

Teaching Students with Disabilities: Traumatic Brain Injury¹

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Introduction

Unlike other disabilities that students are born with, students can become affected by a traumatic brain injury (TBI) at any point in their life. According to the Centers for Disease Control and Prevention (2015, paragraph 4), “Children aged 0–4 years, older adolescents aged 15–19 years, and adults aged 65 years and older are more likely to sustain a TBI” thus increasing the likelihood that secondary educators may have a student in class who sustains a TBI. According to the Individuals with Disabilities Education Act (2004), a traumatic brain injury is defined as follows:

Traumatic brain injury means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child’s educational performance. Traumatic brain injury applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech. Traumatic brain injury does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma. (Individuals with Disabilities Education Act, 2004, paragraph 1)

Not all head injuries cause a traumatic brain injury, and not all injuries will cause permanent effects. Traumatic brain injuries can be caused by a variety of traumas, including falls, assaults, motor vehicle accidents, being struck by/against an object/surface, and unknown/other sources (CDC, 2015). Students engaged in agriculture may participate in activities that might cause a TBI, such as livestock handling, equine/rodeo sports, and working with agricultural equipment. Contact sports may also be a likely source of TBI in the form of concussions. Agricultural educators should be prepared to work with students who may have sustained a TBI and to make the appropriate modifications to encourage student success.

Application in the Learning Environment

The severity of a traumatic brain injury may range from “mild” to “severe.” Mild cases usually involve loss or alteration of consciousness; whereas, severe cases may result in coma and amnesia. As a student recovers from a TBI, the modifications implemented to help the student succeed may change. It is likely that if a student incurred a severe traumatic brain injury there will be a team of support staff to help the student transition back to school once they are medically cleared to return. Other times, students with concussions (often considered mild TBI) will have a doctor’s note that specifies activities that the student

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cannot engage in for a period of time while they heal. Working with members of the transition team to determine appropriate modifications will help the instructor plan appropriate learning activities and assessment strategies for the affected student. However, due to the rapid pace at which brain injuries may change, it is important for ongoing evaluation to occur to ensure that the learner's needs are being met (Bowen, 2015).

Classroom Environment

The effects of a traumatic brain injury range according to the severity of the injury. Lenrow (2004, paragraph 4 and 5) identified common characteristics of individuals affected by a TBI :

- Fatigue
- Headaches
- Visual disturbances
- Memory loss
- Faulty reasoning
- Poor attention/concentration for longer periods
- Dizziness/loss of balance
- Irritability-emotional disturbances
- Feelings of Depression
- Loss of smell
- Sensitivity to light and sounds
- Slowness in thinking
- Lowered social inhibition
- Lowered impulse control
- Decreased motivation and initiative

Typical classroom modifications in response to the above characteristics include extended time on assignments, simplified wording of directions and questions, organization cues, large print books/readings/assignments, and assistive technology (i.e., calculators, recording devices, timers, etc.). Some doctors will prescribe a period of time in which their patients are not allowed to look at computer screens or videos due to the bright light associated with these activities. Alternative activities will need to be assigned to students in place of a computer module or video. This can be as simple as printing out a paper copy of a computer module for the student or physically demonstrating information presented in a video. The period of time in which students might be restricted from watching videos or computers may be as short as a week. In such cases, the instructor and learner might agree upon a time after the restriction period in which the student can make up the work more easily.

Maintaining a well-organized classroom management plan is key to assisting learners with traumatic brain

injuries process information. Sometimes the classroom environment will need to be modified to increase student accessibility or to encourage particular behaviors. This can be done by supplying external devices and cues that the student can use to compensate for organization, memory, and motor deficits (Mateer, Kerns, & Eso, 1997). These external cues might include labels, map checklists, pictures or icons, photograph cues, post-it-notes, calendars, planners, and journals (Bowen, 2015). Chunking information or providing step-by-step directions can also assist students with TBI in determining the course of action for their work. Further, asking students to rephrase the directions back to you before beginning an assignment is an effective strategy for students with TBI. Positive reinforcement of desirable behaviors or attitudes can also be highly effective. Teachers can capitalize on momentum of positive behavior by asking students to perform a series of tasks that they are highly likely to perform well followed by a behavior that they typically do not easily engage in. This is another strategy called "behavioral momentum" (Slifer et al., 1997).

Laboratory Environment

Since students with a traumatic brain injury often experience a slower processing time and decreased impulse control, the agricultural educator should anticipate potential safety issues in the laboratory setting. It is imperative that the instructor explain the activities associated with working the laboratory setting to the learner's case manager before having the learner engage in such activities in order to decide which activities are appropriate and safe for the learner. Students restricted from looking at television or computer screens due to the bright light associated with them will likely not be able to engage in welding or torch-cutting activities. Instructors should stay close to the student in laboratory settings in order to properly supervise the activities of the learner, not only to monitor for potential safety issues but also to help facilitate instruction through guided practice and feedback.

Not only will clear routines and norms be beneficial in the classroom environment, but they are also important in the laboratory setting. Laboratory settings in agricultural education can vary widely, including a science laboratory, agricultural mechanics facility, greenhouse, or livestock handling facility. The instructor should emphasize appropriate attire, safety, and behavioral expectations in these settings and contact the parents of the student to communicate this information to them. The instructor can further help prepare all students for anticipated changes and transitions by reviewing upcoming tasks and explaining the need for the changes.

Non-Formal Environment

Depending on the severity of the injury, students might not be allowed to continue to work for a period of time (if at all) on their Supervised Agricultural Experience (SAE) if it involves physical labor, working with computers, or other potentially hazardous situations. The family of the affected student should ask the family doctor about the impact that the child's injury may have on their ability to work.

Sometimes, students will have sustained the traumatic brain injury "on the job" and should not return to that placement depending on the manner in which they were injured. The agricultural educator should assess the SAE placement to determine if the placement is still a safe place for the student to work, and if not, to remove the student from the placement immediately.

Conclusion

Learners affected by traumatic brain injuries display a variety of symptoms dependent on the severity of the trauma incurred by the brain. Of primary difficulty to these learners are information processing, organization, and memory recall, coupled with possible frustration at their decreased ability. Agricultural educators working with students affected by traumatic brain injuries should follow the appropriate modifications for the learner to create a consistent, organized, and supportive environment. Additional resources for working with students with traumatic brain injuries can be found through the following websites:

http://www.brainline.org/content/2008/07/classroom-interventions-students-traumatic-brain-injuries_pageall.html

<http://www.projectidealonline.org/v/traumatic-brain-injury/>

http://www.cdc.gov/traumaticbraininjury/factsheets_reports.html

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