possible problems unique to each disability (Mather & Roberts, 1994). A TVI, asked to consult on a student with learning disabilities, may not have much to offer in primary areas of learning difficulties resulting from a language processing dysfunction. The answer is that some of the strategies are held in common but not the neurological base d interventions of learning disabilities. One must be careful not to focus attention and strategies too heavily on visual difficulties while reducing the attention given to the language-processing component.

Conclusion

Students with visual impairments are also increasing in number but continue to remain a low incidence disability (Sacks & Silberman, 1998). In rural school districts, they may be scattered throughout the similarly scattered schools. The result is often less frequent visits by the teacher of students with visual impairment. Creative methods should be developed to ensure these students needs are appropriately met.

Students whose learning disabilities include a visual component may demonstrate some behaviors similar to those demonstrated by students with visual disabilities. A few of the potential common behaviors included frustration, difficulty identifying letters, lack of judgement in spatial relationships, poor eye-hand coordination, and difficulties in language and mathematics (Sacks & Silberman, 1998). It is important to remember that the primarily interventions for students in those two disabilities areas are different and the individual needs of the student vary greatly. No one method will work for every student and a special education teacher needs to discriminate areas of possible problems unique to each disability (Mather & Roberts, 1994). However, the secondary methods of intervention between the two populations can be shared.

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