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Concussion's Impact on Learning: The Need for Return-to-Learn Protocols for
Hospital and School Collaboration

by

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Dissertation

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Abstract

Over half million children with traumatic brain injuries (TBI) pass through United States emergency departments each year. While there is Return-to-Play legislation in all 50 states, in response to sports-related concussion, there are very few Return-to-Learn protocols in place in the nation's public schools. Concussion is a mild form of TBI; the vast spectrum of TBI makes it a complex disability, which may involve intensive physical rehabilitation and cognitive therapy. The primary purpose of this qualitative case study was to examine the collaboration between educational and medical providers at one high school in Michigan to illuminate the process of school reintegration for students with concussion. The analysis was organized around Duffy's nested theories of action to understand the communication strategies, decision-making processes, and culture influence on the collaboration between the hospital and school. Data were collected through cognitive interviewing methodology with medical providers, educational personnel, and a TBI teacher consultant from a district agency. Findings reveal there is one directional communication from the medical professionals to the educators via the student, and educators defer to the doctors on how to accommodate the student, implementing recommended environmental accommodations without an educational lens for needed academic supports. Additionally, confused terminology does not provide educators a clear understanding of concussion as a mild traumatic brain injury, the unique healing process, and a new way of learning for each student post injury. This study illustrates the need for a new model of "short-term disability" to activate educational accommodations within the framework of multi-tiered systems of support, shifting the perspective of educational leaders and the current mindset of concussion.

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Chapter 1: Introduction

Traumatic brain injury (TBI) is a “disruption in the normal function of the brain that can be caused by a bump, blow, or jolt to the head, or penetrating head injury” (Center for Disease Control and Prevention, 2019). In 2013, 2.8 million people in the United States sustained a TBI, of which 661,349 were children (Taylor, Bell, Breiding, & Xu, 2017). Children 0-5 years of age and adolescents 15-19 years of age are most vulnerable to this injury. According to the Centers for Disease Control and Prevention (2015), TBI is the leading cause of disability in children.

Background and Context of Study

Federal legislation protects the rights of individuals with disabilities in the community, workplace, and school, according to Section 504 of the Rehabilitation Act (1973), the Americans with Disabilities Act (1990), and the Individuals with Disabilities Education Act (IDEA, 2004). The medical community has conducted extensive study into the diagnosis of brain injury, identified areas of vulnerability, and created therapies for recovery. School officials understand that brain injury is a disability under the IDEA, and students are eligible for special education services. In 2013–2014, twenty-six thousand students aged 3-21 years of age received special education services nationwide (Snyder, de Brey, & Dillow, 2016). However, there are no formal regulations on the transfer of information or services from the medical to the educational settings during recovery. This situation is compounded by the lack of articulation, understanding, and consideration of the unique needs of a student with TBI.

Statement of Problem

TBI occurs in youth and adults of all ages and covers a wide spectrum of severity. Over the past 20 years, literature addressing TBI recovery and rehabilitation has been grounded in the medical field (Hoge et al., 2008; Jennett, Snoek, Bond, & Brooks, 1981; Langlois, Rutland-Brown, & Wald, 2006; Thurman, Alverson, Guerrero, & Sniezek, 1999). More recently, in the past decade, discussion of youth with TBI has emerged in the field of special education predominately focused in the adolescent years, with strong connection to sports injury. In 2009, the first Return-to-Play legislation passed in Washington State and has since been enacted in all 50 states protecting student athletes participating in organized sports from life threatening or potentially life-long consequences caused by returning to the game too soon after head injury. However, only nine states regulate what are described as Return-to-Learn laws regarding reintegration process for student-athletes into school and educational activities post-injury (National Conference of State Legislatures, 2017; Thompson et al., 2016).

Purpose of Study

This dissertation expanded on the researcher's previous work, which explored the school re-entry experience of the student with TBI (Crylen, 2015). This work resulted in a new conceptual framework of the communication needed between the three players in the process: family, medical, and educational entities. Recent research showed that educational leaders have varied resources and direction in the Return-to-Learn process, and there is a gap in research on the communication and collaboration needed between the medical and educational service providers. With a focus on educational leadership, the purpose of this

study was to understand the experience of school reintegration from the perspective of the school administration and faculty supporting a student with TBI and their family.

Through qualitative case study analysis of one high school within an identified regional education services agency in Michigan, this study described the school reintegration process for students with TBI, including the hospital and school communication, decision-making, and cultures, to help explain the student's academic and socio-emotional success.

Significance of Study

As the Centers for Disease Control and Prevention (CDC, 2018) cited TBI as a leading cause of disability in children, this study contributed to organizational theory in school reintegration, helped to shape multilateral agency, and provided a springboard for future study into the trifecta of support for a student with brain injury. Parents, teachers, and doctors will find this study useful, as Return-to-Learn guidelines are designed and implemented in consideration of school structures, culture, and context. As in other areas of the nation, western Michigan is experiencing a growing prevalence of TBI; therefore, area medical providers will see the benefit of this study in the advancement of collaboration with local schools. Presenting the benefits of sharing knowledge with other educators and families and how the study may be used to shape future programming and policy may motivate participant involvement.

Personal experience with disability prompted my research into pediatric brain injury recovery and reintegration into schools. Brain injury is a hidden epidemic. Physical disabilities are visible; thus, there is a general social knowledge and consideration of individuals with physical impairments. Cognitive disabilities are invisible; thus, general social knowledge is only constructed through personification of diagnoses in mass media,

such as sitcom characters with autism spectrum disorder or cerebral palsy, yet only the recognized cognitive impairments are included in general social knowledge. Brain injury remains outside this realm of social understanding.

Special education assessments do not identify brain injury in the category of services. Rather it looks for the symptoms of brain injury to address, such as learning disability. Special education looks at the areas of deficiency rather than the causes of disability. As the researcher's previous study has shown, there is a gap in communication between the medical and educational spheres of support for students with TBI, prompting a continued research journey into school reintegration for students with TBI.

Research Questions

The primary purpose of this study was to examine the process of school reintegration from the perspective of the school administration and faculty supporting a student with TBI and their family. The following research questions guided this study:

1. What strategies do hospitals and schools use to communicate during the school reintegration process supporting a student who recently sustained a TBI?
2. What processes do hospitals and schools use to make decisions during the school reintegration process supporting a student who recently sustained a TBI?
3. In what ways do hospital and school culture impact the school reintegration process supporting a student who recently sustained a TBI?

Theoretical Framework

To better understand how educational leaders make decisions, the researcher used a normative approach associated with organizational theory (Hargreaves & Hopkins, 1994; Hoyle, 1986). As Bush (2015) summarized Hoyle, "Organizational Theory enhances

understanding of leadership and management in schools” (p. 35). Using a normative approach rather than descriptive allowed the researcher to advance previous work on the needs of the student returning to school after sustaining TBI (Crylen, 2015). This normative approach to organizational theory allowed a focus on the parties involved in the reintegration of the student with TBI rather than a focus on the entire school organization (Bolman & Deal, 1991). The leadership models that influenced this study were transformative leadership, as it focuses on the processes in which educators engage, and participative leadership with its focus on decision-making processes of the group (Bush, 2015).

Conceptual Framework

Although TBI is listed as a disability eligible for services under the Individuals with Disabilities Education Act (IDEA, 2004), educators receiving information through mass trade publications may be most familiar with the hot topic of sports-related concussion rather than TBI. Concussion is a mild form of TBI; the vast spectrum of TBI makes it a complex disability, which may involve intensive physical rehabilitation and cognitive therapy (CDC, 2018).

As identified in the researcher’s previous work, three spheres of support intersect in providing services to the child: medical, family, and school (Crylen, 2015). Each sphere follows a different philosophy in working with the child. Using the lens of disability studies, the medical model subscribes to a mantra of *we’ll fix you*, whereas the family may champion the social model of *you belong as you are* (Baglieri, 2017). The school generally endorses a transitional special education perspective of *we’ll help you deal with it*. The contrast of medical and social model of disability is apparent in education due in large part to the structure of special education programs and their accountability outlined in legislation.

This study focused on the collaboration and communication between the school and medical teams throughout the reintegration process. Examined therefore, was the school organization and structure supporting students' reintegration, by study and observation of the organization's politics, decision-making and evaluation processes, and community, as it pertains to special education for acquired disabilities. Topics discussed in this study included the identification of disability, the provided accommodations, creation of an individualized education plan (IEP) under the category of TBI, the implementation of modifications, and the layers of teams working on students' case file. Although a focused micro-look at one high school's concussion reintegration protocol through the perspective of the leaders inclusive of regional education service agency consultants, school principal, teachers, special education specialists, and medical personnel, this case study provided further evidence to understand the macro-view of Return-to-Learn for students with TBI.

Legal Framework

The Rehabilitation Act of 1993 provided a framework for policies and procedures for states and school districts to implement Section 504, which is focused on non-discrimination based on ability in education. Section 504 explicitly states that schools must identify students and evaluate their needs and develop a written educational plan that meets the needs of the student to ensure equal access to same educational opportunities as the fully able students in the classroom and extra-curricular activities.

The Americans with Disabilities Act extends protection (nondiscrimination) of Section 504 to private employers, state and local governments, and any privately-owned business or facility open to the public. The Americans with Disabilities Act (ADA, 1990) broadens the definition of disability as "a physical or mental impairment that substantially

limits one or more major life activities, has a record of such impairment, or is regarded as having such an impairment” (Section 3, Definitions). The following statements, therefore, apply to students covered under the Americans with Disabilities Act as listed in the ADA Amendments Act of 2008:

- Must have a physical or mental impairment, which substantially limits a major life activity, e.g., learning.
- Learning is substantially limited if child receives no educational benefit from “regular education.”
- Qualified student with disability must be provided aids, benefits, or services *as effective* as those provided non-disabled students.
- Can be applied to temporary or episodic impairment based on case-by-case basis.

The Office of Civil Rights in the U. S. Department of Education enforces both the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. The Individuals with Disabilities Education Act (IDEA, 2004) was passed with the express purpose “to ensure all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them *for further education*, employment and independent living” (Section 300.1, Purposes).

School districts are responsible for identifying and evaluating children ages 3-21 years of age with one of 13 disabilities or children who have experienced a developmental delay. The law requires that the school district provide a free and appropriate education (FAPE) in the least restrictive environment (LRE). Districts cannot reject a student based on need or associated cost to make accommodations to ensure access to education. According

to FAPE, special education and related services are provided at the public expense, meet the standards of the state education agency, and include an appropriate education within the child’s IEP, which is specifically tailored to meet each student’s unique needs.

Characteristics of Students with TBI

Individuals with TBI often experience short- or long-term cognitive changes or effects of social, emotional, and behavior due to the trauma. Many students with mild or moderate TBI are often unidentified or misidentified and receive services outlined in the Individuals with Disabilities Education Act (IDEA, 2004) for other reasons. Those with severe TBI are often immediately swept into services with limited information about the full scope of injury and recovery. The common areas of need in educational settings for students with TBI include academic accommodations, as well as behavioral and social supports (Schilling, 2012). Table 1 outlines areas, challenges, and supports related to TBI.

Table 1

Cognitive, Behavioral, and Social Challenges and Support in TBI

Area	Challenges	Supports
Cognitive	Executive functioning skills –focusing, concentrating, problem-solving with abstract concepts	Adequate rest time Extra time to complete tasks Assistive technology
	Processing and memory	Break assignments into steps
	Learning and recalling new materials	Reduced academic load
	Speech and language difficulties	Alternative assignments Testing accommodations
		Direct instruction
Behavior	Hyperactivity	Positive reinforcement
	Mood swings	Nonverbal cueing
	Low tolerance/high frustration	Consistent feedback
	Inattention to tasks	

		Reduce environmental distractions
Social	Feeling isolated from peers Low self-esteem Identity as victim, not being understood	Ongoing counseling and guidance Social Skills group TBI group

Note. Adapted from “Socio-emotional support needs for re-entry to school after traumatic brain injury,” by A. E. Crylen, 2015, *Including Learners with Low-Incidence Disabilities (International Perspectives on Inclusive Education, 5*, 159-179. Emerald Group Publishing.

Definition of Key Terms

To provide a shared understanding of certain terms related to this study that may also be utilized in other fields, this study includes the following definitions:

- *504 Plan*—a nondiscriminatory accessibility plan that allows individuals to fully participate in all learning activities and environments.
- *Acquired disability*—impairment in a person’s ability to function caused by illness or injury after birth.
- *Capitalistic frames*—a perspective that places value on means of production, distributing, and exchange of wealth. In reference to the field of education, the student must acquire schooling to be a productive member of society; in the field of medicine, the patient must recover to return to work.
- *Child Find*—a mandate in the Individuals with Disability Education Act (IDEA) that requires schools to locate, identify, and evaluate all children with disabilities from birth through age 21. The Child Find mandate applies to all children who reside within a state, including children who attend private schools and public schools,

highly mobile children, migrant children, homeless children, and children who are wards of the state (20 U.S.C. 1412(a) (3)).

- *Executive function*—the complex processing of large information used in goal setting, planning, initiating, self-awareness, and self-monitoring.
- *Glasgow Coma Scale*—a neurological scale used to assess levels of consciousness that is used by emergency medical services, nurses, and doctors.
- *Individualized Education Program (IEP)*—mandated by the Individuals with Disabilities Act, defines the educational goals and objectives of a child who has been identified with a disability as described by federal regulations. Each child’s IEP is written specifically for their individual learning needs.
- *MRI*—magnetic resonance imaging used in radiology to form images of the body for medical diagnosis and staging of disease and injury.
- *Multi-tiered systems of support (MTSS)*—the school’s plan for post-injury functioning youth with medical clearance that includes the technical core of assessments, interventions, accommodations, modifications, and formalized 504 Plan or IEP.
- *Neuropsychological*—the study of brain damage on behavior and the function of the mind.
- *Stakeholders*—the person or group that holds an investment in the student with TBI including but not exclusive to, parents, doctors, therapists, social workers, teachers, and friends.

Delimitation and Limitations of the Study

This study generated interesting insight into one small group of educators' views on their own experiences and may reveal many perspectives that have implications for school reintegration for children with TBI. The single case study sample cannot be generalized to other schools in other contexts and other locations. It was expected that all responses would be honest, accurate, and consistent from all participants, including the hospital service providers and educators working with students with TBI. This case study was reflective of one point in time and in one school district.

This case study highlighted particular areas of potential interest for those who design and implement hospital to school transition for students with TBI. Additionally, this research provided an example of how the use of semi-structured interviews and cognitive interviewing methods to obtain educator insight that could contribute to the development of successful contextually specific TBI experiences. Results of this study indicated possible models of collaboration and decision-making through hospital-school communication and transition-planning. Different terminology in each sphere of support suggests that using a common framework of areas of cognitive, behavioral, and social needs would be an effective place to start when identifying the child's vulnerabilities post-injury (refer to Table 1).

Summary

The Center for Brain Injury Research and Training (CBIRT, 2011) has recognized "a critical issue in service delivery for students with TBI [to be] the significant discrepancy between the incidence of TBI and the identification of children with TBI for special education services" (p. 478). Employing a mixed methods study, Glang, et al. (2008) found that "injury severity and hospital-school transition services (e.g., written or verbal

communication between hospital and school) were related to the provision of formal special education or 504 services” (p. 482). Further research supported that frequent misidentification of students with brain injuries in school results in an underserved population (Cronin, 2000). The CDC recognized that consistent procedures are needed for transitioning students from hospital to school; the CDC is further investigating Return-to-Learn guidelines (CDC, 2018).

This case study provided further insight into existing collaboration between school and medical service providers with a school transition model involving a TBI teacher consultant. Moving from the medical model to educational policy and practice, Savage, DePompei, Tyler, and Lash (2005) focused on the difficulty of penetrating the special education system in American schools for those students with an acquired disability. In the United States, schools are designed to identify special needs early. These students *grow up* in the special education system (Savage et al., 2005). In the days, weeks, and months following injury, parents of students with TBI are emotionally overwhelmed and confused by the healthcare system, insurance coverage, and special education programs. Pediatric patients who are transferred from trauma hospitals to in-patient rehabilitation centers receive individualized transition plans for their return to school. However, abrupt discharge from a hospital requires parents to take on the role of monitoring and advocating in a new world of disability (Savage et al., 2005).

Communication plays a key role in finding the appropriate classification, placement, and services inside the special education system. As Ylvisaker et al. (2001) identified that there is “extreme diversity of TBI” (p. 80), and disability may evolve over time. Each TBI is unique, and assessment may show average knowledge of skills yet fail to capture difficulties

with new learning (Ylvisaker et al., 2001). Schilling and Getch (2012) expressed a consensus opinion: “All those in the student’s treatment and recovery process ... should be consulted in making best decisions for supports and accommodations” (p. 62). Additionally, school personnel must take the initiative to seek information resources about TBI. Savage, et al. (2005) added that the move to inclusive classrooms in the U. S. demands that all teachers, both general educators and special educators, become knowledgeable in TBI.

Medical research on TBI has shown that the body is in survival mode during the first 12 months after injury. The individual with TBI begins to gain awareness of their injury and its social implications about 18 months after injury. Vulnerabilities in intellectual function surface as the individual with TBI is challenged cognitively, and erratic behavior may become symptomatic of such challenges and frustrations. Educators must be aware that TBI is a traumatic event in one’s life, and the process of recovery involves grieving and adjustment to new strengths and challenges as well as social identity.

Chapter 2: Review of the Literature

Overview

The literature on school reintegration after TBI focused on two dominant areas: academic process and social identity. On academic process, authors explored the prevalence of injury, the transfer of information, communication between all caretakers of the student with TBI, and establishment of long-term planning. Research regarding social identity explored family and community support for a student with TBI and the concept of self-perception in relation to age at which injury was sustained and school environment. The literature pertaining to the academic process confirmed that identification of students with TBI in need of special education services is often delayed due to the evolution of the symptoms and deficits. This leads to a large discrepancy between incidence and identification, as discussed by Glang et al. (2008); Chevignard, Toure, Brugel, Poirier, and Laurent-Vannier (2010); and Schutz, Rivers, McNamar, Schutz, and Lobato (2010). In the past year, the focus of the literature has turned to teacher perspectives of TBI and longitudinal case study analysis of school reintegration.

Case Studies

Field research conducted on TBI has included both emic and etic case studies, the insider perspective of events and happenings as well as those explained and interpreted by an external observer respectfully (Kottak, 2006).

Emic TBI case studies. In the literature on TBI, the subset of school reintegration ranges from prevalence of TBI in schools, prescribed strategies, and communication with families. Ylvisaker et al. (2001) best articulated the themes of services provided by public schools. Simpson, Simons, and McFadyen (2002) emphasized the social work services

needed to complement academic accommodations. Conoley and Sheridan (1996) elaborated on the social services needed for families of the student with TBI. Clark, Stedmon, and Margison (2008) provided a strong qualitative case study model in *An Exploration of the Experience of Mothers Whose Children Sustain Traumatic Brain Injury (TBI) and Their Families*. These studies informed the researcher's prior conceptual framing and study on the child's experience of school re-entry following TBI.

Etic case studies. Most recently, the literature has expanded to exploring teacher beliefs and practices regarding concussions, coordination of care between hospitals and schools, and the creation and implementation of Return-to-Learn protocols. Literature on the delivery of special education services for students with TBI focused on cognitive impairments, as they impact executive function and academic accommodations. Founding literature on personnel qualification in special education presented by Porter (2000) and expanded by Schilling and Getch (2012) provided a firm understanding of the issues facing school special education programming. A growing body of literature in the field of neuroscience focused on educational experiences and needs of school-aged youth with TBI returning to school (Chevignard et al., 2010; Haarbauer-Krupa, 2017; Hawley, Ward, Magnay, & Mychalkiw, 2004; Kahn, Linden, McKinlay, Gomez & Glang, 2018; Todis, McCart, & Glang, 2018).

Since the passage of the Individuals with Disability Education Act (IDEA) in 1990, much research has been conducted on the implementation of this legislation and coherence with No Child Left Behind (NCLB) of 2002. The literature on the national implementation of IDEA, as highlighted by Katsiyannis and Conderman (1994), served as a foundation to this study as well the review of state legislation, the Tommy Manning Act and the Zachary

Lystedt Law, which served as examples of the Return-to-Play legislation that has been enacted in all 50 states.

Medical vs. Social Models

As children with brain injury are the focal point of this study, research questions delved into how the support of medical and school personnel intersect in providing services to these children while considering parents' desires as well. Each of these spheres of support follow a different philosophy in their work with these children. The medical model subscribes to a mantra of *we'll fix you*, whereas the family champions the social model of *you belong as you are*. The school endorses a transitional special education perspective of *we'll help you deal with it*. The contrast of medical and social models of disability is apparent in education due in large part to the structure of special education programs and their accountability outlined in legislation.

The medical model of disability assumes a clinical diagnosis and a therapeutic *fix*. Historically, this approach values the fix as the means to be a productive contributor to society. If the fix doesn't work, the individual with disability is removed from society, as they have no value. As Barnes (1997) illustrated, "Disabled people's oppression in terms of material consideration" (p. 11) directly correlates with capitalistic frames of productivity and contribution throughout Western culture. Thus, special education was grounded in an attempt to transform individuals with disabilities from consumers to producers, ultimately creating separate educational institutions for said individuals (Goodheart, 2004).

In the United States, the introduction of the social model in the late 20th century changed public attitudes and promoted legislation to address accommodation and inclusion of individuals with disabilities in society. With the influence of Shapiro (1993), the adoption

of the Americans with Disabilities Act and the Individuals with Disabilities Education Act revised the schema for special education.

After a long period of institutionalization, special education programming focused on life skills and vocational training rather than academic rigor. Building on the cornerstone of the medical model, behaviorism and constructivism emerged, further theorizing education as a means to address the medical problem with each individual child.

Sociocultural theory diverts from the medical model of disability and embraces the social model's emphasis on integration. Exploring the child's participation in community, both formal and informal institutions, their interpersonal communication and collaboration with others, and their personal growth through activity, provides the educator with a holistic view of the child with disability (Rogoff, Baker-Sennett, Lacasa, & Goldsmith, 1995).

Contribution to Conceptual Framework

At the beginning of the researcher's journey into school reintegration, the most prominent site for work on family, school, and hospital relations was the CBIRT at the University of Oregon led by Ann Glang. In 2011, CBIRT developed the School Transition Re-entry Program (STEP), shown in Figure 1, which identified the three spheres of support for students with TBI: hospital staff, school personnel, and parents. The STEP model proposes that hospital staff and school personnel disseminate information to parents through top-down communication rather than through an exchange as suggested between hospital staff and school personnel.

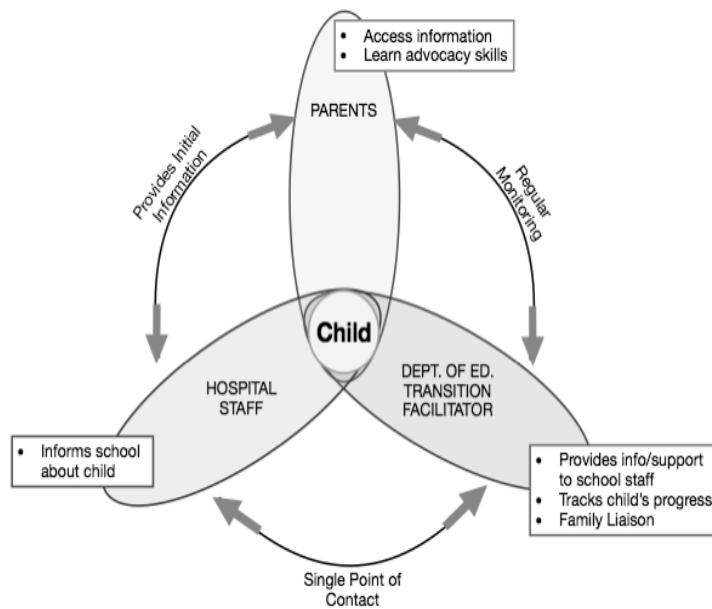
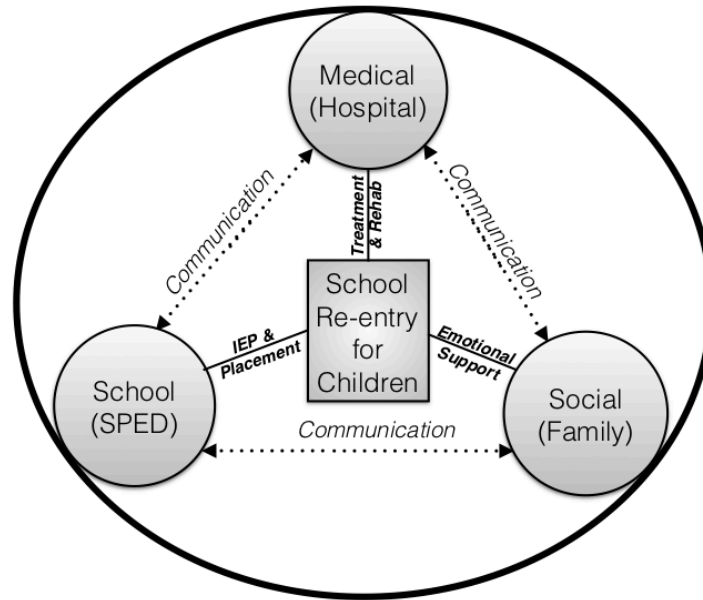


Figure 1. School transition re-entry program (STEP, CBIRT, 2011). Adapted from *School transition & re-entry program (STEP): Improving the hospital-school transition of children with TBI* (Unpublished report) by B. Todis and A. Glang, 2008, The Teaching Research Institute, Eugene, OR. Reprinted with permission.

Building from STEP model, the researcher identified the same parties as spheres of support for students with TBI and focused on the connections between the child and their family with the school during the school re-entry process shown in Figure 2.



*Figure 2. Three spheres of support model (Crylen, 2015). Adapted from “Socio-emotional support needs for re-entry to school after traumatic brain injury,” by A. E. Crylen, 2015, *Including Learners with Low-Incidence Disabilities (International Perspectives on Inclusive Education, 5*, 159-179. Emerald Group Publishing.*

In the current conceptual framework, the researcher extends the previous conceptual framework as shown in Figure 2, pulling the three spheres into a chronological map of recovery and school return (see Figure 3). Recognizing that each sphere provided different supports to the student with TBI, the Crylen (2015) study revealed that the communication between the medical providers and the school were one-directional, as doctors provided a letter of diagnosis for TBI with suggested accommodations to the school via the parent. This documentation was required to begin formal special education services through a 504 plan or IEP. The researcher found that in this process, the parents expressed a concern that they were in the interlocutor role between the medical and educational entities for the remainder of the student’s recovery and return to school.

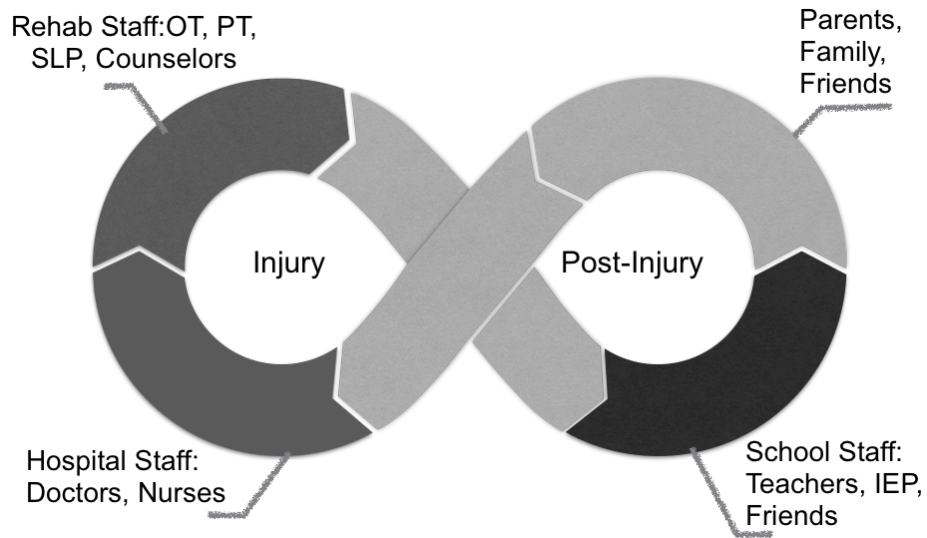


Figure 3. TBI school re-entry communication flow (Crylen, 2015). Adapted from “Socio-emotional support needs for re-entry to school after traumatic brain injury,” by A. E. Crylen, 2015, *Including Learners with Low-Incidence Disabilities (International Perspectives on Inclusive Education, 5, 159-179*. Emerald Group Publishing.

As illustrated in Figure 3, with the spheres separated into three stages of experience, the process was examined using an organizational theory framework to dig deeper into the elements of bounded rationality, including environment, knowledge creation, and decision-making. Figure 4 shows how the representation has changed to suggest that a student experiences a life change due to injury, receives medical diagnosis and treatment, which then drives and shapes the education of the student with TBI.



Figure 4. Current stages of TBI reintegration process.

Thus, school reintegration is a causal process driven by the medical model, not the social model evidenced by the documentation driven by the professional protocols in each stage. As shown in Table 2, each stage of the process consists of a unique environment, set of stakeholders, record of documentation, action of clearance to the next stage, and knowledge base.

Table 2

Characteristics of Stages of TBI Reintegration

Characteristic	Injury	Medical	School
Environment	Chaos	Structured	Splintered
Stakeholders	Those at the incident including Parents/ Caretakers	Medical Professionals (EMS, Hospital, Specialists, Pediatrician)	Educational Professionals (general education teacher, special education teacher, school principal, TBI consultant)
Documentation	Recounted Narrative (memory)	Official Record (admission, exam, treatment)	Practice (accommodation, interment) Legal Protection (IEP, 504)
Clearance to next stage		Return-to-Play	Return-to-Learn
Knowledge base	Social Emotional-Self-esteem, Interaction, Belonging	Physical - Neuroscience	Cognitive - Constructivist (gen. ed.) Behaviorist (special ed.)

Using Cyert and March's (1963) Carnegie model, the researcher framed the school reintegration process into a factory model of Return-to-Learn. The task environment is the injured youth with the concussion as the task. The hospital is the institutional environment with the technical core consisting of the diagnostic exams (Glasgow Coma Scale, disability rating scale, MRI scans), the surgical procedures, and rehabilitation therapies, as the cultural environment at the end of the first stage involves a physically and cognitively functioning youth. In stage two, the task environment involves the post-injury functioning youth with medical clearance who moves into the institutional environment of the school's multi-tiered systems of support (MTSS), with the technical core of assessments, interventions, accommodations, modifications, and formalized 504 Plan or IEP. The cultural environment thus supports the injured student participating academically at the full extent of their capacity.

Contribution to the Field

Over the past 20 years, research in pediatric TBI has extended beyond the medical clinical trial and surfaced in special education case studies. Mainstream media echoes the current educational focus on sports-related head injury and concussion in secondary schools. Although early identification has remained a constant tenet in special education, recent literature suggested more professional collaboration in school reintegration for students with TBI: "A critical factor contributing to the identification of students with TBI for special education is the link between hospital and school" (Glang et al., 2008, p. 477). This research study examined how the link is manifested through policy, protocol, and practice.

Reflecting the paradigm shift from medical to social model, the literature on school reintegration after TBI has grown more inclusive of acquired disability. However, the

tension between these models articulated in disability studies literature may prove a hindrance to the field of special education embracing a holistic multi-disciplinary approach to school reintegration. Further research is needed concerning the bridging of the two perspectives, especially in relation to reauthorization of disability law including the IDEA and the Americans with Disabilities Act.

Current research explores school professionals' experience working with students with TBI, the perceptions of educators, and the call for preferred interventions for students with TBI (Glang, McCart, More, & Davis, 2017; Kahn, Linden, McKinlay, Gomez & Glang, in press; Nagele, McCart, & Hopper, in press). Yet, there is an absence of narrative addressing the decision-making processes involved during the reintegration process from the perspective of the educators working with the student with TBI. This could be attributed to the known prevalence of students with TBI in schools and/or comorbidity, or other impairments, masking the true population of students with TBI.

This researcher posited that the deeper investigation as outlined in this study contributed a key piece to the puzzle of school reintegration for students with TBI and support of Return-to-Learn policy formation. The researcher's emic and etic lenses appropriately balanced the bias for this research yet offer a unique perspective on the process. Specifically, the absence of literature on stigma and inclusion for the full spectrum of TBI suggested the need for case study and longitudinal research in this area. Ethnographic exploration of the educators' experience as they guide a student with TBI in the school reintegration process provided essential data in building collaborative programming.

Methods of Review

An initial search of literature on school reintegration after TBI was conducted in May 2013 as part of a disability studies policy proposal paper. Further investigation of this process revealed three spheres of support for an individual recovering from TBI embedded in both the medical and social model of disability. A deeper investigation of the literature was conducted in February and March 2014 and again in September 2017 with a focus on educational leadership. A broad search of literature was conducted using three databases: World Cat, EBSCO, and Web of Science. A primary key word search included pediatric TBI, school re-entry, cognitive impairments, acquired disability, academic accommodations, IEP process, Return-to-Learn, education leadership, and reintegration.

Criteria were used to sort through the found articles. Literature considered for this review addressed school students aged 5 to 18 with no restriction on severity of injury—mild, moderate or severe TBI. Excluded from this search were non-English articles focused on individuals with TBI who were older than school-age, predominately clinical, or legal case studies. Fifty-three articles, five books, and two webpages met the criteria. Through initial abstract scanning, literature was sorted into four themes: medical, social, special education, and educational policy perspectives. Literature was then sorted into sub-categories within each theme: medical–neurological science and rehabilitation therapy, school–processes and social behavior, family–legal status and community integration, and educational leadership–leadership theories and decision-making. For the purposes of this review, a sharper focus was given to the 37 articles within the school theme.

Results of Review

Three significant themes surfaced in the review of literature with the concentrated focus on the school perspective pertaining to school reintegration after TBI: academic process, social identity, and educational leadership. Within the theme of academic process, authors explored the prevalence of injury, transfer of information, and communication between all caretakers of the student with TBI, and establishment of long-term planning. Within the theme of social identity, research explored family and community support for a student with TBI, self-perception in relation to age at which injury was sustained, and school environment. Educational leadership research explored theories of leadership and decision-making models applied during the reintegration process.

Academic process. Throughout the literature pertaining to the academic process, it was evident that identification of students with TBI in need of special education services is often delayed due to the presentation of the symptoms and deficits over time. This leads to a large discrepancy between incidence and identification as discussed by Glang et al. (2008), Chevignard et al. (2010), and Schutz et al. (2010).

Prevalence. In examining data from the United States Department of Education, Office of Special Education Programs (OSPE), several researchers found statistical discrepancy in the prevalence of students with TBI and those receiving special education services (Glang et al., 2008; Schutz et al., 2010; Ylvisaker et al., 2001). According to OSPE, in the 1997–1998 school year, nearly five million students received special education services under IDEA. More than 50% were identified with a specific learning disability label; however, only .02% was labeled under the TBI classification (Ylvisaker et al., 2001). The investigation into correct identification of students led Schutz et al. (2010) to conclude

“only one to two percent [of children permanently disabled by TBI returning to school] are classified as students with TBI, qualifying them for the services they need for education.... [which] places 98 to 99 percent at risk of academic failure and personal maladjustment” (p. 55).

Glang et al. (2008) conducted a case study in Portland, Oregon, to illustrate this occurrence of misidentification. The study showed that 25% of the children with TBI who re-entered school were identified with formal services through an IEP or 504 plan, and 41% of this student population with TBI received informal services and accommodations such as schedule changes, rest breaks, and so on, and 18% received no supports, (Glang et al., 2008). Thus, Glang et al. (2008) surmised, “TBI remains a low-incidence disability in the field of special education in spite of its high incidence and prevalence. This discrepancy perpetuates a cycle of under-funding, inadequate teacher training, and inappropriate educational services for this challenging disability group” (p. 478). The recommendation from this study is to implement a TBI screening tool for educators to use rather than a wait-and-see approach.

More recently, Haarbauer-Krupa (2012) found 17% of students with TBI are enrolled in special education services under the TBI category according to the United States Department of Education. However, 60% of students with TBI do not receive services because of delayed presentation of symptoms and the misunderstanding of the need for ongoing monitoring. Chevignard et al. (2010) said, “Deficits may only become fully apparent when development demands increase, and once cognitive processes are expected to be fully developed” (p. 31). Thus, according to Glang et al. (2008), “problems with TBI tend to persist or worsen as children progress through school” (p. 477).

Haarbauer-Krupa (2012) made the recommendation that school speech language pathologists are the best service providers for students with TBI, as they know the medical rehabilitation therapies and academic structures and goals. Although this may be ideal, due to the limitations of insurance coverage in TBI recovery, families turn to schools for long-term services. Haarbauer-Krupa (2012) continued, yet from the school perspective, “Schools are mandated to devise individual plans to meet a child's learning needs rather than to achieve recovery to maximum potential” (p. 12). The differential in outcomes is illustrated in the transition planning.

Transition planning. Beyond the discrepancy of prevalence, research pointed to the need for educators to receive more accurate and pertinent information and training in the assistance of school re-entry for students with TBI. This analysis shows injury severity and hospital-school transition services are related to school provision of formal services, as defined under IDEA and Section 504 of the Rehabilitation Act. Literature drew heavily on program evaluation of current and proposed rehabilitation plans and facilities. Taking a holistic neurorehabilitation approach to school re-entry, which builds self-esteem and skills to promote independence to establish a *new way of life*, Marcantuono and Prigatano (2008) proposed an outpatient program—preparing patients to be students with clinical staff as their coaches.

Bridging begins at the time of admission to the program, and therapists work with special education “tutors, [who] are contracted by the child's school district through the local county's Department of Special Education and work within context of the pediatric neurorehabilitation program” (Marcantuono & Prigatano, 2008, p. 462). Medical research proves the current challenges that insurance limits support for rehabilitative services and

schools deem acquired brain injury a medical condition outside of their financial support, (Marcantuono & Prigatano, 2008).

Savage and colleagues (2005) directed focus to the difficulty penetrating the special education system in American schools. In the US, schools are designed to identify special needs early. These kids *grow up* in the special education system (Savage, et al., 2005). In the days, weeks, and months following injury, parents of children with TBI are emotionally overwhelmed and confused by the health care system, insurance coverage, and special education programs. Pediatric patients who are transferred from trauma hospitals to in-patient rehabilitation centers receive strong transition plans as they are moved into school. Quick discharge from hospital requires parents to take on the role of monitoring and advocating in a new world of disability (Savage et al., 2005).

Once inside the special education system, communication plays a key role in finding the appropriate classification, placement, and services. Ylvisaker et al. (2001) and Glang, et al. (2008) identified an *extreme diversity of TBI* as disability may evolve over time. Each TBI is unique, and assessments may show average knowledge of skills, yet fail to capture difficulties with new learning, (Ylvisaker et al., 2001). Schilling and Getch (2012A) expressed a consensus opinion: “All members of the child's treatment and recovery process should be consulted in making best decisions for supports and accommodations. Additionally, school personnel must take initiative to seek information resources about TBI” (p. 62). Savage et al. (2005) added that the move to inclusive classrooms in the U.S. demands that all teachers, both general educators and special educators, become knowledgeable in TBI. A comprehensive picture of students’ abilities and challenges require academic and medical cognitive and functional evaluation.

Finally, screening tools suggested in Glang et al.'s 2008 study are needed both in identifying and monitoring TBI. Cronin (2001) added, "Children with a history of TBI should be screened regularly because some cognitive problems emerge years after the injury as developmental demands on a child increase" (p. 377). Although the medical model dictates routine follow-up after TBI, Mealings and Douglas (2010) suggested that both hospital and school monitor as the student is going back to school, four months after they return, on a regular schedule during the remainder of their school career, and when they begin moving on from school.

Social goals. The literature pertaining to social goals showed evidence of a strong disconnect between self and others for the student with TBI. Identity and inclusion are greatly influenced by stigma and acceptance by the community. As earlier described, neurorehabilitation addresses some of these issues, yet social workers are the facilitators of social stage of recovery and school re-entry as discussed by Mealings and Douglas (2010); Simpson, Simons, and McFadyen (2002); and Roscigno, Swanson, Vavilala, and Solchany (2011).

Identity. Literature focused on the prominence of concussion during sports, making *athletic return-to-play* the focus emphasizing on returning to physical activities with prevention of re-injury (Sady, Vaughan, & Gioia, 2011). A campaign in professional sports is trying to diminish the *badge of honor* and bring attention to head injury and accountability to teams and leagues. Unfortunately, these efforts leave the student with TBI at a loss in understanding their own injury and its repercussions for the future. Measurement of quality of life for children with TBI is still in the early stages, and historically, parents have served

as proxy (Ravens-Sieberer, 2002). However, qualitative research in the nursing and social work field has illuminated the struggles TBI brings to a child's sense of self.

Using a grounded theory approach to identity in adolescents with TBI, Australian researchers Mealings and Douglas (2010) found three key themes: sense of self, awareness of changes, and identification of supports. Learning that "socialization at school was described as a core function of school life and therefore an integral component of the student's identity" (p. 7), Mealings and Douglas developed a model for attuning to the internal and external changes, the quality of relationships, and style of assistance that students with TBI experience. As the findings of their study suggested, "It was clear that students only saw changes as successful when they were included in developing the strategies or changes, and when they felt the person suggesting or assisting in these changes understood the student" (p. 12). Giving voice to the student during rehabilitation empowers and energizes his or her sense of identity and belonging.

In the field of social work, Roscigno et al. (2011) found that social support is imperative to how students adjust to change and loss. The phenomenological investigation showed six main themes that illustrated the common experiences of life following TBI over time:

1. It is like waking up in a bad dream;
2. I thought going home would get me back to my old life, but it did not;
3. Everything is such hard work;
4. You feel like you will need to be like the person you were before;
5. It is not all bad; and
6. Some people get it, but many people do not. (p. 6)

Framing these experiences on a spectrum of *everydayness*, defined as a state of psychological comfort with self not dependent on other's perceptions, tracks recovery and reintegration socially. Roscigno et al. (2011) further explained, "The quality of existing or new supporting relationship was reported as more important to [participant students] than the quantity of such relationships" (p. 12). Further, the social model emphasized independent living yet full participation in the community, which is translated in special education as inclusion.

Peer inclusion/stigma. TBI is an invisible disability often hidden, as there are typically no physical markers. However, comorbid impairments such as slurred speech and mobility challenges may be recognizable in social environments. Although extensive educational literature promoted inclusion, the research on inclusion for students with TBI dated to the late 1980s. Generally, TBI is unexpected, and the parent's role in finding supports and the school's perception of the child as disabled is a shock. Martin (1988) said, "The parents of a TBI student are much less likely to be able to advocate effectively for their youngster's special educational needs than the parents of a child born with disabilities who have learned over time how to work with the educational system" (p. 471).

In a UK study, Hawley et al. (2004) found almost one third of teachers were unaware that the child had suffered a TBI. The most usual source of information of the injury came from parents. Although visible signs of injury are not seen, changes in behavior are quickly noticed. Simpson et al. (2002) addressed the negative social stigma associated with brain injury due to a lack of awareness: "Members of the general community expect socially appropriate behavior from a child or adult with TBI as there is no obvious sign of

disability.... Personality changes after TBI can result in inappropriate behavior, which leads to social isolation” (p. 31).

Arguing that social workers are best skilled in addressing stigma, social isolation, and exclusion from community, Simpson et al. (2002) suggested deviating from the traditional grief model and focusing on four *adjustment tasks*; through counseling, social workers can support individuals with TBI by helping them to understand their injury, restructure everyday life, reintegrate their capacities into a new sense of self, and gain acceptance through processing emotions. As the findings of Simpson et al. suggested, “For children with TBI, there is a focus on the future and ‘what they will be, which often reflects the unchanged pre-injury hopes and expectation of the parents” (p. 32).

Educational leadership. An application of existing school leadership frameworks used in American schools to assess academic, social, and emotional supports for returning students with TBI was presented in the research. The evidence of a strong presence of distributed leadership and theory of action in special education needs to be explained to parents of children with TBI. The literature further revealed decision-making practices of educational leaders who are driven by micro-politics of special education and restrained by the bounded rationality of their school systems.

Paradigms, mental models, mindsets. A historical look at the field of special education showed a prominent paradigm shift from the medical model of *fixing* handicapped students to the social model of *inclusion* of students with disabilities. It should be noted that a handicap is an impairment that restricts what one wants to accomplish, and disability is the consequence of an impairment.

The contrast of the medical and social models of disability is apparent in education due in large part to the structure of special education programs and their accountability outlined in legislation. The medical model of disability assumes a clinical diagnosis and a therapeutic *fix*. Historically, this approach values the fix as a means to be a productive contributor to society. Barnes (1997) described “disabled people’s oppression in terms of material consideration” (p. 7); if the fix doesn’t work, the individual with disability is removed from society, as they have no value. Barnes’ concept directly correlated with capitalistic frames of productivity and contribution throughout Western culture. Thus, special education was grounded in an attempt to transform individuals with disabilities from consumers to producers, ultimately creating separate educational institutions for said individuals (Goodheart, 2004).

In the United States, the introduction of the social model in the late 20th century changed public attitudes and promoted legislation to address accommodation and inclusion of individuals with disabilities in society. With the influence of the work of award-winning journalist and congressional reporter, Joseph Shapiro (1993), the Americans with Disabilities Act (ADA) was adopted and the Individuals with Disabilities Education Act (IDEA) revised the schema for special education.

After a long period of institutionalization, special education programming focused on life skills and vocational training rather than academic rigor. Building on the cornerstone of the medical model, the emergence of behaviorism and constructivism further theorized education as a means to address the medical problem with each individual child.

Sociocultural theory diverts from the medical model of disability and embraces the social model’s emphasis on integration. Exploring the child’s participation in community, in

both formal and informal institutions, their interpersonal communication and collaboration with others, and their personal growth through activity, provides the educator with a holistic view of the child with disability (Rogoff, et al., 1995).

Decision-making. Application of decision-making concepts applied to the medical model and social model provided evidence of two paths of critical thinking: problem-solving and course-of-action. What is seen as a technical problem for a team of doctors is seen as a dilemma for educators (Cuban, 2001). From the perspective of addressing a technical problem, the medical team stays solution-focused as they decide among options in context of the future (Smith, 2008). Yates (2003) suggested that the medical team evaluates the complete physiology and cognition and utilizes choice through a process of elimination.

From the perspective of dilemma, the educational team finds the challenge abstract, complex with different expectations. According to Smith (2008), when a student's need is identified, the problem is one of performance and design as the educators seek to find the root cause and then utilize backwards-mapping to create a new learning model. As schools are limited in resources, Yates (2003) suggested that the educators construct a solution. Given the legal parameters, Bernard's (1938) creative and delegated sources would dominate the action taken in the decision-making process.

Duffy (2009) discussed how paradigms, mental models, mindsets, and behaviors are often interlaced in systematic change as proposed in the *Nested Theories of Action*. Adapting from this nested framework in Figure 5 and using terminology of Argyris and Schön (1978), it may be suggested that special education is in a the transition of *espoused theories of action*, drawing from both models, while adopting the social model's favored *theories of action in use* according to the Individuals with Disabilities Education Act, 2004.

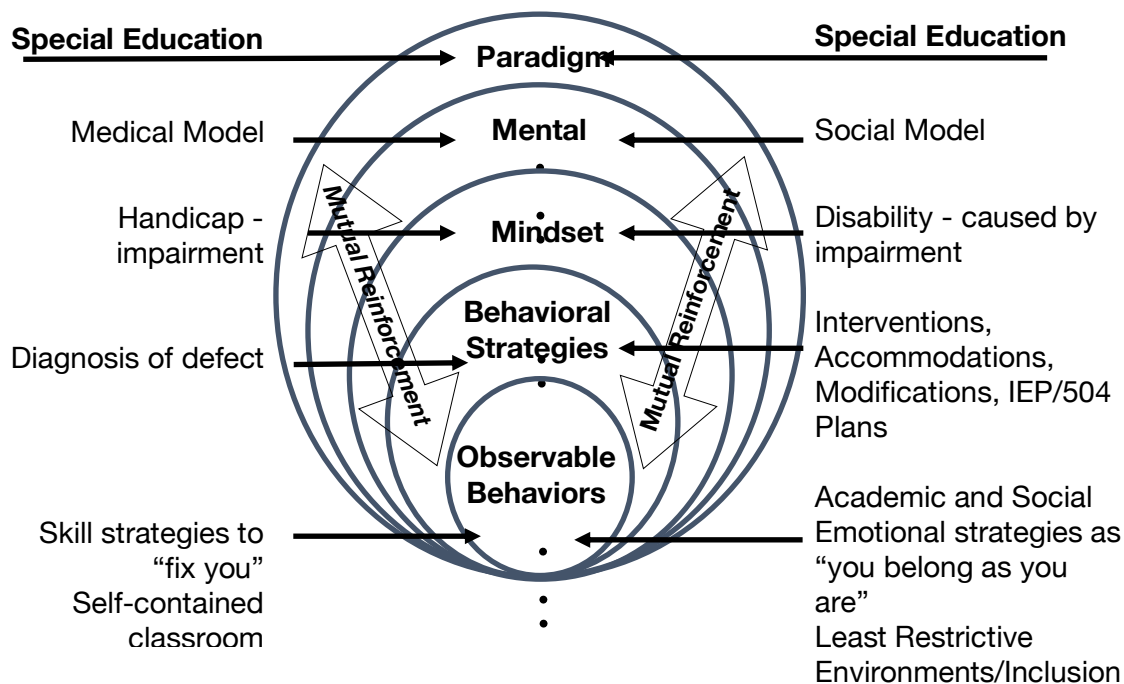


Figure 5. Special education nested theories of action. Adapted from *Paradigms, Mental Models, and Mindsets: Triple Barriers to Transformational Change in School Systems* by F. M. Duffy, 2009, *International Journal of Educational Leadership Preparation*, 4(3), n3. Reprinted with permission.

Theoretical Frameworks

To better understand how educational leaders make decisions, the researcher used a normative approach found in organizational theory discussed by Hoyle (1986) and Hargreaves and Hopkins (1994). Bush (2015) noted that “Organizational Theory enhances understanding of leadership and management in schools” (p. 35). A normative rather than descriptive approach allowed this researcher to advance previous work on the needs of the student returning to school after sustaining TBI (Crylen, 2015). Bolman and Deal (1991) noted that the normative approach to organizational theory allowed a focus on the parties

involved in the reintegration of the student with TBI rather than the entire school organization.

Schools are open systems with identified goals, which give and receive feedback to and from the environment. In this case study, the school's inputs are the curriculum/instruction and medical diagnosis of the student. The processes of student identification of need involve teams of educators, both generalists and specialists, and the output is assistance with or adjustment of the curriculum/instruction for the student with need. The measurable outcomes are test scores reflecting academic success. Analysis of narratives from this case study, created new knowledge of TBI in the context of academic learning, motivating different behaviors and challenging existing attitudes and values in the field of special education.

Working in a bounded rationality, school leaders continually address constraints and trade-offs on the decision-making process, as the organization maintains a balance environment of agreement, cooperation, culture, and structure. Simon (1997) explained that working in the rational model, school leaders find all available alternatives, evaluate those alternatives according to consequences, and choose the alternative that best accomplishes the goal with the least amount of resources. Choo (2005) said, "When both the goals and the available alternatives of a decision situation are clear, the organization reduces the uncertainty of decision making by specifying decision rules and routines" (p. 212). Thus, schools use the Cyert and March (1992) Carnegie model of decision-making because it relies heavily on rules and procedures for making decisions. Schools practice uncertainty avoidance by using decision rules to focus on the short run rather than the long term. The

feedback loop is used to reinforce the standardization of these decisions as to maintain simple rules that have wide application.

Two models of decision-making best apply to the organizations participating in this study. The Cyert-March (1992) Carnegie model often identified as the factory model supports the dominant educational organization. However, many educational leaders would argue that Choo's (2005) transformation process is appealing to the new knowledge age paradigm of teaching and learning (Duffy, 2009). This study identified the model used by the medical organization and the educational organization. Following that, the examination of how the two organizations interact with each other employed Hoy and Miskel's (2005) five-step decision-making process of recognizing, analyzing, identifying criteria, creating a plan, and implementing action.

As Choo (2005) described, sense-making is essential to the decision-making process. With the emergence of a new disability such as TBI, much sense-making is involved in understanding what this condition entails. This study examined the distributed cognition discussed by Hutchins (1995) about the physical, cognitive, and learning needs among the individuals within both medical and educational organizations.

From informational interviews with the Lake Michigan Regional Education Service Agency, it became evident that a distributed leadership approach is used when working with students identified with learning needs. Therefore, this study used Argyris and Schön's (1974) theories of action in examination of the governing variables, strategies, and consequences of the decisions made. It was anticipated that the context of action was the tension between the agency of supports, Lake Michigan Regional Education Service Agency, and the distribution of services in the school district and among school personnel.

Many educators would agree that heuristic bias is present in schools, as the ethos of education is to support a student's growth in academic skills and application as well as soft skills of socialization. School leaders promote political agendas often grounded in their heuristic bias, e.g., create a district and homeschool partnership offering non-core academic courses to receive 0.5 full-time equivalent (FTE) state funding per student, who is receiving great socialization and enrichment opportunities.

Many educators identify with the *Ethic of Care* as they see each of their students as unique learners with different strengths and needs. Educational practitioners would extend this to the field of special education curriculum and instruction. However, educational leaders with administrative roles in special education are situated in the *Ethic of Justice*, as there are clear rules, laws, policies, and codes of conduct (Shapiro & Gross, 2013). The field of disability studies and the *Ethic of Critique* are often articulated as social justice, as they call attention to the inequalities and challenge the norms of special education (Marshall, 2004).

Artiles (2003) quoted Smith (2001) who said the following:

The cornerstone of special education's original identity was grounded in a civil rights discourse for people with disabilities. As a result, IDEA was passed to ensure free and appropriate public education, parents' rights to be informed of evaluation and placement decisions (including the right to due process hearings), individualized and nondiscriminatory assessment, individualized educational and related services, education in the least restrictive environment, and federal assistance to support states' and school districts' efforts to educate students with disabilities. (p. 165)

Although, as shown earlier in Figure 4, the injured student and the medical diagnosis and treatment drives the educational teaching and learning for the student post injury and

their return to learning, this study focused on the collaboration and communication between school and medical team through the reintegration process. Therefore, the researcher examined the school organization and structure supporting students' reintegration by studying the organization's politics, decision-making and evaluation processes, and the community as it pertains to students with TBI. The study explored the identification of TBI, the provided accommodations, the creation of an IEP under the category of TBI, the implementation of modifications, and the layers of teams working on the student case file. Although a focused micro-look at one high school's reintegration process from the perspective of the school leaders—inclusive of regional education service agency consultants, school principal, teachers, and specialists—this case study provided further evidence to understand the macro view of Return-to-Learn for students with TBI.

Summary

Over the past 20 years, research in pediatric TBI has extended beyond the medical clinical trial and surfaced in special education case studies. Mainstream media echoes the current educational focus on sports-related head injury and concussion in secondary schools. Although early identification has remained a constant tenet in special education, recent literature suggested more professional collaboration in school re-entry for children with TBI. Glang et al. (2008) has shown, “A critical factor contributing to the identification of students with TBI for special education is the link between hospital and school” (p. 477). This research study looked at how the link manifests through policy, protocol, and practice.

Reflecting the paradigm shift from medical to social model, the literature on school re-entry after TBI grew more inclusive of acquired disability. However, the tension between these models articulated in disability studies literature, may prove a hindrance to the field of

special education embracing a holistic multi-disciplinary approach to school re-entry. Further research is needed to bridge the two perspectives, especially in relation to reauthorization of disability law including the Individuals with Disabilities Education Act and the Americans with Disabilities Act.

This literature review illustrated an absence of narrative relative to the reintegration process from the perspective of the educators working with the student with TBI. This could be attributed to the known prevalence of TBI schools and/or comorbidity masking the true population of students with TBI. Specifically, the absence of literature on stigma and inclusion for the full spectrum of TBI suggested the need for case study and longitudinal research in this area. Ethnographic exploration of the educator's experience as they guided a student with TBI in the school reintegration process provided essential data in building collaborative programming.

Chapter 3: Research Design, Methods, and Procedures

With a focus on educational leadership, the purpose of this study was to understand the experience of school reintegration from the perspective of the school administration and faculty supporting students with TBI, and their families. Descriptions included the school reintegration process for students with TBI from the perspectives of the hospital and school communication, decision-making, and cultures, to help explain students' academic and socio-emotional successes. The literature review revealed a gap in research on the communication and collaboration needed between the medical and educational service providers.

Research Design

The generic, qualitative interviews in the researcher's previous study (Crylen, 2015), which focused on the sense-making of the whole experience of TBI in school-aged children, gathered multiple narratives and thick description of the entire experience from injury to the return to school, adding qualitative breadth to the phenomena of school reintegration after a student sustains a TBI. Thematic analysis revealed three stages in the journey of recovery, including the injury event, subsequent medical diagnosis and treatment, and return to school. The participant families provided extensive information on the first two stages yet brushed broad strokes of frustration and confusion during the third stage. The generic theme was frustration and confusion during the school reintegration process and a lack of confidence in the educators working with their child.

The present study expands upon the researcher's previous work with qualitative depth to the phenomena of school reintegration. Qualitative research is unique from other social science research, as it explores meaning in people's lives, represents views and perspectives, attends and accounts for contextual conditions, uses existing and new concepts to explain

social behavior and thinking, and gives relevance to multiple sources of evidence (Yin, 2016).

Research Tradition

School reintegration is a complex process. Case study methods were appropriate for providing a vivid, in-depth examination of a social phenomenon (Creswell, 2007). The researcher anticipated that relationships with participants could vary and possibly lead to co-production of knowledge (Yin, 2016). Thus, analyzing the school reintegration at one high school provided insight into some of the factors that shape practice and the decision-making processes in which educational leaders engage and make meaning in their support of students with TBI.

In this study, the researcher conducted the case study from a grounded theory perspective, as its theoretical foundations are drawn from symbolic interactionism (Jeon, 2004). Starks and Brown Trinidad (2007) explained:

Grounded theory originates from sociology... which posits that meaning is negotiated and understood through interactions with others in social processes [which] have structures, implied or explicit codes of conduct, and procedures that circumscribe how interactions unfold and shape the meaning that comes from them. (p. 1374)

The aims of this study were to describe and conceptualize the school reintegration process involved when medical professionals work and interact with educators to develop an explanatory distributed leadership theory of the process.

Setting

Pseudonyms were used in reference to all places, people, and organizational names used in this historical case study; however, the researcher catalogued all referenced materials.

This study evolved over the 2018–2019 academic year. Given the time constraints of this study, proximity was of great importance to the researcher. According to the Michigan Department of Education, 206,317 students received special education services, 13% of the total student population. Of that group, 526 students were designated in the TBI special education category, about 0.3% of all special education students served in the state (Michigan CEPI, 2018). In the Lake Michigan Regional Education Service Agency (LMRESA, pseudonym), 6,121 students receive special education services, of which 17 were labeled as having experienced TBI.

Additionally, 974 students (15.9%) served were identified in the Other Health Impairments (OHI) category (Michigan CEPI, 2018). According to members of LMRESA special education team, many students under the other health impairments category may have acquired a brain injury as well, but they are recognized for their comorbidities such as behavior changes, sensory loss, or learning challenges. Notably, TBI is not a homogenous term and encompasses a wide spectrum of diagnosis—mild, moderate, and severe. Federal and state special education curricula are only targeted at the severe range of the TBI diagnosis spectrum, leaving many students to fall through the gaps or categorized incorrectly.

Given the proximity of the setting and the prevalence of TBI and OHI, field research was conducted in LMRESA, one of a select group of regional education service agencies that offer TBI transition services to students in the State of Michigan. Subsequently, this study was conducted within one of eleven the public-school districts which has an established rapport with a sports medicine clinic within the local hospital. This hospital and LMRESA work closely with the Brain Injury Association of Michigan (BIAMI), a resource for individuals and families with brain injury that provides support through online, telephone,

and in-person services. Additionally, LMRESA, the high school, and the sports medicine clinic use the Return-to-Learn protocols suggested by the CDC (2018).

Participants

This study focused on the participants in the transition from Stage 2 (from medical diagnosis) to Stage 3 (returning to school). LMRESA identified and provided access to educators (TBI teacher consultant, school administrators, classroom teachers, and counselors), who worked with students returning to school after sustaining TBI. As one of a select group of regional education service agencies in Michigan, the educators recognized the benefit of this study in the advancement of the field of educational leadership and student services. LMRESA provided a letter of agreement to participate in this study.

The researcher used a targeted sampling strategy to select the candidate school participating in the study, which allowed the researcher to discover, understand, and gain insight throughout the complete process (Merriam & Tisdell, 2016). Given the finite population of students with TBI, the targeted sampling required the researcher to ask LMRESA to recommend a TBI teacher consultant from their team whom the researcher interviewed as the consultant took on cases of school reintegration. This practice allowed the researcher to identify the high school team of educators and subsequent medical professionals involved in the reintegration process from start to finish. Target sampling is useful when working with a hidden population, such as students with invisible disabilities.

The LMRESA TBI teacher consultant identified and facilitated introductions to the high school and medical teams. Introductions were made via email and telephone (see Appendix A), and written consent was granted before proceeding to interviews and observations (see Appendix B). This study focuses on the team supporting students, but

neither the students or their parents were interviewed. The researcher was prepared to expressed consent from parents if a specific child's case was to be discussed in alignment with the Health Insurance Portability and Accountability Act (HIPAA, 1996) and Family Educational Rights and Privacy Act (FERPA, 1974). However, no students' specific cases were discussed, and all participants referred to students in general and without names. The researcher presented benefits of sharing knowledge with other educators, medical professionals, the TBI community, and described how the study could be used to shape future programming and policy as a means of motivating participant involvement on all levels (educators and medical professionals).

TBI teacher consultant. The identified TBI teacher consultant worked on LMRESA teaching team and served as an educator in one of the districts or schools within the regional education service agency.

Teachers. The teacher participants included the content specific teachers who taught students with TBI and the special education specialist who has been consulted with accommodations for students with TBI.

Principal. The principal from the school the students with TBI attend was interviewed to better understand the structure and practices of the school and how current practices and policies may have impacted students' experience in regard to classroom placement and accommodation policies.

Medical providers. The medical provider participants in this study worked in the identified sports medicine clinic where most children with TBI are diagnosed in the area. They included the medical doctor, the speech language pathologist, and the athletic trainer stationed at the high school.

Culture. Deal and Peterson (2016) described the variables of culture that are discussed in this study in terms of the beliefs, perceptions, relationships, attitudes, written and unwritten rules, traditions, customs, and expectations that shape and influence actions and behaviors in an organization.

Data Collection

With the approval of Eastern Michigan University's internal review board (see Appendix C), the researcher collected data via semi-structured interviews with educators, medical providers, and document analysis. Official documentation was requested from the hospital and school in accordance with HIPAA and FERPA as all forms were blank and did not include students' personal information. Data comprised audio-recordings of personal narratives, policies, protocols, documents of hospital policy, documents of school policy, and support materials/guides as the participants' shared their experiences. Table 3 is a matrix showing the relationship of the research questions to the interview subjects, data retrieved, and data source.

Table 3

Data Collection Matrix

Research Question	Interviewee	Data Collection Instrument, protocol	Data Source
How do schools and hospitals communicate during the school reintegration process supporting a student who recently sustained a TBI?	Health Educators	Audio Recordings— Multiple Interviews	Personal Narrative
	School Personnel	Audio Recording— Single Interview Observation	Cognitive interview responses to institutional protocols Observational Field Notes
How do hospital and school make decisions in the school reintegration process for students with TBI?	Health Educators	Audio Recordings— Multiple Interviews	Cognitive interview responses to institutional protocols
	School Personnel BIAMI	Document retrieval Audio Recordings— Single Interview	Observational Field Notes
What are the respective cultures of the hospital and school supporting the student with TBI?			Documents: School policy, protocol, support materials/guides, student IEP file, medical discharge notes Documents: form letters from school and hospital

Interviews. Starks and Brown Trinidad (2007) explained that interviews provide a rich description of the event as “grounded theorists inquire about how social structures and processes influence how things are accomplished through a given set of social interactions” (p. 1374). Interviews of all participants supporting students in the transition from Stage 2 (medical) to Stage 3 (education) guided the research to thematic analysis of communication,

decision-making, and organizational cultures and provided texture and concrete detail to the school reintegration process.

Schein (1990) defined culture as “a pattern of basic assumptions, invented, discovered or developed” by a group as it works through problems, which prove valid and thus, are “taught to new members as the correct way to perceive, think, and feel in relation to those problems” (p. 111). In this study, the researcher identified levels of culture in the observable artifacts present in the settings of each organization, the values, and the basic underlying assumptions articulated in responses (Schein, 2017).

All interviews were guided by a semi-structured protocol that served as an agenda of study questions (see Appendix D). Castillo-Montoya (2016) explained:

A researcher’s interview protocol is an instrument of inquiry—asking questions for specific information related to the aims of a study (Patton, 2015) as well as an instrument for conversation about a particular topic (i.e., someone’s life or certain ideas and experiences). I refer to this balance between inquiry and conversation as an inquiry-based conversation. (p. 813)

The research design followed the standard defined by Maxwell (2013), as cited in Castillo-Montoy(2016), “Research questions are for your understanding. Interview questions are for accessing your participant’s understanding” (p. 813). Thus, in the creation of the interview protocols, each interview question is aligned with research questions yet written differently, (Castillo-Montoya, 2016). The matrix in Table 4 was designed to focus directly on the interview process and simplify the protocols used in previous research. The research questions are in bold and interview questions in regular font. The columns are used to ensure there is an alignment with the desired areas of understanding to access.

Table 4

*Interview Protocol Alignment***Research Question 1: How do schools and hospitals communicate during the school reintegration process supporting a student who recently sustained a TBI?**

Interview questions	Back-ground information	Awareness/ experience collaborating	Understand school reintegration process	Decision-Making Procedures	Knowledge of TBI as disability	Action: MTSS, RTI, IEP
What is your role in the decision-making process for students' return to school?	X	X	X	X		
How does the process begin for students?		X	X			
What factors influence the decision to move forward with school reintegration for students?		X	X	X		
How is it decided to move forward with special education services?			X	X	X	X
Decision to work on the school reintegration process for this student	X	X	X	X	X	

Table 4 *continued*

Research Question 2: How do hospital and school make decisions in the school reintegration process for students with TBI?

Interview questions	Back-ground information	Awareness/ experience collaborating	Understand school reintegration process	Decision-Making Procedures	Knowledge of TBI as disability	Action: MTSS, RTI, IEP
What factors influence the decision-making process for students to return to school?		X	X	X		
How do you decide what evidence or information to use or not to use in making the decision?				X	X	X
How does your team make sense of information and context during the decision-making process?				X	X	X
What are the goals you have for the students and their family in this school reintegration process?			X	X	X	
What are the challenges you face with the student and family in the school reintegration process?		X		X		

Table 4 *continued*

Research Question 3: What are the respective cultures of the hospital and school supporting the student with TBI?

Interview questions	Back-ground information	Awareness/ experience collaborating	Understand school reintegration process	Decision-Making Procedures	Knowledge of TBI as disability	Action: MTSS, RTI, IEP
How does your particular position influence how you plan students' return to school?	X	X	X	X	X	X
What do you consider to be the greatest strengths and successes of your team in the TBI transition process?				X		X
From your perspective how is this transition process different from any other kind of trauma, like a physical ailment?					X	
What are the biggest challenges facing your team during this school reintegration for a student with TBI?				X	X	X

Following a conversational mode, qualitative interviewing employed cognitive interview strategies. Willis (2005) said, “We use cognitive interviewing techniques to study the manner in which targeted audiences understand, mentally process, and respond to the materials we present—with a special emphasis on potential breakdowns in this process” (p.

3). Respondents were asked to *think aloud* their responses to scaffold questions about the current state of TBI school reintegration and the intersection of health rehabilitation and special education law. The goal in qualitative interviewing of this kind was to “hear the meaning of what is being said...as the researcher tries to have participants use their own words, not the researcher’s terminology, and to engage in a topical discussion” (Yin, 2016, p. 143). The researcher used cognitive verbal probing for other specific information relevant to the specific school reintegration case upon which the team was working. Interviews were conducted in-person and on-site at the intermediate district offices, serviced high school, and medical providers’ offices.

At the beginning of each interview, the respondent was asked to introduce the organization’s mission, structure, programs, client population, and culture. As the organization used the words *disability*, *concussion*, or *brain injury*, the respondent was asked to explain the definition of those words in context of that organization’s work. Probing deeper, the respondent was asked if that definition had changed since the organization’s inception or program development, and in what direction that definition was going as programming advanced. The respondent was also asked how the community the organization serves, i.e., families and businesses, understands the words, disability, concussion, brain injury, and what changes in perception or ways of approaching TBI have been noticed over the past three years as the organization has worked with students who sustain head injuries. These data were used for a discourse analysis to understand how the respondents’ use of language constructed the social reality of the injury (Yin, 2016).

The respondent was then asked to identify the ways the needs of a student with TBI were being met through the current school reintegration process, before being asked to

describe how the organization complements existing programming or fills the gap left absent by the national, state, or community structures.

Observations. The culture of the educational programming and patterns of interaction within and across the events of the school reintegration process were observed in this study. Data were collected via interviews with medical providers and educators. Field notes recorded reflective comments and physical descriptions of the setting, people, and observer's comments (Merriam, 2009; Yin, 2016). As suggested by Bernard (2002), the researcher also wrote descriptive field notes that captured *what's going on* by watching and listening.

Analysis

The within-case analysis was used in this study that involved “collecting and analyzing data from a single case; each case is first treated as a comprehensive case in and of itself” (Merriam & Tisdell, 2016, p. 204). Data were collected to learn as much as possible about the case with thematic analysis of communication, decision-making and organizational cultures, to give texture and concrete detail to the school reintegration process.

Document analysis. The researcher included a variety of documents for analysis: medical recommendations forms and the athletic trainer's daily symptom checker forms, which were requested from the school and medical facility. Documents also included school policies, protocols, and documentation of educational services as well as documents of hospital policy, support materials/guides, and observation field notes.

Data analysis. Interviews, observations, post-observation debriefs, and documents were analyzed inductively, using a narrative inquiry or discourse analysis (Yin, 2016). Data were coded using an open coding system as the first step in constructing categories,

reflecting what was seen in the data. The researcher started the initial coding by examining each line of the data and identifying segments that were related to the research questions and revealed information pertaining to the study (Charmaz, 2001; Merriam & Tisdell, 2016). The researcher assigned codes to pieces of the data as the first step in developing categories. The researcher then compared units of information and looked for recurring regularities in the data. Open codes were then grouped using axial or analytic coding. The same coding system was applied to each set of data, to look for recurring patterns or regularities.

Memos were generated to keep track of themes or codes that occurred across multiple sets of data. According to Charmaz (2001), the practice of memo-writing allows the researcher to “Clarify which categories are major and which are more minor. Thus memo-writing helps you direct the shape and form your emergent analysis from the very early stages of your research” (p. 348). As relevant, category names assigned to codes were renamed or transposed as subcategories to accurately reflect what was in the data. Engaging in this cyclical process provided a means to see and think about the data in new and different ways. The coding process shifted from identifying categories that remained close to the data to those that implied broader themes related to the study (Coffey & Atkinson, 1996).

After several cycles of data review, a preliminary coding scheme of categories was assigned. Next, the researcher sorted all of the evidence and grouped each unit of the data into its appropriate category bucket or folder. This process of moving from coding to interpretation needed to be presented in such a way that the data can be displayed, read, and explored easily. Using a visual display of the code tree was needed for organization (see Figure 6). This allowed the researcher to test a tentative coding scheme to see if the codes existed in the subsequent data. Merriam and Tisdell (2016) described this process as data

saturation, or “the point at which you realize no new information, insights or understandings are forthcoming” (p. 183). Here the researcher was looking for patterns and themes as well as contrasts and irregularities in the data (Coffey & Atkinson, 1996). Once a final coding scheme was solidified, selective coding was used to determine tentative hypotheses based on the data. Data were recorded and analyzed using Dedoose, a web-based platform for qualitative data analysis (Merriam and Tisdell, 2016).

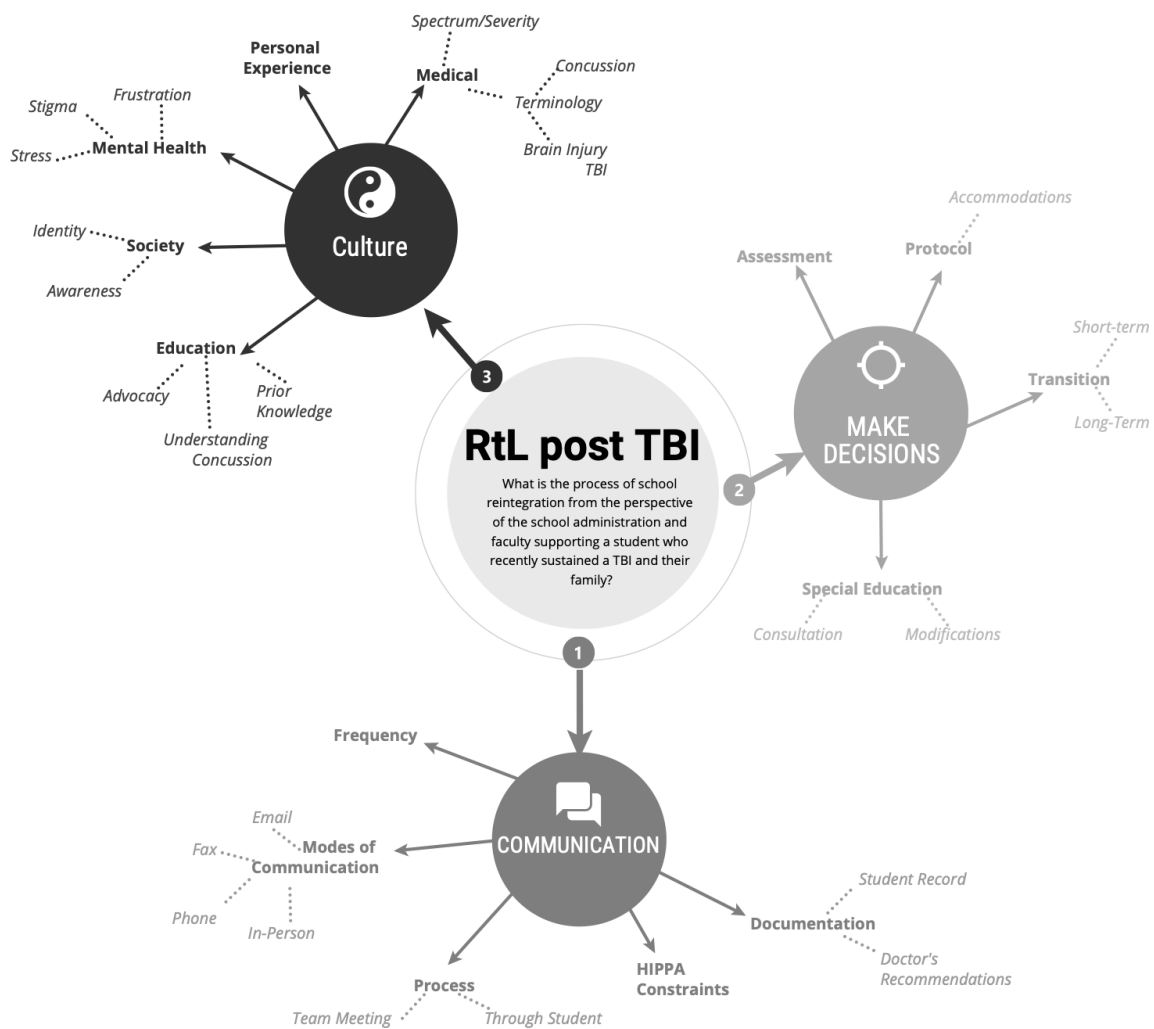


Figure 6. Code tree.

Legal, Ethical, and Moral Issues

Federal legislation protects the rights of individuals with disabilities in the community, workplace, and school, as stated in the Americans with Disabilities Act (1990) and Section 504 of the Rehabilitation Act (1973), and the Individuals with Disabilities Education Act (2004). The medical community has done extensive study into diagnosing brain injury, identifying areas of vulnerability, and creating therapies for recovery. School officials understand that brain injury is a disability under the Individual with Disability Education Act and that students are eligible for special education services. However, there are no formal regulations on the transfer of information or services from the medical to the educational settings during recovery. This is compounded by the lack of articulation, understanding, and consideration of the unique needs of a student with TBI.

Yin (2016) noted that as research participants are purposefully selected from a hidden population, samples are subject to numerous biases of subjectivity. In this study, the TBI teacher consultant had previously established relationships with the medical team at a local hospital/medical clinic, and the school principal and counselor who have worked with students with TBI and their return to the classroom. To minimize the bias, Heckathorn (1997) developed respondent-driven sampling to provide information-rich sources and ties within a social network, which further advances the targeting sampling of this study. In this study, the researcher asked the high school counselor to recommend and introduce core subject and special education teachers who have had students with TBI. Additionally, the speech language pathologist and medical doctor at the medical clinic recommended the researcher interview the athletic trainer, a hospital employee contracted by the high school.

Understanding that the researcher comes from both an emic and etic perspective in this study, it was important that the researcher suspended all bias. In the researcher's previous study, all participants were told of the researcher's own TBI, which served as a foundation for trust and respect during the interviews. However, the researcher stayed focused on the participants' experience and delayed the sharing of her own story until after the study was complete. The researcher repeated this practice of transparency and objectivity in this study.

Accessibility

Recognizing that every research study is subject to issues of reliability and validity, the researcher established professional relationships with key participants. Entry into LMRESA and BIAMI was initiated through informational interviews conducted in Fall 2016. The physical and other health impairments (POHI) and TBI teacher consultant in LMRESA, provided documentation on the school reintegration process, and invited the researcher to attend a meeting with her team and the medical team at a local hospital. The director of BIAMI participated in an informal conversation at the BIAMI Annual Conference in Lansing, Michigan. Both directed the researcher to various resources on their organizations' websites as well as to research related to the Return-to-Learn legislative movement.

In Phase 1 of this study, after approval from the Eastern Michigan University College of Education and Human Subjects Review, a formal proposal was submitted to LMRESA and the identified medical center/hospital for approval in Summer 2018. These organizations granted access to staff (TBI teacher consultants, classroom teachers, education specialists, doctors, and therapists) in relevant departments.

Phase 2 of this study continued through Fall 2018, as the researcher worked with both LMRESA and the medical center to identify a local high school with more than five cases of concussion average per academic year per the LMRESA TBI teacher consultant's definition of high incidence. This study focuses on the team supporting students, but the students nor their parents were interviewed. No students' specific cases were discussed, and all participants referred to students in general and without names. The researcher presented benefits of sharing knowledge with other educators, medical professionals, and the TBI community, and described how the study could be used to shape future programming and policy as a means of motivating participant involvement on all levels (educators and medical professionals).

Phase 3 activities occurred during Winter 2018; the researcher gathered documents and conducted interviews and observations with all identified sources. During this process, the researcher interviewed the POHI/TBI teacher consultant who introduced contacts at a local sports medicine clinic and a local high school with a high rate of incidence of TBI. The interview protocol was used to establish a baseline of understanding regarding the communication, decision-making, and culture of each organization in working on school re-entry planning for students with TBI. The researcher continued interviewing teachers, specialists, and an on-site athletic trainer contracted through the sports medicine clinic. Phase 4 was conducted in the school year during Winter 2018 to Spring 2019; data were analyzed, and findings reported.

Summary

A single-subject case study method was used to describe the school reintegration process for one high school with high incidence of students with TBI. This qualitative

research design provided an in-depth exploration of the hospital and school communication, decision-making, and cultures, to help explain the student's academic and socio-emotional success. Although not generalizable to reintegration of all students with TBI, general themes may be considered by other medical and educational service providers in shaping their school reintegration processes for students with TBI.

Chapter 4: Findings

The purpose of this study was to understand the experience of school reintegration for students with TBI, and their families, from the perspective of the school administration, faculty, and medical personnel involved in the Return-to-Learn process. In this chapter, participants, data collection procedures, data analysis, and major themes are discussed. Through the lens of educational leadership, this study describes the communication, decision-making, cultures, and desired next steps of the medical team involved with identification and diagnosis of TBI in high school students, the educational team working with students with TBI as they return to school post injury, and the intermediary TBI teacher consultant, who is occasionally called in to assist in the transition. The following research questions guided this study:

1. What strategies do hospitals and schools use to communicate during the school reintegration process supporting a student who recently sustained a TBI?
2. What processes do hospitals and schools use to make decisions during the school reintegration process supporting a student who recently sustained a TBI?
3. In what ways do hospital and school culture impact the school reintegration process supporting a student who recently sustained a TBI?

Through qualitative case study analysis, the focus of this research was on LMRESA situated in western Michigan, as it is one of three intermediate school districts in the state offering TBI consultation. Through their lead TBI teacher consultant, the researcher was introduced to Harborville North High School and their collaborative work with Lakefront Hospital's medical clinic that specializes in concussion and is located five miles from the campus. Over the course of three months in the middle of the academic year, the researcher

interviewed the medical team including the only medical doctor and team of speech language therapists and athletic trainers in the region working with high schools on Return-to-Learn protocols for concussed students. The researcher also interviewed the educational team at Harborville North High School, including the principal, lead counselor, math teacher, special education teacher, English teacher, and a second counselor in that order to better understand the supports and services provided to students with TBI. Additionally, the TBI teacher consultant was interviewed at the start of the study and invited the researcher to a collaborative work session on the drafting of Return-to-Learn protocol guidelines with all groups represented. This chapter concludes with key findings of the data regarding communication, decision-making, and culture leading to the discussion of those findings in Chapter 5.

Data Collection

Using an established interview protocol (see Appendix D), the researcher employed cognitive interview strategies Willis (2005) often referred to as *think aloud* questioning to delve deeper into each participant's experience and perspective in working with students with TBI, as the participants understand, mentally process, and respond to questions with emphasis on potential breakdowns in the Return-to-Learn process. Interviews began with the regional TBI teacher consultant who then introduced the researcher to the consultant's medical colleagues who work closely with the suggested high school administrators. With an initial understanding of the Return-to-Learn process supported by the regional education service agency, the researcher interviewed participants in the order that a student who has sustained a TBI would interact with each in his or her return to school. Table 5 is a list of

participants in this study by titles, name, setting, years in the profession, years in the setting and gender.

Table 5

Participants' Employment Demographics

Title	Name	Setting	Years Profession	Years Setting	Gender
TBI Teacher Consultant	Ms. Susan	Lake Michigan Regional Education Agency	20	10	Female
Medical Director	Dr. Addison	Lakefront Hospital	10	5	Female
Speech Language Pathologist	Ms. Kelley	Lakefront Hospital	7	1	Female
Athletic Trainer	Ms. Carli	Lakefront Hospital @ Harborville North High School	12	4	Female
Principal	Mr. Michael	Harborville North High School	27	16	Male
Lead Counselor	Mr. Nick	Harborville North High School	24	19	Male
Math Teacher	Mr. Steven	Harborville North High School	27	7	Male
English Teacher	Ms. Megan	Harborville North High School	23	23	Female
Special Education Teacher	Ms. Becky	Harborville North High School	9	9	Female
Counselor	Ms. Julie	Harborville North High School	22	6	Female

TBI transition team. The LMRESA TBI transition team was established 20 years ago following the addition of traumatic brain injury as disability covered under the Individuals with Disabilities Education Act (IDEA) in the 1990 Amendments (Public Law 101-476). The team was voluntary at the suggestion of then director of special education at

LMRESA and has never received dedicated funds from the state or the federal government.

As the TBI teacher consultant explained:

The main goal of the people involved in the team is to help students transition into school following some type of a brain injury whether it is considered a concussion or a more traumatic severe brain injury, regardless of the amount of school missed or the duration of symptoms that need some support getting back into school. (TBI teacher consultant, personal interview, November 14, 2018)

At present, the TBI teacher consultant works out of the LMRESA offices, whereas four additional consultants volunteer in addition to their roles in special education within area schools.

TBI teacher consultant. A trained special educator, Ms. Susan has worked with physical and other health impairments (POHI) and TBI in the LMRESA since the inception of the TBI transition team. Although her role is focused on the student, “the parents sometimes see us as their advocate, as someone who can help them understand what is going on.” Recognizing that she offers comfort in her role, she has worked for “equal respect” from doctors at the various area hospitals as a professional educator with expertise in pediatric brain injury. The challenge has been focused on the alignment of medical recommendations, often understood as directives, to the resources available in the school environment. Often a translator for parents and teachers, Ms. Susan expressed a loss at what terminology to use: “I don’t have guidelines on what to call it” (Ms. Susan, personal interview, November 14, 2018).

Medical team. Lakefront Hospital is a nationally ranked hospital in the United States with more than 40 patient clinics serving the students living within LMRESA. Their sports

medicine clinic is the only facility in the region that offers a concussion clinic providing diagnosis, social work evaluation, physical, occupational, and speech therapy as well as neuropsychology. The medical doctor, who specializes in concussions, meets with her team of therapists biweekly to discuss patient cases and is the medical director of a team of athletic trainers employed by the hospital and contracted to schools throughout the geographical area of the LMRESA. For the past year, the medical team has collaborated with the LMRESA TBI transition team to formulate a Return-to-Learn suggested protocol document that area schools can use as a blueprint for their individualized procedures.

Medical doctor. A native of West Michigan, Dr. Addison’s interest in concussion stemmed from her own concussion suffered during her field experience in sports medicine two months before completing medical school. She noticed “how much worry took over” her that she had “put all of this time and money into my brain and now it is not going to work.” Her symptoms resolved, and she completed her second set of board exams (Medical director, personal interview, December 20, 2018). Recognizing that all patients with concussion in this area of West Michigan were being sent to a trauma hospital with a 6 to 12 month wait list, she was eager to start practicing at Lakefront Hospital and continued her own education with training in ImPACT testing.

Speech language pathologist. A two-time alumna of the College of West Michigan, Ms. Kelley completed an internship at a pediatric trauma center, working with an interdisciplinary team and later worked at a few skilled nursing facilities serving a large population of young people with TBI. As a speech language pathologist, Ms. Kelley “is assessing the student’s ability to learn new things” and recall information before she creates a list of “adjustments,” which are meant to be temporary. With the absence of a nutritionist on

the medical team, Ms. Kelley provides her young patients with information about the importance of exercise and sleep to round out a holistic approach to recovery. (Speech language pathologist, personal interview, December 3, 2018).

Athletic trainer. Spending over a decade working with student athletes, Ms. Carli has seen the move away from grading concussions on the field to the development of the Return-to-Play protocols in area schools, wherein requirements are continually changing. As a hospital employee contracted to the high school, she has direct access to Dr. Addison and the medical team but expressed a challenge to connect with counselors and teachers of students with TBI, because “it just becomes a complicated web,” and she is left connecting the dots between the school and hospital. Recognizing that school faculty and staff need more education on brain injury, she seeks more knowledge about the ways that the school works with social services and school counseling (Dr. Addison, personal interview, January 8, 2019).

Educational team. Harborville North High School is one of two high schools in the school district that is connected by outdoor walkway with Harborville South High School. About 1,000 students call Harborville North their *home school* as they are enrolled and attend most of their freshman core classes in that building. As they matriculate, they walk between buildings as schedules reflect different offerings such as advanced placement, performing arts, and industrial classes. The two counselors at Harborville North each have a caseload of more than 500 students and meet with them for credit checks to ensure that students are on track for graduation. The teachers at Harborville North may have students from both schools and thus work with counselors from both Harborville North and South. The special

education team is split between the high schools, yet each teacher has a caseload of students from the home school wherein their physical classroom is located.

The two high schools are rivals in sports programming, including football, baseball, basketball, and swimming. One athletic trainer contracted from Lakefront Hospital works on site in each building; Ms. Carli works at Harborville North High School. All athletes are administered ImPACT tests in their freshman year or join an athletic program. The ImPACT baseline test is an online neurocognitive test used as part of the concussion evaluation for ages 12 to 59 (ImPACT, 2019). Harborville School District began using the testing system in 2012 at the direction of Dr. Addison's medical team including all athletic trainers, based on the *Consensus Statement on Concussion in Sport* issued by the International Conference on Concussion in Sport in 2008 (McCrory et al., 2013). Regardless of participation in sports, all students are required to submit parent signature on the concussion acknowledgment form in the enrollment packet (see Appendix E).

The administration of Harborville North High School has worked with the LMRESA TBI teacher consultant for more than five years and currently does not have a written protocol for Return-to-Learn. As of this writing, during the 2018-2019 academic year, Harborville North's lead counselors reported six students sustaining concussion and receiving accommodations recommended by medical personnel. The other counselor said she saw "maybe three" this year. The athletic trainer on-site at the high school reported working with 19 sports related concussions, the highest incidence occurring in cheerleading and football, and seven non-sport related concussions; some of those were the result of club sport participation. Thus, the athletic trainer saw 26 concussed students, whereas the counselors combined saw nine concussed students. The discrepancy of the number of students with TBI

is a continued point of discussion between the athletic and counseling offices. The findings from the education team include interviews with the principal, both counselors, a math teacher, an English teacher, and a special education teacher who have worked with at least one student with TBI over the calendar year.

Principal. Mr. Michael, like most of his faculty and staff, grew up in the area and attended a local college. His experience in nearby public and charter schools provided opportunities to lead schools in effective technology practices. Mr. Michael has personal experience with TBI, as his daughter has a benign brain tumor and both of his sons have sustained concussions while playing sports. His goal is to help teachers understand the experience for students with TBI, as his teachers are “more than willing to make the accommodations necessary but need their ‘why’ with concussion [being] such a widely talked about thing that almost has become [a] less important thing that makes sense” (Mr. Michael, personal interview, December 11, 2018).

Lead counselor. With a background working in an alternative school, juvenile detention center, and the last 19 years at Harborville North High School, Mr. Nick has seen students sustain TBI from car and bike accidents, athletics, summer water sports, and physical education classes. Having worked extensively with Ms. Susan, the TBI teacher consultant, Mr. Nick explained there is no consistency to the ways that students react to their injury: “Sometimes the harder thing to do is to convince the kid that this [accommodation] will be really helpful.” The degree of resistance and compliance to accommodations is completely dependent on the student. Mr. Nick said that there have been enough concussions in recent years that students and parents understand that “the brain is injured to some degree. It takes time to heal. It’s that healing time that is so weird with schools” given the academic

calendar compared to the medical timeline of recovery. (Mr. Nick, personal interview, December 30, 2018).

Math teacher. In his 27th year in education, Mr. Steven has been both a school administrator and teacher, although he prefers the classroom. He, too, has had personal experience with brain injury, as his daughter sustained a severe brain injury when she was in middle school: “It was a biggie, she had to miss a lot due to hospitalizations, a lot of appointments, a lot of missing school.” From that experience, he understands that the environment plays a significant role in the students’ recovery and is attuned to students’ triggers such as light or noise, offering alternative spaces to work such as the hallway. He stresses the need of more education for parents of students who are not in athletics and a general awareness of potential isolation, particularly when removing screens and thus social media from students with TBI in early recovery (Mr. Steven, personal interview, December 21, 2018).

English teacher. A veteran educator, Ms. Megan has worked in Harborville School District for 23 years. Having struggled with anxiety personally, Ms. Megan shares her experience with students in an effort to create a safe space for them to share their feelings of depression and battles with mental health. Understanding self-disclosure is part of the experience for students with TBI, she explained, “One of the paths to becoming an adult is being able to interact with adults and advocate for yourself.” That said, Ms. Megan expressed students’ previous concussion history is unknown: “If they had seemingly healed from the concussion, you wouldn’t find out”(Ms. Megan, personal interview, January 28, 2019).

Special education teacher. A home-towner, Ms. Becky grew up in Harborville, graduated from a nearby university, and has worked in the district for the past nine years.

Previously teaching in the district's moderately cognitively impaired (MOCI) classroom, she is now a resource teacher who provides one-to-one services and co-teaches in a general education English class. Responding to teachers use of the terms, *accommodation* and *modification*, interchangeably, Ms. Becky says "There is not a great understanding of how to accommodate the students without having special ed support...there's an 'old school' mindset." She agreed that concussion has been *normalized* and accepted in the past few years, but students with TBI have not been referred for her services unless already on her caseload for pre-existing needs (Special education teacher, personal interview, January 30, 2019).

Counselor. Previously an upper elementary teacher, Ms. Julie has been a counselor at Harborville North High School for the past six years. Ms. Julie's mantra is "Hey, let's do what is in the best interest of the kid." While students assigned to her may be taking some classes at the other high school, Ms. Julie identifies as the primary point person for a student with TBI: "Our student is our student. We [the counselors] communicate with all of the North and South teachers about our students." With the few concussions she has seen, Ms. Julie's focus is on mental health of her students. Concussions have "been nothing compared to what we have dealt with depression, anxiety, mental health issues. It is tremendously overwhelming"(Ms. Julie, personal interview, January 30, 2019).

Analysis

Providing an overview of operations of each group and clarity of roles, the researcher used a grounded theory analysis framework (Jeon, 2004) to organize the data into themes and concepts related to communication, decision-making, culture, and desired next steps. Using this sociological approach to data analysis allowed the researcher to identify participants'

meaning of the Return-to-Learn process and its implementation at Harborville North High School in their responses to unwritten protocols, implied codes of conduct, and procedures (Starks & Brown Trinidad, 2007, p. 1374). Each participant’s story unveils values, attitudes, and beliefs, as they share their experience working with students with TBI (see Table 6).

Table 6

Grounded Theory Analysis

Significant Statement	Theme
We have different rules to follow than the medical community does. But then yeah, sometimes it is just a phone call and we ask for things to be faxed over. (Ms. Susan, TBI Teacher Consultant)	Communication – mode
I typically only get a handful of students a year, right now I can think of three off the top of my head this year. (Ms. Julie, Counselor)	Communication – frequency
The feedback I will get is from the kids. The kids will come back, and I’ll say hey did you give your teachers the accommodations and how did it go? (Dr. Addison, Medical Director)	Communication – process-feedback
Or doctors or therapists will say visually they can’t, florescent lights will bother them. So, they will say, they should wear visor hat and sunglasses to school. (Mr. Stephen, Math Teacher)	Decision- Making – accommodations
So, if an athlete has a concussion, every day that they are at school, they will see me. I will go through a symptom score with them. Typically, I will ask like how was your day, were there any classes that were really bothersome for you? (Ms. Carli, Athletic Trainer)	Decision- Making –assessment
It’s just some short-term accommodations until they are approved to be back school without necessarily needing the accommodations or cleared (Mr. Michael, Principal)	Decision- Making –timeline
The hardest thing in school is teachers who don’t believe the symptoms are real. We have run into that more with teachers who were big sports people in the past. And it's like I had loads of concussions and look at me now. (Mr. Nick, Counselor)	Culture – Education – prior knowledge
I think that sometimes society still hasn’t merged the two together. So, they think concussion well that’s not as serious. Or brain injury that’s different than concussion because in concussion becoming more prevalent with stuff from the NFL. (Ms. Carli, Athletic Trainer)	Culture – society

Key Findings

The data showed that the medical and educational spheres of support and the liaison of the LMRESA TBI teacher consultant are operating differently in the themes of communication and decision-making, which are influenced by unique cultures yet share a thread of commonality in their desired wishes for the future. According to the data, terminology plays a significant role in the understanding and response to students' injuries; the school considers doctor's recommendations for accommodations as directives to be followed, and the school favors student athletes with TBI by providing more supports than are provided for non-athletic students with TBI. Table 7 shows key findings by identified themes of Communication, Decision-Making, and Culture.

Table 7

Key Findings

Theme	Key Findings
Communication	One directional communication from the hospital to the school is the current norm.
Decision-Making	<p>The student with TBI is messenger between the hospital and the school.</p> <p>The doctor’s recommendations on environmental and physical accommodations are taken by the school as necessary directives.</p>
Culture	<p>The lack of additional educational accommodations results in gaps in the student’s learning.</p> <p>Without a defined timeline of recovery, the school uses the Return to Play medical clearance to determine the end of accommodations in the classroom.</p> <p>The terminology used to describe the injury matters in the understanding and treatment of students with TBI in the medical and educational settings.</p> <p>Educators favor athletes as they provide more services via the Athletic Trainer on-site at the school. Non-athletic students rely solely on medical provider for services.</p>

Communication

The sequence of communication is one directional as the athletic trainer sends student athletes who sustain their injuries on the field to the medical director. After a medical exam, followed by a diagnosis and a treatment plan, the medical director gives the student with TBI a recommended list of accommodations to give to their teachers directly. Ideally, the list of recommendation goes to the counselor who, in the assumed the role of case manager, sends them via email to the student’s five teachers. In most cases, the student gives the list of recommendations directly to their teachers without notifying the counselor as opposed to the student’s instructions. The counselor’s primary responsibility is to make sure the student

graduates with all of his or her credits. This one-directional process does not include a formal feedback loop as the medical director doesn't receive feedback from the school but from the student themselves. The school also doesn't receive further recommendations from the medical director unless there is a change in the student's medical status.

Medical. The three members of the medical team interviewed shared the importance of constant communication through secure channels. The HIPAA of 1996 is federal legislation that provides data privacy and security provisions for safeguarding medical information. Thus, the medical team communicates through a secure hospital email and records system. They are unable to email information to schools, as the surrounding districts use unsecure Google Mail systems. As Ms. Carli, the athletic trainer who working within the school explained, email "becomes a tricky spot because of what is and what is not allowed by HIPAA, and so I will try to keep the information at a minimum first name and an initial. Our [district] Gmail is not secure email so we can't, we shouldn't be emailing tons and tons of information that way" (Ms. Carli, personal communication, January 30, 2019). Therefore, communication from the medical team to the school team requires faxing or mailing of paper copies of forms, although, most frequently, Dr. Addison and Ms. Kelley print recommendation forms and give several copies to student patients to deliver to their respective parents and teachers. It is regarded as the most expedient way to get the information from the hospital to the school:

I used to just give [the recommendation form] to the kid and hope it gets to the counselor and the teachers. Sometimes that works, sometimes it doesn't. Lately I have just given the kid a ton of copies and said give this to each teacher individually. And then, I'll take it one step further and ask the teacher to email the parents a day or

two after the kid gives the sheet to the teacher and say so-and-so has a concussion, he has an accommodations form; did you get it? Do you have any questions about it? So, it is kinda full circle, so you make sure the teachers got it, the parents got it. (Speech language pathologist, personal interview, December 30, 2018).

If the patient is a student athlete, the doctor will know they are working with Ms. Carli stationed on-site in the high school. Thus, the student athlete will receive more frequent medical attention: “If a [student] athlete has a concussion, even before they see a doctor, during evaluation, every day they are at school, they will see me. I will go through a symptom score with them” (Athletic trainer, personal interview, January 8, 2019). Ms. Carli has a hospital laptop and mobile device with secured encryption for frequent communication with the team at the medical clinic. Unfortunately, Ms. Carli does not see non-athletes, as their contract doesn’t cover general students. Those students receive only their medical checks when they see the doctors for scheduled appointments, usually in the afterschool and evening hours. Ms. Carli submits updates to the students’ medical records on the hospital computer, but she does not input any information into the students’ academic record. Only paper copies of their daily symptom checks (see Appendix F) are kept in a file cabinet in her office and destroyed after seven years. These paper files are not shared with the school counselors or teachers.

TBI teacher consultant. Generally, as the TBI teacher consultant, Ms. Susan is alerted about a new student with TBI by phone or email directly from the hospital or the parent who was referred to her by their medical team. The hospital’s referral form gives basic information including name, age, parents’ names, phone numbers, when the injury occurred, some of the symptoms the student is having, identified next steps for the medical

team, and the dates of upcoming patient appointments. After getting parents' written consent, Ms. Susan then calls or emails the student's school and connects with one of the counselors to discuss the potential accommodations.

Ms. Susan is often requested to attend a meeting with school personnel and the student's parents to offer clarity on the recommended accommodations. Often the conversation about accommodations and modifications to students' schedules help manage academic expectations for the student during the time of their recovery:

The information [we share with parents] on the brain injury will be specific to that student and what's is going on with them. So, if there are some behavioral changes, we may share some information about behavioral changes specific connected to concussion/brain. If the symptoms are things like increased difficulty with attention or increased difficulty with headache or visual difficulties due to light, maybe auditory due to sound, we'll share information specific to that...so that if they see something else that doesn't match the student pre-injury they're aware that might be related. (TBI teacher consultant, personal interview, November 14, 2018)

Ms. Susan is rarely involved with further conversations unless invited to discuss formal IEP or 504 plans. However, as she is often in the same schools, Ms. Susan will informally follow up with teachers and counselors about a student's progress post-injury and recovery, especially the following year: "We try to follow up. When I am in the building at some point, I might stop in and say, 'hey how is so-and-so doing?' [We] try to do that with the ones that there was more of a question of how well they continue after summer" (TBI teacher consultant, personal interview, November 14, 2018).

Education. The flow of information into the school regarding concussion is primarily dependent on the students' self-disclosure and sharing of the medical diagnosis and recommended accommodations to their counselors and teachers. As mentioned, the student is the messenger between the hospital and the school and often gives the letter of recommended accommodations from the Dr. Addison directly to the teachers. The school's counselors, Mr. Nick and Ms. Julie, serve as the case managers for each student with a TBI and are often tracking down the student after a teacher reports receiving communication from the hospital. As Mr. Nick states, "We are being communicated with more and more, but in terms of my role, it is simply the communicating out any accommodations to teachers" (Lead counselor, personal interview, January 30, 2019). When the counselors do receive the information, they are charged with disseminating the recommended accommodations to the students' teachers for the semester, which is done via district email, which is a Google Mail account.

The method of notification and degree to which teachers are informed of the injury and recommended accommodations varies per student. As Ms. Megan, the English teacher shared, teachers learn about students' TBI in various ways:

If they have received medical care, [we] will get a written email from their school counselor. If it is maybe a minor one, the kids just tell me. But a lot of times I get an email from their school counselor that I print so that I have it handy. It feels like I am pretty well-informed about it. Sometimes parents will tell me at conferences, too, if their kid has had one in the past. So yeah, I feel pretty well-informed (Ms. Megan, personal interview, January 30, 2019).

Once accommodations are in place, Mr. Nick will continue to check in with the student on how they are doing and maintain email communication with the students' teachers. Mr. Nick's primary job is to keep on top of credit checks to ensure students can graduate. Mr. Michael stressed the preferred option of credit/no credit to avoid situations where the students' drop in academic achievement on non-essential assignments jeopardize the students' report card. He said: "If you have a teacher, who simply over time, you know they struggle with wanting to make the adjustment...it is almost like a disciplinary thing with a staff member or you simply say, 'you have a protocol,' that includes a group discussion or a face-to-face meeting where you say, alright here is the deal" (Mr. Michael, personal interview, December 21, 2018). To clarify, the school does not have a written protocol for Return-to-Learn after TBI; thus, Mr. Michael was referring to the email communication of accommodations and grading.

Parental communication can take place with counselors or individual teachers, depending on established relationships. If the injury occurred while in eighth grade or late in the spring semester at the high school, the teachers receiving the students with TBI in the fall are not informed of the previous year's related accommodations. Additionally, the diagnosis of concussion is not entered in the school's secured student information system, although there is a medical history detail on each student's record. Ms. Julie clarified, "There is a medical piece [in the system] but you would have to hover over it. There is nothing that says, 'new medical added concussion.' It wouldn't say anything like that" (Counselor, personal interview, January 30, 2019).

Decision-Making

The list of recommended accommodations from medical personnel are focused on environmental adjustments to improve access to learning and are meant for two weeks following injury. According to educators, they are not given any timeframe of recovery or when the accommodations expire. Teachers respond most to the accommodations regarding the need for audio books, reduced screen time and frequent breaks, as they are not significantly compromising their instruction. The list of recommended accommodations is not reviewed through a “learning lens” by the educational team and teachers are finding themselves making modifications to content or instruction. Modifications are considered curriculum changes that are legally required for the student to learn and entail formal documentation of a 504 plan or IEP. None of the students with TBI in this case study were moved to a child study team for evaluation for special education services or supports.

Medical. The medical protocol of evaluation, diagnosis, treatment, and discharge is standardized, beginning and ending with Dr. Addison’s authorization. Upon receiving a student with TBI, the Dr. Addison takes an oral history of the student and continues to work through an initial evaluation. If Ms. Carli witnesses the student’s injury, she performs an initial evaluation very similar to Dr. Addison and then sends the student to the hospital or medical clinic for official diagnosis and follow up treatment. After the initial visit, the Dr. Addison has every student meet with a social worker for a complete work-up on social emotional needs before assigning therapies based on the students’ symptoms. After the first evaluation, Dr. Addison will complete a standardized form stating diagnosis and recommended accommodations based on research in the medical field.

This checklist of recommendations is meant as suggestions for the parents and educators for the student's first two weeks returning to school (see Appendix G). Although Dr. Addison's contact information is on the form, she and her team do not receive feedback from the school about how the student is doing but rely on the student's recount of their school experience to make decisions on next steps of therapies and treatment. Speech language pathologist Ms. Kelley also provides a list of similar recommendations, understanding that counselors "know the student better than I do because they have mandatory meetings a few times a year." Additionally, Ms. Kelley's "accommodations are just recommendations. It is always up to the school teacher. All [Ms. Kelley] can do is say this is the deficit that the student has, and this is proving that they need this..." (Speech language pathologist, personal interview, December 30, 2018).

When asked if the school provides feedback to the list of recommended accommodations, all members of the medical team said there is little to no communication from school personnel. Dr. Addison stated,

The feedback I will get is from the kids. And it will go one of two ways, 'yeah [the teachers] are great they are giving me all of this help, exempting me from these things that I missed, giving me extra time' or they are just telling me that 'I will have to make everything back up on my own time', or 'they are totally ignoring it and not giving me any accommodations or and not giving me any relief from some of this.' That's the really frustrating part of this. I wish there was some kind of communication [from the school]. (Medical director, personal interview, December 2018).

Ms. Kelley and Ms. Carli expressed the same sentiment, that there was no follow-up from students' teachers after receiving the recommendation forms. The medical team use only the students' account of daily experience at home and in school to determine continued care of therapy.

TBI teacher consultant. The LMRESA is a support office of the Michigan Department of Education and can advise on compliance with state educational law; however, it has no part in the decision-making of a student's education. If the school team moves forward with formalized IEP or 504 plan, Ms. Susan, the TBI teacher consultant, may be required to participate in the process if she will be providing any services as a trained special educator. Oftentimes, the school team does not move forward with formal documentation, and Ms. Susan is left wondering what happened with the student, as the school does not feedback updates on the students with whom she and the special educators have consulted. Oftentimes Ms. Susan is a translator of the recommended accommodations from the doctor to the school team based on the medical team's expertise in the brain's healing during recovery:

There was one just recently where [the student] needs to take breaks a couple of times a day. They should have breaks scheduled a couple of times a day in a quiet darkened room. The school thought that an open area in an office, or just off an office would be ok because it was not out in the hall with all busyness of the hall. [Yet,] there are all of these kids coming and going, parents and adults coming and going, so that isn't a quiet location. (TBI teacher consultant, personal interview, November 14, 2018)

Ms. Susan often finds the need to explain why such a recommendation is being made. In this case, the student needs to remove all stimuli from their environment so their brain can refresh and recalibrate for the next activity.

When asked about conflicting statistics of occurrence of TBI in youth and the lower statistic of formalized special education services provided, Ms. Susan explained that she is not required to report student counts to the LMRESA or the Michigan Department of Education:

Say there are 1000 students who are diagnosed with a concussion, but there are only 100 new kids around the state every year who are made eligible under TBI. So, what's happening with those other 900? Well, in most of the cases that we are involved with in LMRESA, those other kids didn't need an IEP. They were able to receive accommodations and support through their general education classes and with their teachers, their counselors, and their principals, and parents, and things like that arranging things so they would work. And so those other 900 aren't going to show up on any documentation anywhere educationally. But that doesn't mean they weren't serviced, and it doesn't mean that they were poorly serviced. It just means they were serviced in such a way that it wasn't necessary to move to the point of formal legal IEP paperwork. And that in most of those cases, the symptoms eventually resolved themselves and the student was able to continue on in school as they were able to before or close to as they were able to do before. (TBI teacher consultant, personal interview, November 14, 2018)

Ms. Susan added that some districts move more quickly into formal paperwork as they "feel they need to move into that formal paperwork soon, to provide the accommodations that are needed," though formal paperwork is not required unless the school modifies the curriculum at all or the student's day for long term.

Education. At present, the school considers the Dr. Addison’s recommendations as required accommodations much like a prescription. According to the principal, Mr. Michael, “If the doctor says there is something we should do, we have no choice. When we don’t have that then it is what it is. The doctor’s note is our IEP, if that makes sense. We have to follow it” (Principal, personal interview, December 11, 2018).

The school defers to the doctor’s accommodations, which are purely environmental and not considerate of possible changes in learning requiring curriculum and instruction accommodations for the student with TBI during their early recovery. After receiving Dr. Addison’s letter of recommended accommodations, counselors stated that most are put into place directly if they don’t require additional resources such as equipment or text-to-voice translation for required course books. The list of accommodations is general to the commonly understood school environment and activity. However, each teacher has to interpret and apply how those accommodations affect instruction in their subject area. As Ms. Megan, the English teacher, stated,

It has a list of accommodations, which are pretty normal ones for a concussion, as you know avoiding screens, not being able to read, or needing to handwrite everything rather than typing on a screen. And sometimes, kids have headaches, so we are informed about that. That they just might not be feeling well, or they might be tired. But it seems that as an English teacher, the thing I need to do most often is excuse them from reading in class or from the screens. (English teacher, personal interview, February 6, 2019)

Every member of the education team interviewed expressed the importance of limiting screen time, including the school principal, Mr. Michael:

Number one is pull all screen time away. Shut the brain down as much as possible. Quick as possible, as much as possible. It's kinda like putting your brain in a cast. If you have a broken arm, you have a cast, so it heals correctly. I think the same idea with the brain. You just take as much stimuli away as much of the screen time away as you can and shut the person down. I have seen that to be the most effective. It's really just a point of when you and what do you want to learn. (Principal, personal interview, December 11, 2019)

At times the teachers have difficulty finding alternatives to screens, as the district has invested heavily in e-books for all subject areas. Although Ms. Megan, the English teacher, provides alternatives to required print reading of chapter novels by providing access to her personal audible account, Mr. Steven has to make selective choices in the content taught from old textbooks. This presents a challenge for Mr. Steven as the content area has building blocks that scaffold to new concepts and skills:

[Based on what the student knows,] I'm picking the main basic point and focus on that. The doctor's office has written 'as tolerated.' So, I leave a lot to the student as far as what they will and won't do. As far as curriculum-wise, there are going to be gaps in that student's learning. That happened with the student I have this year. I know that and I just keep giving building blocks for future success along the way. I hope that student and parents understand that there may be little gaps in there and may need a tutor or some form of remediation along the way. (Math teacher, personal interview, December 21, 2018)

These accommodations are not screened by the special education department and are considered temporary until the teachers are instructed by counselors that they are no longer

required, or they assess the student can handle the material and classroom tools as normal. Mr. Steven reported he never thought to ask someone in special education about these decisions or formal modifications to the curriculum.

When asked about her involvement with any students with TBI, Ms. Becky, the special education teacher, was not aware of Dr. Addison's standardized form of recommended accommodations as most teachers share a list; they receive via email from the counselors:

[General education teachers] would want my assistance on implementation. We know we have to do this how can we do this for my assignments specifically for English. This is what we have to do so how can I do the modifications that I am supposed to do, or do you have suggestions from previous kids...A lot of times they will use me as a co-worker kind of brainstorming ideas off of. (English teacher, personal interview, January 30, 2019)

When asked when it is necessary to move beyond the doctor's recommended accommodations to modifications, Mr. Michael responded, "I am considering it all the same process that accommodation include modification" (Principal, personal interview, December 11, 2018).

Through the interviews with educators, there is a lack of understanding the differences between accommodations and modifications, the later requiring formal legal documentation through special education. Mr. Nick suggested that accommodations are no longer required unless the students say something:

My assumption is that they have moved passed their struggles. If it was TBI or a consistent problem, then we would document all of the accommodations and move to

a 504 plan pretty quick, if this was going to linger and be a long-term process. That is a good point, some of the hardest things we have to decide with these, is it long-term or short-term. There's such a grey area with that most are short-term but when you get that long-term and move into 504 plan and it's still there, then you are moving to an IEP. Pretty rare, but it happens. (Lead Counselor, personal interview, December 2018)

Culture

The data confirm a lack of consistent terminology used to describe the injury, which has direct correlation to the understanding and treatment of students with TBI in the medical and educational settings. The educational and medical personnel stated that the driver of the preferred terminology of *concussion* are parents and teachers who are familiar with the term given their own personal experiences. Additionally, educators expect student athletes to sustain injury, and the school has contracted the athletic trainer to provide additional services for those athletic students with TBI, leaving non-athletic students with TBI to rely solely on their medical provider for services.

Medical culture. Given the wide spectrum of TBI, the medical team has moved away from using the terminology of *brain injury* to commonly referring to *concussion*, explaining it is more easily understood by student patients and their parents. When asked, each member of the medical team explained their bias towards using the word *concussion* often relating to a personal experience. Having experienced a concussion during her final weeks of medical school, Dr. Addison shared, "I don't think you can really understand unless you go through it yourself or you have a close family member who deals with it. It's hard.

You are not wearing a cast where everyone can see your broken arm” (Medical director, personal interview, December 30, 2018).

Ms. Kelley shared that she uses the term *concussion* because hearing *mild traumatic brain injury* “can be really scary and is associated with staying in the hospital [and] going to in-patient rehab.” She further commented, “It depends on the person. Some people take it very seriously, and they know this is a brain injury, and some people take it lightly like it’s a concussion because of the culture” (Speech language pathologist, personal interview, December 2018).

The medical team recognized that student patients and parents see Dr. Addison as the single voice of authority regarding recovery from the injury. As students and parents meet other members of the medical team, each therapist reiterates their role in the student’s recovery: “When they walk in and say I’m called a speech language pathologist, but I should be called a brain therapist...because we care about the brain and how it impacts your function as a student” (Medical director, personal interview, December 20, 2018).

The softening of terminology extends the role each therapist has and to the identification of symptoms as well. Ms. Kelley explained how a symptom can impact a student’s reading comprehension: “[We look at] where did they fall on the spectrum of their nerves reacting to all of the trauma. Are they going inward, which would be an *Eeyore* as the nerves are under-responsive or a *Tigger* where the nerves would be over-responsive? Of course, this would play into their academics,” as it affects executive function to follow the words on the page or focus on the main ideas.

Ms. Carli shared “grading of concussions” has advanced using ImPACT testing to provide objective evaluations of head injuries on the field during competitive play:

If the concussion symptoms last 15 minutes [at most] we would functionally test them, and they would return to play that same day [considered a Grade 1]. If symptoms lasted longer than 15 minutes, they were considered Grade 2. Any loss of consciousness was considered Grade 3 and the length of time you were out [of play] depended on those things (Athletic trainer, personal interview, December 19, 2018).

Without the grading, the term concussion is used broadly. However, the general understanding is that concussion is a short-term event that will resolve itself in a few weeks' time. The athletic trainer stated: "Now, I have seen so many concussions, there is no conceivable way to determine how long anything will last during the time of injury" (Athletic trainer, personal interview, December 19, 2018). The medical team is working on a general timeline of Dr. Addison's recommended accommodations for the first two or three weeks. Ms. Kelley suggested that the school begin to explore possible curriculum modification and movement towards an IEP if there is no improvement by the third month.

TBI teacher consultant. The data showed that if the educator working with the student with TBI has experience working with Ms. Susan in the past, they are less likely to call for assistance, as they know what to do. That said, educators new to working with students with TBI are more likely to contact Ms. Susan for consult in the initial days of school reintegration:

It depends on the school on how much I get involved because a school like Harborville has had so many [TBIs] come through over the years and I have worked so often with their counselors and their teachers and [their principal]. Social workers are sometimes there, too. They sort of know what's going to come next. They have learned what is going to come next, so a place like that, if it is going to move to an

IEP, they will usually contact me and ask me to at least sit in on the meetings as they talk through all of that (TBI teacher consultant, personal interview, November 14, 2018).

Ms. Susan acknowledged that joining the meetings provide a certain level of relief as an additional voice of someone who has dealt with brain injury situations more frequently than the school staff.

As the number of sports-related TBIs increase, schools are becoming more normalized to the event, although they do not have formal protocols in place. However, when a student who had a “significant brain injury and has significant long-lasting symptoms and injuries after that, I will have our [team’s] services written into the IEP. Just because they [the school team] are going, ‘this is such a drastic change, we are really going to need some ongoing support and resource working with this student.’ [Regardless of provided services], that doesn’t mean they can’t contact me again if a question comes up” (TBI teacher consultant, personal interview, November 14, 2018).

Education. When asked, most educators used the word concussion to describe their students receiving accommodations for head injuries, as it is a more familiar word related to sports:

It’s hard. I think on one end you have a permanent brain injury; you have mild concussion on the other end and everything in-between. They are all on the same continuum, that’s my own personal thought process. You have concussion on one end, mild concussion, severe concussion, a mild brain injury, they might be blended a little bit to a permanent brain injury. (TBI teacher consultant, personal interview, December 11, 2018)

Although Mr. Nick stated the causes vary from sports-related to motor vehicle accidents, the most commonly asked question is, how bad is it? The common-use of concussion infers a short-term recovery with minor changes to instruction for the interim, whereas the use of TBI is immediately regarded as a long-term recovery with great uncertainty if the student will “get back to normal”: “We really started working a couple of years ago when head injuries became not more prevailing but more diagnosed to school types of problems...The teachers hear TBI and they are willing to do anything. You hear concussion and they say how bad is it. TBI has a stigma that boy something happened” (Lead counselor, personal interview, December 30, 2018). When asked about issues of stigma and identity, all educators responded that the other students didn’t care, notice, or label a student with a TBI. Rather, the students’ with TBI were more likely to withhold their feelings of frustration and stress to their peers and only share with gentle probing from teachers:

There is frustration on their part, because they know what they could do, and they know what they can do, and they don’t match up... They know something is different in their head. They can’t get by certain barriers, certain tasks, and things weren’t the same. There is always this work, am I going to get better? Are the things the doctors tell me to do really going to help me? (Lead counselor, personal interview, December 21, 2018)

Over the past three years, the school district engaged in a mental health awareness campaign. When asked if these students with TBI cross into concerns regarding mental health, teachers affirmed this to be true:

What I notice more the kids that have had severe concussions struggle with depression, too, sometimes afterwards...It’s not real obvious in class but I would say

lack of motivation, being tired, and feeling like they are getting behind in doing their school work, headaches, just not feeling well can cause depression, too, from what I understand. That is what has been happening with the students that I have had recently. (Lead counselor, personal interview, January 28, 2019)

However, Ms. Julie said students with TBI were not in need of mental health counseling, as the issues were separate:

I guess I look at it, and I shouldn't look at it, as concussion. Yep I understand there could be a mild version of concussion, there could be severe. I guess while I know it can be a brain injury, we almost keep it categorized as concussion...I think with such few concussions that we have dealt with, that have not been a major point. It has been nothing compared to what we have dealt with depression, anxiety, mental health issues. It is tremendously overwhelming. (Counselor, personal interview, January 30, 2019).

Desired Next Steps

At the conclusion of each interview, the researcher asked the participants to provide one wish for the future to improve the Return-to-Learn process. The medical and educational spheres agreed there is a strong need for a new communication structure as students reintegrate to school after TBI. However, the separate spheres regard involvement from the state in opposite lights, the medical team wanting a state task force and the educational team not wanting any state reporting regardless of additional funding received in return. The TBI teacher consultant is eager to formalize the Return-to-Learn process, which is favored by both the medical and educational spheres, but whose involvement in its creation varies.

Medical. Each member of the medical team strongly desired more collaboration with the educational team both on a local and state level. Dr. Addison stated the need to create, “some kind of task force with a few physicians in the State of Michigan, some teacher representatives, some coaches, some parents, principals, ... everyone that touches if we are just focused on a high school kid, counselor, that kind of thing. If there was a task force with representatives from each discipline that could just hash out this stuff” (Medical director, personal interview, December 30, 2018). Ms. Kelley expressed disappointment in not being included on school IEP meetings: “I thought I had more say, and when an IEP gets put in place, but I actually have no say. They appreciate the information from my assessments and my treatments” (Speech language pathologist, personal interview, December 3, 2018). This academic year, Ms. Carli is trying to work with the lead counselor on a formal protocol from the athletic office, to the counseling office, to teachers: “In an ideal world, we would have a committee of people, medical, someone from the school, athletics, and we would get together and talk about these [concussed] people” (Athletic trainer, personal interview, December 19, 2018). These wishes for stronger collaboration were echoed by the educational team.

TBI teacher consultant. Knowing that LMRESA is one of three educational resource agencies in the state to offer TBI consulting services to local districts and school, Ms. Susan expressed continued need for more teacher education with hopes of equitable response to all students with TBI:

The hardest thing in school is teachers who don't believe the symptoms are real.

Working with teachers who don't believe the symptoms are real is more common

with a student who was [having] difficulties before the injury than with students who

were top quality learners prior to the injury. (TBI teacher consultant, personal interview, November 14, 2018)

Ms. Susan knows it is a hard sell to create more TBI teacher consultant programs across the State of Michigan: “It takes someone with a big interest in that. And because of the way, as I’ve said before, the schools and the teachers are getting more knowledgeable about it”, (TBI teacher consultant, personal interview, November 14, 2018). Ms. Susan is currently co-developing a Return-to-Learn guide with the Lakefront Hospital to be distributed to all school districts within LMRESA.

Education. Administrators and teachers alike seek a clear definition of TBI and want to know how long the symptoms will persist requiring these accommodations:

What I think would be helpful is a better, like, a better guide from doctors almost a standard guide from doctors [about] what would be beneficial to students when they come to school. When you prescribe a medication, you say take this at this time of day for this amount of time. And that’s very understood. When that prescription medication comes to school it is very easy for us because they tell you exactly what to do when you need to do it. It is a protocol that is set up and it is consistent from one doc to another and we follow it very religiously by the law. (Math teacher, personal interview, December 11, 2018).

Additionally, teachers have expressed the need for a feedback loop with Dr. Addison to be kept up to date on the students’ recovery and share what accommodations are working or need adjustment:

One thing that doesn’t seem to happen, and I’m assuming that it gets relayed from child to parent, to hospital, to the specialist doctor. I don’t get asked from the doctor,

‘hey how is this kid doing in class?’ It’s more the child and the parent self-reporting on how things are going to get that clearance to do more athletics, but where is the clearance for the classroom? At what point are they completely off the accommodations that have been put in place? (Math teacher, personal interview, December 21, 2018)

Aware of the restrictions outlined in HIPAA and FERPA, Mr. Steven explained the challenges of communicating by phone due to the differing schedules in each organization. Although teachers have limited access to phone calls during planning time, doctors may not be able to take calls after clinic hours.

Summary

Data provided examples and evidence supporting the researcher’s previous work on school re-entry (Crylen, 2015), which showed that the communication between spheres of support for a child with TBI is one-directional and dependent on the family and student to disclose the injury. Additionally, the data showed the medical diagnosis for each student was accompanied by a list of recommendations that, when received at the school, was considered required accommodations. The data further showed a lack of documentation in students’ records or formalized accommodations for learning. Also noted was the stigma employed by the adult educators directly related to the terminology used to describe the injury as either concussion or brain injury. From the educators’ lenses, the students’ needs were dependent on the length of recovery either short-term or long-term, as associated with the terms used. The students’ status as athlete or non-athlete further influenced the school’s response to the injury and subsequent interventions. In the next chapter, the interpretation of the findings and the implications for future study will be discussed.

The findings illustrated the two different worlds of the medical and education spheres of support and the opposing cultures that limit students with TBI to achieve success as they face “new ways of learning.” The two systems do not interact with each other, although there is brief one-directional communication, the flow of information is problematic. These two different worlds have different understanding of constraints such as HIPAA and FERPA, accommodations and formal modifications, and organizational culture, which may lead to misinterpretations and misunderstandings. Neither sphere allocates resources to sit down and talk through the Return-to-Learn process for students with TBI. The next chapter will offer implications of the current situation and recommendations for further support of the students with TBI as in the Return-to-Learn process.

Chapter 5: Analysis and Discussion

The purpose of this study was to examine the school reintegration for students with traumatic brain injury (TBI) and their families from the perspective of the school administration, faculty, and medical personnel involved in the Return-to-Learn process. Using a normative approach to organizational theory (Hoyle, 1986), the case study of one high school that served students with TBI and the school's collaboration with a local hospital, addressed the research question through examination of the communication strategies used, decision-making processes, and cultural influences of the medical and educational spheres of support, with the intermediary TBI teacher consultant working out of a state regional education service agency.

The analysis was organized using grounded theory analysis framework (Jeon, 2004) to better understand how the process of school reintegration unfolded in the medical and educational sphere of support to the student with TBI. The analysis explored how, in addition to the current dimensions of activity, participants shared their desired changes to the school reintegration process that align with research influenced practices. The following research questions guided this study:

1. What strategies do hospitals and schools use to communicate during the school reintegration process supporting a student who recently sustained a TBI?
2. What processes do hospitals and schools use to make decisions during the school reintegration process supporting a student who recently sustained a TBI?
3. In what ways do hospital and school culture impact the school reintegration process supporting a student who recently sustained a TBI?

In this chapter, the themes of focus (communication, decision-making, and culture) are discussed, as they help accent the salient discussion points for consideration when examining the Return-to-Learn process for students with TBI, including one-directional communication due to lack of a feedback loop, discrepancy of incidence of TBI impacting decision-making, and differing terminology of concussion and brain injury used in this study. The discussion includes the needed improvements to the Return-to-Learn process regarding communication, decision-making, and culture. The researcher's enhanced conceptual framework to introduce short-term disability in education to transition a student into their *new learning* post-TBI is followed by a discussion of the significance of the results and suggestions for future research.

Data Analysis

Theme 1: Communication. Previous research on school re-entry for students with TBI showed parents as the messengers between the hospital and school (Crylen, 2015; see Figure 3). In the present case study, data showed that the high school student is the primary messenger in the Return-to-Learn process following concussion (see Figure 5). According to the medical doctor, the student is given a letter with the student's diagnosis and the medical team's recommended accommodations with instructions to deliver it to their teachers. (Medical Director, personal interview, December 20, 2018). The school does not engage in direct dialogue with the hospital upon receiving the letter, rather teachers ask the student for further clarification of their needs (Lead counselor, personal interview, December 30, 2018). In turn, the medical doctor asks the student for teacher implementation and the effectiveness of the recommended accommodations outlined in the letter.

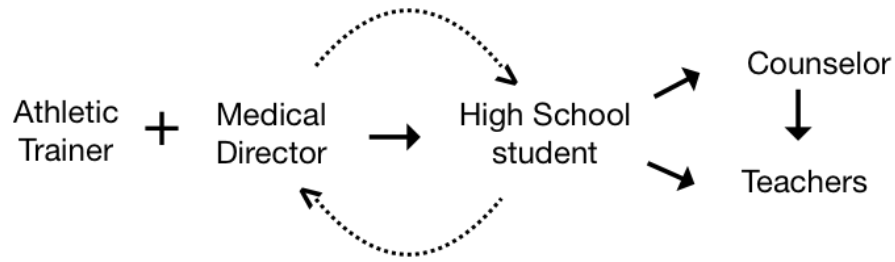


Figure 7. TBI Return-to-Learn communication flow.

As illustrated in Figure 5, data show that communication is one-directional without structured feedback loops between the medical and educational fields. If the medical director knows the student is in a sport and knows that the medical team is working with the school’s athletic trainer, the medical director will fax something to the athletic trainer to ensure the letter of recommended accommodations get to the school counselor. Otherwise, as the medical director states,

Lately, I have just given the kid a ton of copies and said, give this to each teacher individually. And then I’ll take it one step further and ask the teacher to email the parents a day or two after the kid gives the sheet to the teacher [to confirm receipt]. It tends to work the best but certain kids feel they are being a wimp or asking for special something. So, I think that is the best way we have figured out, have the kid give it to the teacher, have the parent circle back and make sure they don’t have any questions.

(Medical director, personal interview, December 30, 2018)

Thus, the student with TBI acts as the messenger between the medical and educational spheres of support, drawing unwanted attention to themselves and becoming further distracted from their primary focus of “new learning” (Marcantuono & Prigatano, 2008).

The data show this flow of communication contributes to the discrepancy in terms of frequency of incidence of TBI among students at Harborville North High School. In this

study, the athletic trainer reported 26 incidences (19 sports-related, 7 non-sports related) and the lead guidance counselor reported six incidences within the same academic fall semester of September 2018 until January 2019 (Athletic trainer, personal interviews, January 8, 2018. Lead guidance counselor, December 30, 2018). Further confounding the frequency of incidence is the static documentation from the medical sphere (see Appendix G) without formal documentation within the educational sphere, as there are no notes made in students' records, only an email trail of correspondence. While on-site at the high school, the athletic trainer does not have access to the school's student information system to write notes to the administration and teachers; she does, however, have a hospital-issued highly-secured laptop to enter notes for the doctor in real-time including her initial evaluation form and daily symptom checker. If the counselors receive the medical letter of recommended accommodations, they will email the teachers; however, they do not make any notation in the student information system or keep the document in the student's physical file. (Lead counselor, personal interview, December 30, 2018). There is also a lack of discussion among teachers outside of emails regarding the student's needed supports and accommodations following the initial weeks of recovery.

Theme 2: Decision-making. This study showed that without a written protocol for students with TBI returning to school, the educational leadership defers to the medical team's recommended accommodations. The data show the doctor's recommendations on environmental and physical accommodations are taken by the school as necessary directives. As the math teacher explained, "Whatever the doctor is recommending is what I do" (Math teacher, personal interview, December 11, 2018). However, without a defined timeline of recovery from the medical doctor, the school uses the return to play medical clearance but

cannot determine the end of accommodations in the classroom. The math teacher shared his frustration, as the student is “self-reporting on how things are going to get that clearance to do more athletics, but where is the clearance for the classroom? At what point are they completely off the accommodations that have been put in place” (Math teacher, personal interview, December 21, 2018).

Across the medical and education fields in this case study, information regarding TBI was disseminated on a *need-to-know* basis for students with TBI in the initial stages of recovery. The medical personnel’s recommended accommodations are limited to the immediate needs of two weeks from initial evaluation (Speech language pathologist, personal interview, December 3, 2018). This time proves difficult as explained by Savage et al. (2005):

The very nature of a TBI makes providing prognostic information very difficult, if not impossible. The ongoing developmental process of brain maturation, along with the changing cognitive challenges during the child’s education, complicate prognostic challenges even further.

After receiving the medical director’s letter and/or email communication from the counselor, teachers receive no direction on the implementation of recommended accommodations. Upon reading the doctor’s recommendations as environmental accommodations, teachers allow students to move to the hallway if the room is too loud and wear hats if the lighting is bothersome. (Math teacher, personal interview, December 21, 2008). Yet, across content areas, *limited screen time* is the recommended accommodation with which teachers have the most challenge. The reading teacher explained the challenge for her students comes in the word processing aspect of the coursework and accessing audio

chapter books at home if they don't have personal audible accounts. (English teacher, personal interview, February 6, 2019). The math teacher said that as the district has moved to online learning modules, teachers are required to "modify things and go back to the old textbook situation" and "pick" the basic points upon which students with TBI should focus. The math teacher continued,

As far as curriculum-wise, there are going to be gaps in that student's learning. That happened with the student I have this year. I know that and I just keep giving building blocks for future success along the way. I hope that student and [their] parents understand that there may be little gaps in there and may need a tutor or some form of remediation along the way. (Math teacher, personal interview, December 21, 2018)

The lack of formal educational accommodations beyond the medical director's list of recommendations and a clear timeline of recovery results in educators relying on student tolerance of work to guide their instruction. In retelling of one student's return to learning, the math teacher shared the following experience:

Over time there is gradual improvement. Then it was a matter of they were doing work for five minutes and rest for ten minutes. It was just a buildup. The doctor's office has written 'as tolerated' kind of thing [on recommended accommodations]. So, I leave a lot to the student as far as what they will and won't do. (Math teacher, personal interview, December 21, 2018).

Teachers report that they are making modifications to the curriculum due to accessibility of materials. When asked if the math teacher seeks consult from special education teachers, he replied, "I'm embarrassed to say, I never thought about that" (Math teacher, personal interview, December 21, 2008). The special education teacher, supporting the English

department this year, is mindful of offering suggestions to teachers for accommodations for students with TBI if she is co-teaching in their classrooms:

I would have to say where there is not a great understanding of how to accommodate the students without them having special ed support. There's a flexibility piece of understanding that this curriculum or homework assignment is not life or death being able to alter something is a difficult concept. I use a phrase of 'old school' mindset, as there is not a lot of understanding of how to help out those kids or making an accommodation with them feeling comfortable about it. (Special education teacher, personal interview, January 30, 2019).

Additionally, the principal will modify the grading scale for students recently injured changing standard letter grades (A, B, C, D, F) to credit/no credit, as to not impact their grade point average or movement to the next grade level (Principal, personal interview, December 30, 2018).

Theme 3: Cultural impact. The data show that nearly every person involved with a student with TBI has had a personal experience with concussion and head injury. These personal experiences are the building blocks that support and hinder greater social awareness of concussion and TBI. Although the medical providers use a spectrum of severity for TBI based on the Glasgow Coma Scale, which drives the diagnoses of mild, moderate, and severe traumatic brain injury (Ylvisker et al., 2001; Glang et al., 2008), the medical director shared the diagnosis of concussion with student patients and their families:

In general, I would refer to it as a concussion. I have some people ask me "oh, is it a fracture or a break?" and really, we are talking about the same thing. "Oh, is it a head injury or a concussion?" And it's like, well, it's not the exact same thing but for all

intents and purposes it is a brain injury.... I have had some, what I call old school types of parents, who say a concussion is a dinger or they have all these kinds of words for it. [Although,] there have been a couple of times that I have had to change my diagnosis from concussion to Traumatic Brain Injury because insurance wouldn't cover it. (Medical director, personal interview, December 26, 2018).

The terminology used to describe the injury matters in the understanding and treatment of students with TBI in the medical and educational settings. Given their personal reference points, educators favor athletes as they acknowledge the risks of contact sports and thus provide more services via the athletic trainer on-site at the school. When asked about parents' response to their child's concussion, the lead guidance counselor stated, "Yeah, I mean you still have [parents saying] 'when I grew up, your got banged in the head and you just shake it off. Might have a headache for a few days.' I think that it still happens. A lot of kids get concussed, headaches for a few days or a week and then they get better" (Lead guidance counselor, personal interview, December 30, 2018). Those non-athletic students with TBI rely solely on medical service providers for services and are reluctant to self-disclose to educators not sure they are eligible for support.

Conclusions

The data in this study showed fragmented collaboration between the hospital and school regarding the Return-to-Learn process for students with TBI. The communication is one-directional from the hospital to the school, relying on the student as the messenger. The educational leaders and teachers of the student defer to the medical team's recommended accommodations without review through an educational lens beyond school/classroom environment.

Framed by organizational theory, the data show the medical team involved with identification and diagnosis of TBI in high school students faced a technical problem to solve, and the educational team working with students with TBI as they return to school post injury faced a dilemma to manage in the Return-to-Learn process. According to Cuban (2001), technical problems involve what is and what ought to be and depends on who is defining the problem, whereas dilemmas are “wicked problems [that] are ill-defined, ambiguous, complicated, interconnected situations packed with potential conflict” (p. 10). This case study found that each dimension of activity (communication, decision-making, and culture) of the medical team and the educational team interacted with another and contributed to and shaped the Return-to-Learn process.

Technical problem. Foundational to this research was addressing the technical problem of who is defining concussion. The present study affirmed the research of Pendharkar, Ho, and Ghajar (2018), who found a disconnect of definitions of concussion and TBI used by the medical and educational spheres. The United States Department of Health and Human Services Center for Disease Control states the following:

Concussion is a type of traumatic brain injury—or TBI—caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth. This sudden movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells. (CDC, 2019)

This definition is used by the medical sphere and in the State of Michigan in sports-concussion legislation (Michigan Public Act 137 of 2017, Section 333.9155 and 333.9156).

The Michigan Administrative Rules for Special Education (MARSE) in Section 340.1716 states the following:

"Traumatic brain injury" means an acquired injury to the brain which is caused by an external physical force and which results in total or partial functional disability or psychosocial impairment, or both, that adversely affects a student's educational performance. The term applies to open or closed head injuries resulting in impairment in 1 or more of the following areas: (a) Cognition, (b) Language, (c) Memory, (d) Attention, (e) Reasoning, (f) Behavior, (g) Physical functions, (h) Information processing, (i) Speech. (Michigan Department of Education, 2014, Rule 16)

The technical problem of definition has influenced the medical director's choice of terminology, which ignites the Return-to-Learn process for students with TBI. The medical director has leaned towards the terminology of *concussion*, as it has more favorable response from parents of high school students (Medical director, personal interview, December 30). In turn, the school receives documentation listing concussion, prompting a dilemma for educators in the management of services for the student.

Dilemma. In the field of education, there is much discussion of limited resources, conflicting values of curriculum, and diverse expectations of practitioners, all problems that may be difficult to solve but can be managed (Yates, 2003). As educators grapple to understand concussion, its symptoms and potential lasting effects on student learning, they address the immediate needs of their students with TBI solely through the directives given by medical personnel. As the principal stated, "If the doctor says there is something we should do, we have no choice. When we don't have that, then it is what it is. The doctor's note is our IEP, if that makes sense" (Principal, personal interview, December 11, 2018). Although the

principal was speaking metaphorically, students with diagnosed disabilities listed in the Individuals with Disability Education Act (IDEA) are eligible for an IEP. The present study showed that the educational team took a normative approach (Bolman & Deal, 1991) and stayed within the parameters of general education without consult or consideration of special education.

Findings of the present study revealed that the school is aware and working on a Return-to-Learn protocol for its concussed student-athletes who are identified by the on-site athletic trainer contracted from the hospital. The lead counselor clarified the school's understanding: "If this [diagnosed concussion] gets to our trainers, then this gets to me quickly, and I organize the [educational] support", (Lead counselor, personal interview, December 30, 2018). In organized sports, a student-athlete sustaining a TBI on the field is initially evaluated using a screener and more thorough ImPACT testing before seeing their medical provider. (Athletic trainer, personal interview, January 8, 2019). However, the data show that non-athletic students who sustain TBI must self-disclose to the school in order to receive additional academic supports.

Further complicating the dilemma, the school's response to any student with TBI was limited to the initial weeks following injury according to the medical letter of recommendations. Haarbauer-Krupa, Glang, Kurowski, and Breiding (2018) stated, "Although initial recovery for most children with mild injury is relatively quick (typically one to six weeks), even a mild traumatic brain injury (mTBI) can have academic, social, and quality-of-life implications for children and their families". In the present study, medical providers shared that research has shifted recovery timelines expediting the return to the classroom from one week to 72 hours post-injury while extending the provisions for

cognitive rehabilitation to several months-time before recommending moving forward on an IEP. (Speech language pathologist, personal interview, December 3, 2018).

High schools throughout the United States face the dilemma of Return-to-Learn for students with TBI following sports-related concussions and miscellaneous head injuries. Findings from this study suggested that medical professionals should address the technical problem of terminology used in diagnosis, which then promotes a collaborative development of a Return-to-Learn protocol with educators to achieve bi-directional communication, collaborative decision-making, and collective cultural understanding of TBI.

Implications for Practice

The findings of this study are important in shaping policy and practice for educational leaders and staff who welcome students returning to learn after sustaining a TBI. The data show a lack of knowledge about TBI among school faculty and staff and scarcity of resources in the school providing direction to meet the needs of students with TBI. Educational leaders can remedy this situation by activating educator's prior knowledge, often personal experience, build understanding about TBI through online trainings and resources, and create written evidence-based Return-to-Learn protocol to be shared with the entire school community including teachers, parents, and students.

Building knowledge. The sentiment “we don't know, what we don't know” was repeatedly expressed throughout the interviews conducted in this case study. Although the reference was made in terms of severe brain injury, data showed that many participants in the study have had a personal experience with TBI and have referred to it as concussion. The principal's son sustained concussion in high school sports and his daughter was born with a brain tumor; the math teacher's daughter sustained a TBI during middle school and missed a

significant amount school; and the medical director sustained a concussion during her medical board exams (Principal, personal interviews, December 20, 2018; Medical director, personal interview, December 21, 2018). Given their personal experiences, these members of the medical and educational spheres demonstrated an investment to improve the Return-to-Learn process with their participation in the collaborative creation of a draft copy of TBI Return-to-Learn guidelines (see Appendix H) led by the TBI teacher consultant over the last two years. (TBI teacher consultant, personal interview, November 14, 2018). This trend aligns with the literature on teacher motivation to pursue careers in special education.

According to Zhang, et al. (2014), “Personal experiences such as having close personal experiences with individuals with disability (e.g., family members, close friends, or oneself) demonstrated a significant effect on [pre-service teaching] students’ interest and commitment to serving people with special needs” (p. 166). Although motivation is high to support students with TBI, general education teachers have little training in special education and little to no understanding of TBI, as evidenced by the confusion of terminology of accommodations and modifications throughout the interviews (Special education teacher, personal interview, January 30, 2019).

Following the adoption of social-emotional learning models and anti-bullying programs, the data showed that the teachers at North Harborville High School are receptive to guest speakers and training on concussion as TBI impacts learning in the classroom. At the time of this study, the State of Michigan does not have a program sponsored through the Department of Education about Return-to-Learn. Educational leaders may find programs sponsored by other states and national agencies helpful, including the STEPS consulting program recommended by the Colorado and Pennsylvania Department of Education and

Health, the online course offered by CBIRT at the University of Oregon entitled, *In the Classroom After Concussion*, and online modules provided by the HEADS UP educational initiatives of the CDC.

Taking the lead. In the United States, socio-cultural norms position the medical sphere with more authority than the educational sphere, as instituted through the federal legislation, IDEA (1990). The medical diagnosis of disability drives the necessity for special education evaluation, planning, and implementing an IEP or 504 plan to access FAPE. After being given the medical director's letter of recommended accommodations, families look to the school to take the lead as they navigate the Return-to-Learn process.

The present case study exhibited education leadership's deference to the medical doctor with the immediate implementation of the recommended accommodations without applying an educational lens: "The recommended accommodations were purely environmental as educators understand environmental factors as they refer to the way the classroom is organized, the structure of the day, and lighting of the room" (Math teacher, personal interview, December 21, 2018). The recommended accommodations were not considered in context of a brain injury's impact upon the students' spatial awareness, mental fatigue, and sensory over-stimulation, typical symptoms of TBI.

Without consultation of the special educators at the school, the general education teachers deferred to the medical doctor as the authority over the students' Return-to-Learn process. The title of *Dr.* when referring to the medical director was used by all adults working with the injured students inside both the medical spheres and the educational sphere, which implies expertise eliciting the *tell me what to do* plea from school administrators and teachers. Conversely, the MTSS structure places the special education teacher as the

authority figure in directing general education teachers through identification, assessment, diagnosis, evaluation, and the IEP planning process (Fuchs, Fuchs, & Vaughn, 2014).

Return-to-Learn protocol. Legislation in only nine states require Return-to-Learn protocols in schools, and only three of those states require Return-to-Learn education for school personnel. Michigan is not one of these states (National Conference of State Legislatures, 2017). Participating educational leaders in this study touched on the creation of a Return-to-Learn protocol in their school, although it was not written at the time of this study. The medical director and the TBI teacher consultant continue to work on a draft of such protocol as a template for schools to use (see Appendix H). Important to note, the first section of this draft Return-to-Learn protocol states, “A concussion is a traumatic brain injury occurring from a hit, bump or jolt to the head or body that results in rapid brain movement” (Appendix H). This definition will further support the needed change in terminology and understanding that a concussion is a brain injury.

Although special education law institutes that communication starts with the medical provider, there is a needed system to communicate allocation of resources, to talk through the recovery process, and to reject quick and easy cheap solutions that have little impact on school programs by directing students with TBI towards general education interventions and away from the benefits afforded them through the IDEA. At the heart of education is the curriculum and instruction that meets students’ needs to achieve and learn, and thus, a reframing of TBI as a short-term disability is necessary to ensure the students’ physical and cognitive recovery.

Recommendations for Practice

Concussion is not understood as a disability. If it was, it would immediately qualify for special education review and consult by school teams receiving initial diagnosis from medical providers. As discussed in this study, concussion is the commonly used term for mTBI, which is a blunt force trauma to the brain registering between 13 and 15 on the Glasgow Coma Scale (Joseph et al., 2015). Calling a concussion by its medical diagnosis, mTBI, would direct the three divergent themes of communication, decision-making, and culture converge into one directive.

Renaming concussion as mTBI is the linchpin to introduce the concept of short-term disability and ultimately actualizing the social model in education. As the mTBI recovery timeline shifts from returning to the physical school building to include Return-to-Learn in the early months following injury, short-term disability allows neuroplasticity to work in healing the brain before making permanent changes to the student's status with declarations of disability and formalized special education services.

Framing concussion as a short-term disability for the first-year post-injury before moving to IEP, embraces the capability approach allowing for existing MTSS to activate with the expedited creation of a child study team. Although long-term cognitive and behavioral impairments are less likely following a single mTBI, research showed that there are increased hyperactivity and reading challenges. According to Haarbauer-Krupa et al. (2018), "More recent research examining social behavior in children after mTBI found difficulties in social outcomes, including problems with emotional perception, social skills, social problem-solving, and social language use" (p. 29). Figure 6 is a revision of the stages

of TBI reintegration process introduced in Chapter 2 (see Figure 4) to reflect the reframing of concussion as short-term disability driving education decision-making.

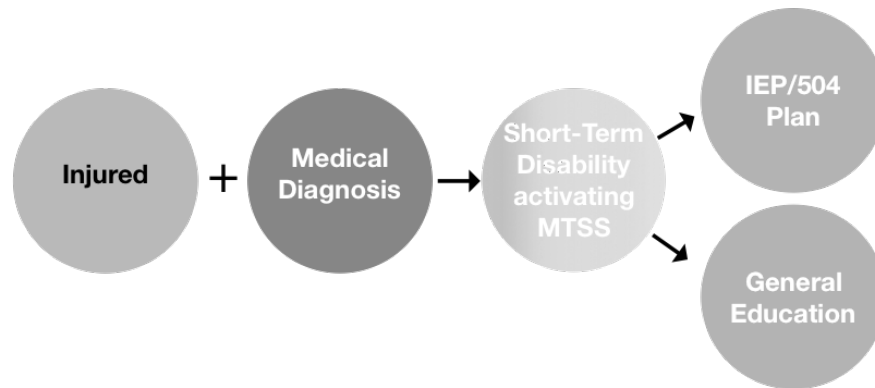


Figure 8. Stages of TBI return-to-learn process.

“New learning” framework. The researcher proposes a new conceptual framework for consideration that further extends the nested theories of action (Argyris & Schön, 1974) framework adapted from Duffy (2009) that was used in this study in relation to the Return-to-Learn process. The nested theories of action framework was based on activity theory constructed by Vygotsky (1978), expanded by Rogoff et al. (1995), with levels of resolution including interpersonal, cultural/community, and institutional/cultural planes and integrated Spillane’s (2006) discussion of the context of action with the tension between agency and distribution.

The present study was bounded by the two models of disability, thus the nesting was divided into the medical and social model (Shapiro, 1993) The medical model, espouses a fix to a handicap to function in society, and the social model embraces disability with full participation in society without changing oneself (Baglieri, 2017). A new model of disability must be incorporated into this conceptual framework. Figure 7 introduces the paradigm of a short-term disability that bridges the medical and social model of disability. Disrupting the current either/or qualification for special education services, the new

framework provides a transitional structure for students with TBI returning to school and learning.

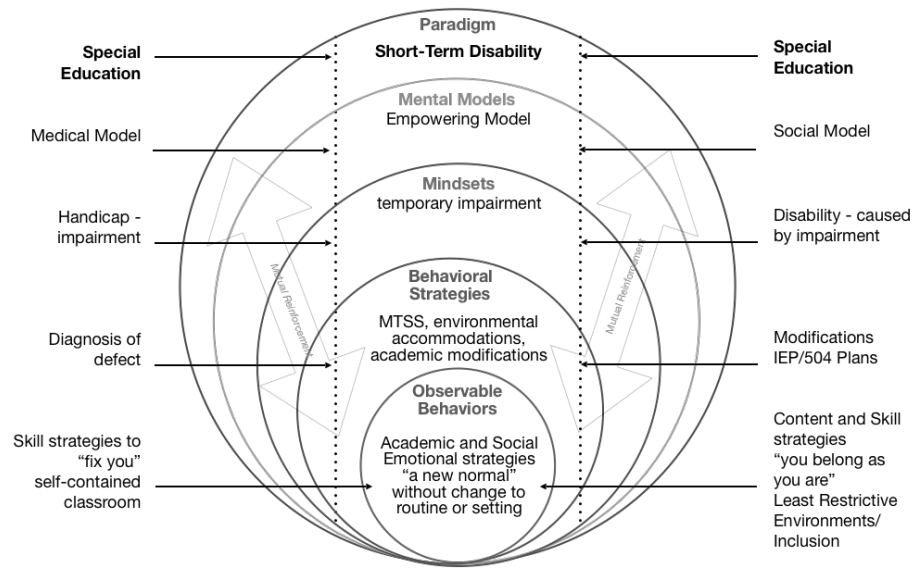


Figure 9. “New learning” framework.

Short-term disability. The descriptive narratives provided in the present study suggested a need to reframe the concept of TBI, commonly referred to as concussion, as short-term disability during the first-year post-injury as a tenant of the Return-to-Learn process. Although we cannot simply conclude that every student who sustains a TBI is in need of disability services, there seems to be a need to provide modifications to curriculum and instruction with consultation with a special educator in addition to the environmental accommodations suggested by the medical doctor (Schilling & Getch, 2001). It appears that these accommodations and modifications are probably necessary for a short period of time following injury to allow the neuroplasticity of the brain to work. As Johnson (2003) explained, “Plasticity includes the brain's capacity to be shaped or moulded by experience, the capacity to learn and remember, and the ability to reorganize and recover after injury” (p. 105). As each person’s brain is unique, the chronological timeline of recovery varies and is

dependent on age. (Johnston, 2003). Future research may seek to address the correlating timelines of TBI recovery as it pertains to physical and academic activity and the monitoring required following injury (Cronin, 2001; Mealings & Douglas, 2010).

Unlike other studies that focus on school reintegration for students with TBI, the current study highlighted the complex relationships between the medical and educational spheres value, attitude, and belief in TBI as a disability. Whereas medically, concussion is a mild TBI and educationally a TBI is identified as a disability under the Individuals with Disability Act (IDEA), either sphere is eager/prepared/willing to label the student immediately with deficit-based terminology. Janet Hoskin (2016) described this “dilemma of difference” as being torn between giving “young person a diagnosis or label so that they can benefit from a particular support or resource, or whether we treat them just like other people so that they do not feel ‘different’ but are included in society like everyone else” (para. 1).

Capacity approach of disability. In this new framework, an empowering model is the mindset grounded in the social model of disability. Whereas the field of special education grew out of a social call to de-institutionalize students with medically diagnosed disabilities and provide accessible education in public schools, it now espouses the least restrictive environment for learning through the practice of inclusion. As discussed, the field of special education is dependent on the medical field for direction in assessment, labeling, and diagnosing treatment for these non-normative students. Moving away from segregation to integration and inclusion, special education has straddled the fence between the medical and social model of disability. Teachers trained in special education are prepared to work with students born with congenital disability, identified early with developmental delays and learning challenges; however, there is little preparation in working with a student’s abrupt

entry into disability. The trauma experienced in TBI extends beyond the severe disruption to brain function to include the chaos of immediately entering an unknown world of disability and special education.

Findings of the current research suggested the adoption of the capability approach for students experiencing physical, mental, and social trauma. Terzi (2005) said,

The capability approach is a framework of thought, not an educational theory.

Nevertheless, in helping to reconcile the dualism and the tensions inherent in current understandings and models of disability and special educational needs, and in positioning people's capabilities and the achievement of their well-being as central.

(p. 457)

Developed by Indian Welfare Economist Amartya Sen in 1992, the capability approach focuses on the assessment of personal well-being, poverty, and inequality in order to create a plane to discuss equity on a multidimensional scale. Applied to disability, the capability approach identifies the individual's functioning, their being and doing, their capabilities, and freedoms to achieve. The capability approach satisfies the transitional needs of a student with TBI in the Return-to-Learn process as they move from *normal* to a *new normal* more accurately described as a new way of learning (Marcantuono & Prigatano, 2008). A capability approach addresses the ethic of justice present in public education during the grey period of identification and assessment of students presenting learning challenges.

Implications for Future Research

The present study contributes to the literature by providing an insider's perspective as the researcher is an individual who has experienced TBI and has experience as both a teacher

and principal of a school. Overall, the present study supported a reframing of mTBI as short-term disability in both the medical and educational spheres, which provides time for the brain to heal and bridge the gap between the medical and social model of disability. Results also indicated a significant need for Return-to-Learn protocols by federal and state agencies including the center for disease control and the department of education.

Further research is needed in differentiated settings with larger sample sizes in both qualitative and quantitative case studies. Exploring the Return-to-Learn process in urban environments may shed new light on the collaboration between public schools and community health clinics. A closer look at longitudinal data through a quantitative case study may show the trends in medical diagnosis, student self-disclosure, and documentation of educational decision-making about accommodations and modifications of curriculum and instruction. Future research on the proposed new learning framework should include stakeholder voices from the field of special education in the creation of short-term disability management and services in the school. This finding needs to be cross validated in a variety of student populations with consideration of socio-economic factors affecting families' access to medical resources and the school's available resources.

Limitations

Caution is advised when interpreting results that are primarily related to participant sampling. As part of this study, the researcher interviewed three medical providers at a local medical clinic that specializes in concussion, six educators in one high school, and one teacher consultant from the regional education service area specializing in TBI; all of those participants worked together over the course of three months in the middle of the 2018-2019 academic year. Data collection included audio-recordings of interviews, field notes of

observations, and documentation provided by all three groups. The sample may limit the extent to which the findings can be generalized to other high schools that may not have athletic trainers onsite contracted from a local hospital, and/or TBI teacher consultants working out of the regional educational service agencies or county offices. Additionally, not every state in the union has the same legislation regarding TBI in K-12 education. This study was conducted in the State of Michigan, which has legislation on special education including a definition of TBI, which qualifies students for services (Michigan Department of Education, 2014) and return-to-play, specifying the conditions under which student athletes in organized sports must be pulled from the field for medical attention (Michigan Public Act 137 of 2017, Section 333.9155 and 333.9156), but no Return-to-Learn guidelines or protocols for educators to follow after the student with TBI has been medically cleared to return to the classroom.

Summary and Conclusions

The present study impacts the field by demonstrating a need to improve communication, which impacts the long-term outcomes of the student moving from a static to dynamic model of decision-making and a shift in cultural bias towards inclusiveness. Educational leaders are not aware of the gap between Return-to-Play and Return-to-Learn, and they face uncertainty in bounded rationality of special education regarding students with TBI. In looking at the school reintegration process, educational leaders have an opportunity to shape the process and policy of reintegration through the collaborative work both within and outside their academic organizations.

Recommendations include use of the medical terminology of mTBI and to embrace the capacity approach to disability and put communication, decision-making, and cultural

influence within the context of the short-term disability. All participants are placed on a par of understanding, action, and acceptance of the tenants of the social model of disability. Additionally, the medical community can use the mechanism of short-term disability to translate mTBI into the medical model. The three divergent themes of communication, decision-making, and culture converge into one directive.

From the insider perspective, the *New Learning* framework provides the buffer zone between immediate extreme needs to the more manageable needs that resolve on a life scale. Framing concussion as a short-term disability opens the restrictive constructs of special education to communicate the what, why, and how to support a student through the transition of healing the brain without stifling the student's routine, social interactions, or adding stress to the student.

This solution does not provide provision for all invisible challenges, including mental health, depression, and suicidal attempts into the MTSS framework, as TBI is a tangible, medically diagnosed disability under federal legislation IDEA, in which TBI is listed as a disability eligible for special education services.

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APPENDICES

Appendix A: Recruitment/Invitation Materials

A-1 (email) Invitation to TBI Teacher Consultant

Dear Ms. Buteyn,

I am writing to ask you to take part in a research study. The goal of the study is to understand the school reintegration process of children with Traumatic Brain Injury from the educational leaders' perspective. I want to examine the collaboration between the hospital and the school and the decision-making process in the student's reintegration to the classroom. Little is known about the communication between medical providers and school personnel that affects the IEP process and formation of a transition plan for the child with TBI leaving the hospital and re-entering their elementary school. I am planning to conduct this study in an Intermediate School District that supports these students with a TBI Teacher Consultant like yourself. I will not be following the specifics of the child's experience returning to school, rather the members of the hospital and school teams that make decisions about the level of services the student will receive.

I am undertaking this study as my doctoral dissertation at the Eastern Michigan University, though I am also a TBI survivor myself.

In this study I hope to conduct interviews and observations between late August and December 2018. In order to gain multiple perspectives on the school reintegration process, I would like to interview you, any team members assigned to this student's case, the school leadership, the classroom and the special education teacher. If possible, I would like to talk with the student and their parent as well. The study is not in any way evaluative of you or Ottawa Area Intermediate School District or hospital partners, and it will hopefully inform future supports for children with TBI in their school reintegration. This study will in no way impede on the rehabilitative treatment or the IEP process of the child with TBI.

Taking part in this study is voluntary. Participants can stop at any time, and all information is confidential. If the results of the study are published or presented, I will not use the names of people, names of schools, or any other information that would identify participants, the school, or the district. If you have any questions about your rights as a research participant, please contact Ronald Williamson at 734-487-3807.

Thank you for considering this opportunity. I will be contacting you shortly by phone to discuss this with you further. Should you have any questions or concerns, please feel free to contact me by phone (312-888-0488) or via email at acrylen@emich.edu

Yours sincerely,

Anne Crylen
Doctoral Candidate
Educational Leadership
College of Education
Eastern Michigan University

A-2 (Email) Invitation to Medical Provider

Dear [Doctor Name],

Barb Beutyn at Ottawa Area Intermediate School District suggested I call you about a research study I am conducting. As she may have told you, my name is Anne Crylen and I am a doctoral candidate at Eastern Michigan University working on my PhD in Educational Leadership. The goal of the study is to understand how educational leaders make decisions about children with TBI as they prepare to return to school. I want to examine how the hospital and the school support your child and your family in this transition. Little is known about the communication between medical providers and school personnel and how this affects the school plan for children with TBI. I am planning to conduct this study at OAISD and am looking to meet and interview a student and their parent who are in the early stages of recovery and just starting to go back to school.

I am undertaking this study as my doctoral dissertation at the Eastern Michigan University, though I am also a TBI survivor myself.

In this study I hope to conduct interviews and observations between late August and December 2018. In order to gain multiple perspectives on the school reintegration process, I would like to interview you, any team members assigned to this student's case, the school leadership, the classroom and the special education teacher. If possible, I would like to talk with the student and their parent as well. The study is not in any way evaluative of you or Ottawa Area Intermediate School District or hospital partners, and it will hopefully inform future supports for children with TBI in their school reintegration. This study will in no way impede on the rehabilitative treatment or the IEP process of the child with TBI.

Taking part in this study is voluntary. Participants can stop at any time, and all information is confidential. If the results of the study are published or presented, I will not use the names of people, names of schools, or any other information that would identify participants, the school, or the district. If you have any questions about your rights as a research participant, please contact Ronald Williamson at 734-487-3807.

Thank you for considering this opportunity. I will be contacting you shortly by phone to discuss this with you further. Should you have any questions or concerns, please feel free to contact me by phone (312-888-0488) or via email at acrylen@emich.edu

Yours sincerely,

Anne Crylen
Doctoral Candidate
Educational Leadership
College of Education
Eastern Michigan University

A-43(Email) Invitation to School Personnel

Dear [Principal's Name],

I am writing to ask you to take part in a research study. The goal of the study is to understand the school reintegration process of children with Traumatic Brain Injury from the educational leaders' perspective. I want to examine the collaboration between the hospital and the school and the decision-making process in the student's reintegration to the classroom. Little is known about the communication between medical providers and school personnel that affects the IEP process and formation of a transition plan for the child with TBI leaving the hospital and re-entering their elementary school. I am planning to conduct this study in an Intermediate School District that supports these students with a TBI Teacher Consultant. I will not be following the specifics of the child's experience returning to school, rather the members of the hospital and school teams that make decisions about the level of services the student will receive.

I am undertaking this study as my doctoral dissertation at the Eastern Michigan University.

In this study I hope to conduct interviews and observations between late August and December 2018. In order to gain multiple perspectives on the school reintegration process, I would like to interview you, any team members assigned to this student's case, including the classroom and the special education teachers. With parental consent, I would like to observe any educational meetings including 504/IEP discussions. As a former principal myself, I understand the issues of privacy and confidentiality and will gain parental consent before continuing. Additionally, the study is not in any way evaluative of you or Ottawa Area Intermediate School District or hospital partners, and it will hopefully inform future supports for children with TBI in their school reintegration. This study will in no way impede on the rehabilitative treatment or the IEP process of the child with TBI.

Taking part in this study is voluntary. Participants can stop at any time, and all information is confidential. If the results of the study are published or presented, I will not use the names of people, names of schools, or any other information that would identify participants, the school, or the district. If you have any questions about your rights as a research participant, please contact Ronald Williamson at 734-487-3807.

Thank you for considering this opportunity. I will be contacting you shortly by phone to discuss this with you further. Should you have any questions or concerns, please feel free to contact me by phone (312-888-0488) or via email at acrylen@emich.edu

Yours sincerely,

Anne Crylen
Doctoral Candidate
Educational Leadership
College of Education
Eastern Michigan University

Appendix B: Consent Form

Participant Consent Form: Medical Provider, TBI Teacher Consultant, School Personnel

**EASTERN MICHIGAN UNIVERSITY
CONSENT FORM
Return-To-Learn After Traumatic Brain Injury:
The Impact of Hospital and School Collaboration**

Principal Investigator:

Anne Crylen, Doctoral Candidate
Eastern Michigan University, College of Education
312-888-0488
acrylen@emich.edu

Committee Chair:

Ronald Williamson, Ed.D, Professor
Eastern Michigan University, College of Education
734-487-2807
rwilliams1@emich.edu

Investigator's statement

We are asking your permission to include you and your child in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." We will give you a copy of this form for your records.

PURPOSE OF THE STUDY

The Center for Disease Control cites Traumatic Brain Injury as a leading cause of disability in children. The purpose of this study is to understand the process of school reintegration from hospital to school for students with TBI to help explain the student's academic and socio-emotional success. This study is not a policy analysis, rather it is an effort to "uncover the meaning" of education needs and support for students returning to school with brain injury. This qualitative study attempts to understand the experience of school reintegration from the perspective of the educational leaders supporting a student with TBI and their family through a case study analysis.

STUDY PROCEDURES

The lead researcher of this study, Anne Crylen asks for your permission for you to participate in this study because a child under your care has met the eligibility criteria of having a Traumatic Brain Injury.

Medical Providers, TBI Teacher Consultant, and School Personnel who agree to participate will be interviewed for about 30 minutes about how they have worked with children with traumatic brain injury and their experience working with families and other agencies in preparing their child to re-enter school post injury. For example, the researcher will ask you, “What challenges does a child with traumatic brain injury face when they are returning to school after their injury?” and “Can you tell me what happened when one of your patients/students was informed they could go back to school?” If you agree, the interviews will be recorded, but real names will never be documented in any reports. Pseudonyms will be used throughout all documentation, and recordings will be destroyed following analysis.

RISKS, STRESS, OR DISCOMFORT

Some people feel that providing information for research is an invasion of privacy. I have addressed concerns for your privacy in the section below. There is absolutely no risk of any of the other participants in the study or senior staff members of your team knowing what you say in these interviews. All participants have pseudonyms and actual identifiers will never be released.

ALTERNATIVES TO TAKING PART IN THIS STUDY

Taking part in this study is voluntary. Whether or not you participate in this study will not affect the provider/patient/student relationships. You may choose to stop participating in the study at any time by contacting the researchers listed at the beginning of this form.

BENEFITS OF THE STUDY

Due to your willingness to participate, our team will learn what supports are necessary to help children with traumatic brain injury return to school. We may also learn how hospitals and schools can better support children with TBI and their caregivers to improve future transition outcomes.

CONFIDENTIALITY OF RESEARCH INFORMATION

Being in this research is your choice. If you give permission, your data will be kept in a locked file cabinet and/or password protected spreadsheet by the lead researcher and only the researchers will have access. Each adult participant will receive a numeric code, and the single documents that link the participants’ codes to names will be stored in a locked file cabinet in the lead researchers’ office. We will destroy this link no later than June 15, 2024. All assessment documents, recordings, etc., will only have the participants’ codes on them. If the results of this study are published or presented in any format, we will not use your name.

All of the information you provide will be confidential. However, if we learn that you intend to harm yourself or others, we must report that to the authorities.

Government or university staff sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

OTHER INFORMATION

RECORDING

We would like to record the interview as reference while proceeding with this study. We will not record this interview without your permission. If you do grant permission for this conversation to be recorded, you have the right to revoke recording permission and/or end the interview at any time.

If you have any questions about this study, you can contact Anne Crylen at the telephone or e-mail listed above.

Printed name of study staff obtaining consent	Signature	Date
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Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above. If I have questions about my rights as a research subject, I can call Dr. Ronald Williamson at 734-487-2807. I will receive a copy of this consent form.

(Please check ONE).

I give permission for this researcher to audiotape my interview.

I do NOT give my permission for the researcher to audiotape my interview.

Printed name of subject	Signature of subject	Date
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Copies to: Researcher, Subject

Appendix C: EMU Human Subjects Review Committee Approval

Aug 13, 2018 3:43 PM EDT

To: Anne Crylen
Eastern Michigan University, Leadership and Counseling
Re: Expedited Review - Initial - UHSRC-FY18-19-17 Return-To-Learn After Traumatic Brain Injury:
The impact of hospital and school collaboration in school re-entry

Dear Dr. Anne Crylen:

The Eastern Michigan University Human Subjects Review Committee has rendered the decision below for

Return-To-Learn After Traumatic Brain Injury: The impact of hospital and school collaboration in school re-entry.

You are approved to conduct your research.

Decision: Approved

Selected Category: 6. Collection of data from voice, video, digital, or image recordings made for research purposes.

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Findings: You must use stamped copies of your recruitment and consent forms.

To access your stamped documents, follow these steps: 1. Open up the Dashboard; 2. Scroll down to the Approved Studies box; 3. Click on your study ID link; 4. Click on "Attachments" in the bottom box next to "Key Contacts"; 5. Click on the three dots next to the attachment filename; 6. Select Download.

Renewals: This approval is valid for one year and expires on August 12, 2019. If you plan to continue your study beyond August 12, 2019, you must submit a continuing review application in Cayuse IRB at least 14 days prior to August 12, 2019 so that your approval does not lapse.

Modifications: All changes to this study must be approved prior to implementation. If you plan to make any changes, submit a modification request application in Cayuse IRB for review and approval. You may not implement your changes until you receive a modification approval letter.

Problems: All deviations from the approved protocol, unanticipated problems, adverse events, subject complaints, or other problems that may affect risk to human subjects or alter their willingness to participate must be reported to the UHSRC. Complete the incident report application in Cayuse IRB.

Please contact human.subjects@emich.edu with any questions or concerns.

Sincerely,
Eastern Michigan University Human Subjects Review Committee

Appendix D: Interview Protocols

D-1 TBI Teacher Consultant Interview Protocol

Thank you very much for taking the time to talk with me today. This research is studying the decision-making processes involved in the student's reintegration to school after sustaining a Traumatic Brain Injury. This interview will focus on your involvement in this student's school re-entry process.

Grand tour/Background

Q1. Can you briefly tell me about your background and current position?

Q2. Please tell me briefly about the TBI reintegration support your office provides. How has this service changed over the past year?

Q3. Please tell me more about the student with TBI reintegrating to school that we will be following. Please include the demographic information and school history.

Understanding school reintegration

Q4. What is your role in the decision-making process for this student's return to school?

Q6. Where is the student in the reintegration process? Who is involved?

Decision Making Procedures

Q7. What factors influence the decision-making process for this student to return to school?

Q8. How does your particular position influence how you plan this student's return to school?

Q9. What do you consider the greatest strengths and successes of your team in the TBI transition process? What are the biggest challenges facing your team?

Knowledge of TBI as a disability

Q10. What are the goals you have for the student and their family in the reintegration process?

Q11. What are the challenges you are facing with the student and family in the school reintegration process?

Q12. From your perspective how is this transition process different from any other kind of trauma, like a physical ailment?

Action with MTSS, RTI, IEP

- Q13. What is involved in deciding to move forward with special education?
- Q14. What disability label is being considered?
- Q15. What evidence or information will be used or not used in making the decision? Why?

D-2 Medical Provider Interview Protocol

Thank you very much for taking the time to talk with me today. This research is studying the decision-making processes involved in the student's reintegration to school after sustaining a Traumatic Brain Injury. This interview will focus on your involvement in this student's school re-entry process.

Grand tour/Background

- Q1. Can you briefly tell me about your background in pediatric TBI and current role?
- Q2. Please tell me briefly about the TBI recovery to school goals in general for your patients.
- Q3. Please tell me more about this student with TBI reintegrating to school. Please include the demographic information and medical diagnosis, given the parent has given consent in regard to HIPPA.
- Q4. What is your role in the decision-making process for this student's return to school?

Understanding school reintegration

- Q5. Why did you decide to work on school reintegration process for this student? How is this different than other children you have under your charge?
- Q6. Have you had to provide documentation to the school?

Decision Making Procedures

- Q7. What factors influence the decision-making process for this student to return to school?
- Q8. How does your particular position influence how you plan this student's return to school?
- Q9. What do you consider the greatest strengths and successes of your team in the TBI transition process? What are the biggest challenges facing your team?

Knowledge of TBI as a disability

Q10. What are the goals you have for the student and their family in the reintegration process?

Q11. What are the challenges you are facing with the student and family in the TBI recovery process and their understanding of school reintegration?

Q12. From your perspective how is this transition process different from any other kind of trauma, like a physical ailment?

D-3 School Principal, Teacher, Specialist Interview Protocol

Thank you very much for taking the time to talk with me today. This research is studying the decision-making processes involved in the student's reintegration to school after sustaining a Traumatic Brain Injury. This interview will focus on your involvement in this student's school re-entry process.

Grand tour/Background

Q1. Can you briefly tell me about your background and current position?

Q2. Please tell me more about the student with TBI reintegrating to school that we will be following. Please include the demographic information, medical diagnosis, school history prior to injury to your knowledge, given the parent has given consent in regard to HIPPA/FERPA through the district.

Q3. What is your role in the decision-making process for this student's return to school?

Understanding school reintegration

Q4. Why did you decide to work on school reintegration process for this student?

Q5. At what stage of the school reintegration process were you invited into the conversation?

Decision Making Procedures

Q6. What factors influence the decision-making process for this student to return to school?

Q7. How does your particular position influence how you plan this student's return to school?

Q8. What do you consider the greatest strengths and successes of your school team in the TBI transition process? What are the biggest challenges facing your team?

Knowledge of TBI as a disability

- Q9. Prior to this student's situation, what was your knowledge of TBI. How has your understanding changed?
- Q10. What are the goals you have for the student and their family in the reintegration process?
- Q11. What are the challenges you are facing with the student and family in the school reintegration process?
- Q12. From your perspective how is this transition process different from any other kind of trauma, like a physical ailment?

Action with MTSS, RTI, IEP

- Q13. What is involved in deciding to move forward with special education?
- Q14. What disability label is being considered?
- Q15. What evidence or information will be used or not used in making the decision? Why?

D-4 Caregiver Interview Protocol

Thank you very much for taking the time to talk with me today. As you know, this research is studying the decision-making processes involved in your child's return to school following their Traumatic Brain Injury. This interview will focus on your involvement in the process of your child returning to school.

Grand tour/Background

- Q1. Can you briefly tell me about your child and your family? How many siblings do they have?
- Q2. Can you tell me what happened when the child had the injury?
- Q3. Where did they go for treatment? What therapies did/do they receive? How is information shared about their treatment?

Understanding school reintegration

- Q4. How did the school find out about your child's injury? Did the hospital or the caseworker contact the school on your behalf?

Q5. What meetings are being set up or have been set up to make sure your child is going to go back to school successfully?

Q6. Did you have a voice in those meetings?

Knowledge of TBI as a disability

Q7. What worries do/did you have about sending your child back to school?

Q8. What have their biggest successes been since returning to school? What helped them gain this success?

Q9. What have their biggest challenges been? What would help them with these challenges?

Q10. What has your biggest challenge been in this process returning to school?

Action with MTSS, RTI, IEP

Q11. From your perspective, what do educators need to know about students with TBI?

Q12. Did you agree with the decision to follow special services at the school for your child?

Q13. What was your goal for the child after the TBI? Have they achieved it? What helped them accomplish that goal?

D-5 Child with Traumatic Brain Injury Interview Protocol

Thank you for talking with me. I am trying to understand more about your injury. We will talk for about an hour with a break when you need it. I will tape-record our conversation and sometimes ask you to draw me a picture. We can stop at any time; just let me know if you don't want to talk anymore. Do you have any questions before we get started?

Grand tour/Background

Q1. I want to know more about you. What do you like to do for fun? What is your favorite part about school? Tell me about your friends? What do you like to do with them?

Q2. Can you tell me what happened when you hit your head?

Q3. What is different after you got hurt?

Understanding school reintegration

Q4. Are you excited to go/be back in school?

Q7. Tell me about the best day you have had since returning to school? What helped you be successful that day?

Q8. Tell me about one of the hardest days you have had since starting school? What would help you with these challenges? What kinds of help do you feel you need most now?

Knowledge of TBI as a disability

Q9. What do you want your friends to know about how you got hurt? Do you call it by a special name?

Q10. Do you know other children who have had this same injury?

Action with MTSS, RTI, IEP

Q11. How do you tell someone you need help because you got hurt?

Q12. What do you want the other student to know if they don't have this injury but know someone who does?

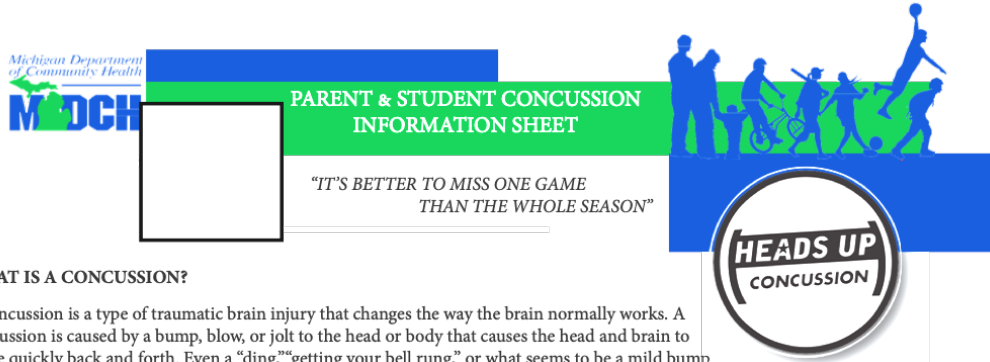
Q13. What do you want teachers to know about students with this injury/disability?

Wrap Up

Q14. What do you want to be when you grow up? What is going to help you get to that goal?

Q15. Is there anything else you want to share with me?

Appendix E: School Concussion Waiver for Parent Signature



WHAT IS A CONCUSSION?

A concussion is a type of traumatic brain injury that changes the way the brain normally works. A concussion is caused by a bump, blow, or jolt to the head or body that causes the head and brain to move quickly back and forth. Even a “ding,” “getting your bell rung,” or what seems to be a mild bump or blow to the head can be serious.

WHAT ARE THE SIGNS AND SYMPTOMS OF CONCUSSION?

DID YOU KNOW?

- Most concussions occur without loss of consciousness.
- Individuals who have, at any point in their lives, had a concussion have an increased risk for another concussion.
- Young children and teens are more likely to get a concussion and take longer to recover than adults.

Signs and symptoms of concussion can show up right after the injury or may not appear or be noticed until days or weeks after the injury.

If a student reports one or more symptoms of concussion after a bump, blow, or jolt to the head or body, s/he should be kept out of play the day of the injury. The student should only return to play with permission from a health care professional experienced in evaluating for concussion.

CONCUSSION DANGER SIGNS

In rare cases, a dangerous blood clot may form on the brain in a person with a concussion and crowd the brain against the skull. An injured individual should receive immediate medical attention if after a bump, blow, or jolt to the head or body s/he exhibits any of the following danger signs:

- One pupil larger than the other
- Is drowsy or cannot be awakened
- A headache that gets worse
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Cannot recognize people or places
- Becomes increasingly confused, restless, or agitated
- Has unusual behavior
- Loses consciousness (even a brief loss of consciousness should be taken seriously)

SYMPTOMS REPORTED BY INJURED INDIVIDUAL:

- Headache or “pressure” in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion
- Just not “feeling right” or is “feeling down”

SIGNS OBSERVED BY STAFF:

- Appears dazed or stunned
- Is confused about assignment or position
- Forgets an instruction
- Is unsure of game, score, or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows mood, behavior, or personality changes
- Can’t recall events prior to hit or fall
- Can’t recall events after hit or fall

WHY SHOULD A STUDENT REPORT THEIR SYMPTOMS?

If a student has a concussion, his/her brain needs time to heal. While a student’s brain is still healing, s/he is much more likely to have another concussion. Repeat concussions can increase the time it takes to recover. In rare cases, repeat concussions can result in brain swelling or permanent damage to their brain. They can even be fatal.

WHAT SHOULD YOU DO IF YOU THINK YOUR STUDENT HAS A CONCUSSION?

1. If you suspect that a student has a concussion, remove the individual from play and seek medical attention. Do not try to judge the severity of the injury yourself. Keep the student out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says s/he is symptom-free and it’s OK to return to play.
2. Rest is key to helping an individual recover from a concussion. Exercising or activities that involve a lot of concentration, such as studying, working on the computer, and playing video games, may cause concussion symptoms to reappear or get worse. After a concussion, returning to sports and school is a gradual process that should be carefully managed and monitored by a health care professional.
3. Remember: Concussions affect people differently. While most individuals with a concussion recover quickly and fully, some will have symptoms that last for days, or even weeks. A more serious concussion can last for months or longer.

TO LEARN MORE ... WWW.CDC.GOV/CONCUSSION

Appendix F: Concussion Evaluation Forms

F1 – Initial Evaluation

TBI NATIONAL DATABASE COLLECTION FORM

Patient Name: _____ Date of Rating: _____

Name of Person Completing Form: _____

DISABILITY RATING SCALE:

Disability Rating Scale ratings to be completed within 72 hours after Rehab. Admission. And within 72 hours before Rehab. Discharge.

A. EYE OPENING:

- (0) Spontaneous
- (1) To Speech
- (2) To Pain
- (3) None

0-SPONTANEOUS: eyes open with sleep/wake rhythms indicating active arousal mechanisms, does not assume awareness.

1-TO SPEECH AND/OR SENSORY STIMULATION: a response to any verbal approach, whether spoken or shouted, not necessarily the command to open the eyes. Also, response to touch, mild pressure.

2-TO PAIN: tested by a painful stimulus.

3-NONE: no eye opening even to painful stimulation.

B. COMMUNICATION ABILITY:

- (0) Oriented
- (1) Confused
- (2) Inappropriate
- (3) Incomprehensible
- (4) None

0-ORIENTED: implies awareness of self and the environment. Patient able to tell you a) who he is; b) where he is; c) why he is there; d) year; e) season; f) month; g) day; h) time of day.

1-CONFUSED: attention can be held and patient responds to questions but responses are delayed and/or indicate varying degrees of disorientation and confusion.

2-INAPPROPRIATE: intelligible articulation but speech is used only in an exclamatory or random way (such as shouting and swearing); no sustained communication exchange is possible.

3-INCOMPREHENSIBLE: moaning, groaning or sounds without recognizable words, no consistent communication signs.

4-NONE: no sounds or communications signs from patient.

C. MOTOR RESPONSE:

- (0) Obeying
- (1) Localizing
- (2) Withdrawing
- (3) Flexing
- (4) Extending
- (5) None

0-OBEYING: obeying command to move finger on best side. If no response or not suitable try another command such as "move lips," "blink eyes," etc. Do not include grasp or other reflex responses.

1-LOCALIZING: a painful stimulus at more than one site causes limb to move (even slightly) in an attempt to remove it. It is a deliberate motor act to move away from or remove the source of noxious stimulation. If there is doubt as to whether withdrawal or localization has occurred after 3 or 4 painful stimulations, rate as localization.

2-WITHDRAWING: any generalized movement away from a noxious stimulus that is more than a simple reflex response

3-FLEXING: painful stimulation results in either flexion at the elbow, rapid withdrawal with abduction of the shoulder or a slow withdrawal with adduction of the shoulder. If there is confusion between flexing and withdrawing, then use pinprick on hands.

4-EXTENDING: painful stimulation results in extension of the limb.

5-NONE: no response can be elicited. Usually associated with hypotonia. Exclude spinal transection as an explanation of lack of response; be satisfied that an adequate stimulus has been applied.

D. FEEDING (COGNITIVE ABILITY ONLY)

- (0.0) Complete
- (1.0) Partial
- (2.0) Minimal
- (3.0) None

Does the patient show awareness of how and when to perform this activity? Ignore motor disabilities that interfere with carrying out this function. (This is rated under Level of Functioning described below.)

0-COMplete: continuously shows awareness that he knows how to feed and can convey unambiguous information that he knows when this activity should occur.

1-PARTIAL: intermittently shows awareness that he knows how to feed and/or can intermittently convey reasonably clearly information that he knows when the activity should occur.

2-MINIMAL: shows questionable or infrequent awareness that he knows in a primitive way how to feed and/or shows infrequently by certain signs, sounds, or activities that he is vaguely aware when the activity should occur.

3-NONE: shows virtually no awareness at any time that he knows how to feed and cannot convey information by signs, sounds, or activity that he knows when the activity should occur.

E. TOILETING (COGNITIVE ABILITY ONLY)

- (0.0) Complete
- (1.0) Partial
- (2.0) Minimal
- (3.0) None

Does the patient show awareness of how and when to perform this activity? Ignore motor disabilities that interfere with carrying out this function. (This is rated under Level of Functioning described below.) Rate best response for toileting based on bowel and bladder behavior

0-COMplete: continuously shows awareness that he knows how to toilet and can convey unambiguous information that he knows when the activity should occur.

1-PARTIAL: intermittently shows awareness that he knows how to toilet and/or can intermittently convey reasonably clearly information that he knows when the activity should occur.

2-MINIMAL: shows questionable or infrequent awareness that he knows in a primitive way how to toilet and/or shows infrequently by certain signs, sounds, or activities that he is vaguely aware when the activity should occur.

3-NONE: shows virtually no awareness at any time that he knows how to toilet and cannot convey information by signs, sounds, or activity that he knows when the activity should occur.

F.GROOMING (COGNITIVE ABILITY ONLY)

- (0.0) Complete
- (1.0) Partial
- (2.0) Minimal
- (3.0) None

Does the patient show awareness of how and when to perform this activity? Ignore motor disabilities that interfere with carrying out this function. (This is rated under Level of Functioning described below.) Grooming refers to bathing, washing, brushing of teeth, shaving, combing or brushing of hair and dressing.

0-COMPLETE: continuously shows awareness that he knows how to groom self and can convey unambiguous information that he knows when this activity should occur.

1-PARTIAL: intermittently shows awareness that he knows how to groom self and/or can intermittently convey reasonably clearly information that he knows when the activity should occur.

2-MINIMAL: shows questionable or infrequent awareness that he knows in a primitive way how to groom self and/or shows infrequently by certain signs, sounds, or activities that he is vaguely aware when the activity should occur.

3-NONE: shows virtually no awareness at any time that he knows how to groom self and cannot convey information by signs, sounds, or activity that he knows when the activity should occur.

G.LEVEL OF FUNCTIONING (PHYSICAL, MENTAL, EMOTIONAL OR SOCIAL FUNCTION))

- (0.0) Completely Independent
- (1.0) Independent in special environment
- (2.0) Mildly Dependent-Limited assistance (non-resid - helper)
- (3.0) Moderately Dependent-moderate assist (person in home)
- (4.0) markedly Dependent-assist all major activities, all times
- (5.0) Totally Dependent-24 hour nursing care.

0-COMpletely INDEPENDENT: able to live as he wishes, requiring no restriction due to physical, mental, emotional or social problems.

1-INDEPENDENT IN SPECIAL ENVIRONMENT: capable of functioning independently when needed requirements are met (mechanical aids)

2-MILDLY DEPENDENT: able to care for most of own needs but requires limited assistance due to physical, cognitive and/or emotional problems (e.g., needs non-resident helper).

3-MODERATELY DEPENDENT: able to care for self partially but needs another person at all times. (person in home)

4-MARKEDLY DEPENDENT: needs help with all major activities and the assistance of another person at all times.

5-TOTALLY DEPENDENT: not able to assist in own care and requires 24-hour nursing care.

H."EMPLOYABILITY"(AS A FULL TIME WORKER, HOMEMAKER, OR STUDENT)

- (0.0) Not Restricted
- (1.0) Selected jobs, competitive
- (2.0) Sheltered workshop, Non-competitive
- (3.0) Not Employable

0-NOT RESTRICTED: can compete in the open market for a relatively wide range of jobs commensurate with existing skills; or can initiate, plan execute and assume responsibilities associated with homemaking; or can understand and carry out most age relevant school assignments.

1-SELECTED JOBS, COMPETITIVE: can compete in a limited job market for a relatively narrow range of jobs because of limitations of the type described above and/or because of some physical limitations; or can initiate, plan, execute and assume many but not all responsibilities associated with homemaking; or can understand and carry out many but not all school assignments.

2-SHELTERED WORKSHOP, NON-COMPETITIVE: cannot compete successfully in a job market because of limitations described above and/or because of moderate or severe physical limitations; or cannot without major assistance initiate, plan, execute and assume responsibilities for homemaking; or cannot understand and carry out even relatively simple school assignments without assistance.

3-NOT EMPLOYABLE: completely unemployable because of extreme psychosocial limitations of the type described above, or completely unable to initiate, plan, execute and assume any responsibilities associated with homemaking; or cannot understand or carry out any school assignments.

The psychosocial adaptability or "employability" item takes into account overall cognitive and physical ability to be an employee, homemaker or student.

This determination should take into account considerations such as the following:

1. Able to understand, remember and follow instructions.
2. Can plan and carry out tasks at least at the level of an office clerk or in simple routine, repetitive industrial situation or can do school assignments.
3. Ability to remain oriented, relevant and appropriate in work and other psychosocial situations.
4. Ability to get to and from work or shopping centers using private or public transportation effectively.
5. Ability to deal with number concepts.
6. Ability to make purchases and handle simple money exchange problems
7. Ability to keep track of time and appointments

Revised 03/2010

Concussion Daily Symptom Tracking Form

Name: _____

DOB: _____

Concussion Date: _____

Sport: _____

MOI: _____

Date:	0	1	2	3	4	5	6
Blurred Vision	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Easily Distracted	0	1	2	3	4	5	6
Fatigue	0	1	2	3	4	5	6
Feel "in a fog"	0	1	2	3	4	5	6
Feel "slowed down"	0	1	2	3	4	5	6
Headache	0	1	2	3	4	5	6
Inappropriate Emotions	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Loss of Consciousness	0	1	2	3	4	5	6
Loss of Orientation	0	1	2	3	4	5	6
Memory Problems	0	1	2	3	4	5	6
Nausea	0	1	2	3	4	5	6
Nervousness	0	1	2	3	4	5	6
Personality Change	0	1	2	3	4	5	6
Poor Balance/Coordination	0	1	2	3	4	5	6
Poor Concentration	0	1	2	3	4	5	6
Pressure in Head	0	1	2	3	4	5	6
Ringing in the Ears	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Seeing Stars	0	1	2	3	4	5	6
Sensitivity to Light	0	1	2	3	4	5	6
Sensitivity to Noise	0	1	2	3	4	5	6
Vacant Stare/Glassy Eyed	0	1	2	3	4	5	6
Vomiting	0	1	2	3	4	5	6

Date:	0	1	2	3	4	5	6
Blurred Vision	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Easily Distracted	0	1	2	3	4	5	6
Fatigue	0	1	2	3	4	5	6
Feel "in a fog"	0	1	2	3	4	5	6
Feel "slowed down"	0	1	2	3	4	5	6
Headache	0	1	2	3	4	5	6
Inappropriate Emotions	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Loss of Consciousness	0	1	2	3	4	5	6
Loss of Orientation	0	1	2	3	4	5	6
Memory Problems	0	1	2	3	4	5	6
Nausea	0	1	2	3	4	5	6
Nervousness	0	1	2	3	4	5	6
Personality Change	0	1	2	3	4	5	6
Poor Balance/Coordination	0	1	2	3	4	5	6
Poor Concentration	0	1	2	3	4	5	6
Pressure in Head	0	1	2	3	4	5	6
Ringing in the Ears	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Seeing Stars	0	1	2	3	4	5	6
Sensitivity to Light	0	1	2	3	4	5	6
Sensitivity to Noise	0	1	2	3	4	5	6
Vacant Stare/Glassy Eyed	0	1	2	3	4	5	6
Vomiting	0	1	2	3	4	5	6

AT Signature: _____

updated: 1/24/2018

Appendix G: Medical Letter of Recommended Accommodations

HOSPITAL LOGO

Doctors' Names

Medical Clinic Address
Phone Number
Fax Number

Patient Name & DOB: _____

Date: _____

Date of concussion: _____

Revision of recommendations to occur: _____

ACADEMIC ACCOMMODATIONS

This student was diagnosed with a concussion and the following academic accommodations may help in reducing the cognitive (thinking) load, thereby minimizing post-concussion symptoms and allowing the student to better participate in the academic process during the injury period. **These academic accommodations are recommended as part of medical care and treatment for this medical condition.** The student and parent are encouraged to discuss and establish accommodations with the school on a class-by-class basis. The school and parent may wish to formalize accommodations through a 504 Plan if symptoms persist following treatment and less formalized accommodations such as these.

Current Symptoms: *Symptoms can wax and wane throughout the day and include, and are not limited to:*

- | | | |
|------------------------------------|---|--|
| <input type="checkbox"/> Headaches | <input type="checkbox"/> Sleep Difficulties | <input type="checkbox"/> Cognitive Difficulties |
| <input type="checkbox"/> Nausea | <input type="checkbox"/> Sensitivity to Light | <input type="checkbox"/> Visual Dysfunction |
| <input type="checkbox"/> Dizziness | <input type="checkbox"/> Sensitivity to Noise | <input type="checkbox"/> Environmental Sensitivity |
| <input type="checkbox"/> Fatigue | <input type="checkbox"/> Foggy | <input type="checkbox"/> Emotional difficulties |

Prognosis: Based on today's evaluation, this student is at risk for a prolonged recovery

Status: Based on today's evaluation the student is Progressing Stable Regressing

Attendance Restrictions: Full/partial days missed due to concussion symptoms should be medically excused.

- Full days Modified days
 No school until _____, then modified days as tolerated until _____, then full days as tolerated.

Testing: Students with concussion have increased memory and attention problems. Highly demanding activities like testing can significantly raise symptoms (e.g., headache, fatigue) which in turn can make testing more difficult, recommendations include:

- | | | |
|---|---|--|
| <input type="checkbox"/> extra time | <input type="checkbox"/> test in a quiet environment | <input type="checkbox"/> no standardized tests |
| <input type="checkbox"/> reduce length | <input type="checkbox"/> allow testing across multiple sessions | <input type="checkbox"/> no tests or quizzes |
| <input type="checkbox"/> open note / open book / take home tests | <input type="checkbox"/> no more than one test per day | |
| <input type="checkbox"/> reformat from free response to multiple choice or provide cueing (e.g., a notecard for helpful formulas) | | |
| <input type="checkbox"/> allow the student to make up any testing that they performed poorly on since the date of concussion | | |

Workload reduction: It takes a concussed student typically twice as long to complete assignments. Therefore, it is recommended that "thinking" load be reduced, just as physical exertion is reduced.

- | | |
|--|--|
| <input type="checkbox"/> Reduce overall amount of make-up work, class work, and homework (recommended: 50-75%) | <input type="checkbox"/> limit computer work |
| <input type="checkbox"/> Shorten tests and projects | <input type="checkbox"/> audio books |
| <input type="checkbox"/> allow the student to make up assignments that they performed poorly on since the date of concussion | |

Note taking: Note taking may be difficult due to impaired multitasking abilities and increased symptoms. Please allow student to obtain class notes or outlines ahead of time

Breaks: He/she may need to go to the nurse's office to rest prior to returning to class.

Extra Time: Students are advised to rest, and may need to turn assignments in late on occasion.

Other Accommodations

- | | |
|---|---|
| <input type="checkbox"/> Allow student to wear hat and/or sunglasses (sensitivity to light) | <input type="checkbox"/> No Sports Participation |
| <input type="checkbox"/> Report changes in mood/personality | <input type="checkbox"/> Ok for weight lifting (no free weights above the head) |
| <input type="checkbox"/> Change setting (brightness/ contrast) on computer screen | <input type="checkbox"/> No Physical Education Class |
| <input type="checkbox"/> Avoid busy environments (i.e. – leave class early to avoid hallways, cafeteria, and assemblies) | |
| <input type="checkbox"/> Ok for light, low-impact, non-contact exercise as long as this doesn't significantly increase symptoms | |
| <input type="checkbox"/> Allow student to step out of music class if needed | |
| <input type="checkbox"/> _____ | |

Signature _____



www.impacttest.com
877-646-7991

HOSPITAL LOGO

Medical Clinic Address
Phone Number
Fax Number

The goal of academic accommodations is to allow the student to continue learning without hindering their recovery from a head injury. School based tasks can provoke symptoms, and protract recovery. Providing the proper accommodations can facilitate recovery, and reduce the negative impact on academic functioning. School tasks should not or only minimally increase symptoms. The following are examples of general recommendations. Recommendations should be individualized for the student.

Attendance: Students should be excused for inability to attend school due to symptoms of concussion. **Homebound education:** 1 hour of personalized instruction 5 days a week, have student “skype” during classes, do not just send work home expecting student to complete.

Half days: Alternate between AM and PM, condense day based on core classes, allow to be in school full days but alternate classes from core class to rest period.

Full days: Students performance may wax and wane throughout the day, as well as depending on class subject.

Sensitivity to Light/Noise: Limit loud/noisy environments: eat lunch in a quiet room, no band/music classes, allow for sunglasses, permit student to leave class early to avoid hallways, limit riding on bus.

Visual Based Problems: reduce visual based learning, and promote auditory based learning by reduced reading, no note taking, limit computer based activities, books/resources on digital media, lectures recorded and listened too, audit classes, have peer read information to student.

Dizziness: limit exposure to busy places, limit riding the bus, no note taking, leave class early to avoid hallways, use of school elevator.

Cognitive Difficulties: *Short Term Memory, Multitasking, Processing Speed, Attention/Concentration* - Reduced class work, curriculum adapted to essential learning and skills, notes given prior to class to be reviewed, reduction of multi-tasking activities, and/or Pass/Fail.

Modifications for tests: Chunking, one page at a time, over several days (extended time), reduce length, quiet environment, no bubble sheets, given orally, and oral responses.

Social: *It is important to allow for students to remain connected with the peers* - Allow student to visit peers for limited duration, “Skype”, limited participation in extracurricular activities.

Fatigue: Allow for breaks throughout the day, rest at nurse’s station, put head down in class.

Physical: No physical activity, adaptive gym class.

Potential for Prolonged recovery: Some students meet criteria that place them at high risk for a prolonged recovery (greater than 3 weeks). Examples include: neurocognitive data below set criterion cutoffs, vestibular dysfunction, convergence insufficiency, and post traumatic migraines.



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Appendix H: Draft Copy of TBI Return-to-Learn Guidelines

ACADEMIC RECOMMENDATIONS

With the increased recognition and treatment advancements for concussions in students, it is very essential for a school to have a protocol in place to assist students to returning to learn as well as to play. This injury is unlike many because most of the signs and symptoms do not appear physically. This can make it difficult for educators and school administrators to recognize that a student might need learning accommodations during the recovery process. By having a return to learn protocol in place can reduce the concussion recovery period and help the student from getting behind academically.

What is a concussion?

A concussion is a traumatic brain injury occurring from a hit, bump or jolt to the head or body that results in rapid brain movement. This movement causes the brain to impact the skull, damaging brain cells and resulting in a chemical change in the brain creating concussion symptoms. A direct blow to the head and/or body does not always result in a concussion; also a concussion does not mean an individual must lose consciousness.

One way to identify and track the effects of a concussion is by recording the symptoms a student is having outside of their norm. A concussion can affect students in many different ways; one person might have symptoms for months while another person might only have symptoms for a couple weeks or less. Most of the time you cannot judge the severity of the concussion based on the hit and you cannot assume the amount of time a student will be affected by symptoms. Concussions are very individualized and can affect students physically, cognitively, emotionally and with sleep.

Concussion Symptoms

Physical	Cognitive	Emotional	Sleep
Headache	Feeling mentally foggy	Irritability	Trouble falling asleep
Dizziness	Feeling slowed down	Sadness	Sleeping more than usual
Balance difficulties	Difficulty concentrating	Nervousness	Sleeping less than usual
Nausea/vomiting	Difficulty remembering	More emotional than usual	Drowsy
Fatigue	Difficulty focusing	Anxiety	Altered sleep schedule
Sensitivity to light	Confusion		
Sensitivity to noise			
Visual changes			
Pressure in head			
Ringling in ears			

Cognitive and physical rest is a necessity for students to recovery from a concussion. Evidence has shown that over stimulating a concussed brain can lead to a prolonged recovery time and increased

ACADEMIC RECOMMENDATIONS

symptoms. The goal in the concussion recovery process is to avoid overexertion of the brain cognitively which can triggered by different stimuli in different students. This is why an individualized plan is so important for a timely recovery.

Concussion Management Team:

Determining the amount of cognitive exertion versus physical rest a student needs can be very difficult. Finding this appropriate balance and rate of progression is extremely important in recovery which is why having a team of individuals to help manage the treatment of a student's concussion is necessary. Having a multidisciplinary team is very important with keeping the treatment of the student's recovery process consistent and up to date. The team should include members from the student's family, medical team, academic team and physical activity team.

It is extremely important and beneficial to identify a school member who will act as the concussion management leader. This person will act as the case manager for concussions and should be consistent with all concussions to reduce confusion and provide consistency to the protocol.

Team Members and Roles

Team	Roles & Responsibilities
Concussion Management Leader: <i>School counselor, school nurse or other identified school professional. (Must only be one person)</i>	<ul style="list-style-type: none"> • Advocating for the student's needs • Primary point of contact for the student, student's family and all members of the concussion team. • Providing clarity to all members of the concussion team on what the student's accommodations will entail and what "phase" the student is on.
Family Team: <i>Student, parents, grandparents, guardians, peers, teammates, family and friends</i>	<ul style="list-style-type: none"> • Remove student from play or activity immediately after a hit if symptoms are present. • Communicate with academic, medical and physical activity teams • Reduce screen time (texting, social media, video games and TV) • Reduce social stimuli (loud environments, sporting events, parties, concerts, dances...etc.) • Reduce or restrict driving or operating machinery • Encourage rest • Monitor sleep and symptom changes
Medical Team: <i>Primary care provider, concussion specialist, clinical psychologist, neuropsychologist, athletic trainer, school nurse and school physician.</i>	<ul style="list-style-type: none"> • Remove student from play or activity immediately after a hit if symptoms are present. • Rule out more severe medical issues • Evaluate for concussion symptoms • Support reduction of school demands and home/social stimuli • Encourage rest • Approve graduated return to learn and return to play when student is ready to do so based on a medical evaluation. • Documentation of injury and progression. • Communicating to other team members of the concussion team when applicable.

ACADEMIC RECOMMENDATIONS

<p>School Academic Team: <i>Teacher(s), school counselor, school psychologist, social worker, school nurse, school administrator(s) and 504 coordinator.</i></p>	<ul style="list-style-type: none"> • Remove student from play or activity immediately after a hit if symptoms are present. • Support reduction of school demands and home/social stimuli • Adjust academic demands • Encourage cognitive rest (breaks at school) • Monitor and document academic and emotional symptoms of the concussion • Provide information on the type of student they were prior to the injury • Educators can suggest an increase or decrease in cognitive demands depending on how the student is doing academically and symptomatically.
<p>Physical Activity Team: <i>School nurse, athletic trainer, coach, physical education teacher, playground/recess supervisor and athletic director.</i></p>	<ul style="list-style-type: none"> • Remove student from play or activity immediately after a hit if symptoms are present. • Support reduction of school demands and home/social stimuli • Encourage rest • Monitor and track physical symptoms • Monitor the graduated return to activity/play after given medical clearance to do so.

Return to Learn Step-wise Program:

Requirements for the return to learn step-wise program are:

1. The student must be evaluated by a licensed healthcare professional and documentation must be provided to the school before starting program.
2. The student must report to the concussion management leader daily to monitor symptoms and to assess the academic modifications needed.
3. The student must be re-evaluated by a licensed healthcare professional if additional accommodations are needed that are not in the protocol.
4. The student must be re-evaluated by a licensed healthcare professional before returning to a full academic load and returning to physical activity.

School Accommodation Examples Based on Symptoms:

Physical Symptom	Accommodations
Headache	<ul style="list-style-type: none"> • Allow to lay head down at desk • Allow frequent breaks (going to a quiet room)
Sensitivity to noise	<ul style="list-style-type: none"> • No PE, band, chorus or shop class • Eat lunch in a quiet room • Avoid athletic events • Avoid attending large gatherings in gymnasium • Leave classes early to avoid loud hallways • Limit cell phone and headphone (ear buds) use
Sensitivity to light	<ul style="list-style-type: none"> • Limit computer use • Allow to wear sunglasses inside and outside • Move to area with low lighting • Avoid seating with direct sunlight from windows

ACADEMIC RECOMMENDATIONS

	<ul style="list-style-type: none"> Minimize computer screen time and projector use
Visual problems	<ul style="list-style-type: none"> Limit computer use Reduce or shorten reading assignments Record lectures or use auditory learning apps Desktop work only, avoid computer use Refrain from texting, video games and TV Shared note taking
Concentration & memory problems	<ul style="list-style-type: none"> Place main focus on core classes and academic concepts Postpone test taking Allow extra time for assignments and quizzes Allow extra time for tests and projects Reduce class assignments and homework
Sleep difficulties	<ul style="list-style-type: none"> Allow late start to school Allow frequent rest breaks

Phase 1: No School/Complete Cognitive Rest:

- This phase should be the initial 24-48 hours after injury.

Treatment	Requirement for next phase
<p>Okay to:</p> <ul style="list-style-type: none"> Play basic board games <p>Limit/avoid:</p> <ul style="list-style-type: none"> Computer use, TV, texting, video games and reading <p>No:</p> <ul style="list-style-type: none"> School work Participation in sports or intense physical activity. Driving until cleared to do so by a healthcare provider. Participation in activities that increase heart rate or break a sweat. <p>*Gradually increase school work as symptoms decrease</p>	<p>Student can start phase 2 when symptoms start to improve or after resting for 48 hours.</p>

Phase 2: Limited School Attendance:

Treatment	Requirement for next phase
<p>Okay to:</p> <ul style="list-style-type: none"> Attend school part-time or half-days Start catching up on school work Focus on core and essential subjects and overdue work. 	<p>Student can start phase 3 when they can tolerate part-time or half days with no increase in symptoms.</p>

ACADEMIC RECOMMENDATIONS

<ul style="list-style-type: none"> • Take mandatory breaks throughout school <p>Limit/avoid:</p> <ul style="list-style-type: none"> • Learning new material • Avoid settings that worsen or trigger symptoms <p>No:</p> <ul style="list-style-type: none"> • P.E. Class • Lunch in noisy lunch room • Recess • Testing • Sports • Assemblies • Field trips • Band or chorus 	
--	--

Phase 3: Full Day Attendance with Limited Class Attendance:

Treatment	Requirement for next phase
<p>Okay to:</p> <ul style="list-style-type: none"> • Attend full days at school but only part-time class work • Taking breaks when needed instead of mandatory breaks. • Start taking quizzes and shorter tests but allow extra time. <p>Limit/avoid:</p> <ul style="list-style-type: none"> • Avoid settings that worsen or trigger symptoms. <p>No:</p> <ul style="list-style-type: none"> • P.E. Class • Lunch in noisy lunch room • Recess • Major standardized testing • Band or chorus • Sports 	<p>Student can start phase 4 when they can tolerate full day attendance with limited class attendance with no increase of symptoms.</p>

Phase 4: Full Day Attendance with Minimal accommodations:

Treatment	Requirement for next phase
<p>Okay to:</p> <ul style="list-style-type: none"> • Attend full days at school and complete all class work 	<ul style="list-style-type: none"> • Student can start phase 4 when they can tolerate full day attendance with

ACADEMIC RECOMMENDATIONS

<ul style="list-style-type: none"> • Take breaks if something is triggering or increasing symptoms. • Take quizzes and tests but allow extra time • Attend band or chorus, but taking breaks when needed. <p>No:</p> <ul style="list-style-type: none"> • P.E. class • Major standardized testing • Recess • Sports 	<p>minimal accommodations with no increase in symptoms.</p> <ul style="list-style-type: none"> • Student must be re-evaluated by a medical provider.
---	---

Phase 5: Full Day Attendance with no accommodations:

Treatment	Requirement for next phase
<p>Okay to:</p> <ul style="list-style-type: none"> • Attend full days at school • Do all school work and testing without accommodations. <p>No:</p> <ul style="list-style-type: none"> • P.E. class • Sports 	<p>Student can start phase 6 once they have been cleared by a medical provider and have the appropriate medical documentation.</p>

Phase 6: Return to Activity:

Treatment	Requirement for next phase
<p>Okay to start return to play process with a licensed medical professional</p>	

Follow-up Interview:

Students who have gone through the return-to-learn process are encouraged to meet with the concussion management leader 1-2 weeks after they have returned to their normal academic load. This is to ensure the student is back on track with all of their assignments and to go over how the return to learn process went.

ACADEMIC RECOMMENDATIONS

Patient Name: _____ Date of Evaluation: _____

Current Symptoms

- Headache
- Dizziness
- Visual Problems
- Nausea
- Fatigue
- Difficulty concentrating
- Difficulty remembering
- Feeling slowed down
- Feeling mental foggy
- Balance Problems
- Sensitivity to light
- Sensitivity to noise
- Feeling more emotional
- Irritability
- Trouble falling asleep
- Drowsiness
- Sleeping less than normal
- Sleeping more than usual

Medical Supervision

- Athletic Trainer
- Physician
- Physical Therapist, Occupational Therapist, Speech Language Pathologist
- School Nurse

This patient has been diagnosed with a concussion and is currently under our care. It is suggested that the following recommendations be implemented to avoid increasing concussion symptoms and delaying recovery.

Recommendations should begin on: _____ Re-evaluation date: _____

Attendance

Dr. Recommended

- _____

Breaks

- Allow student to go to office if symptoms increase
- Allow Student to go home if symptoms continue to increase

Visual Stimulus

- No smart boards, projectors, computers, TV Screens, Phones
- Limit Electronics use (computers, TV's, Phones, etc.)
- Pre-printed notes for class material or note sharing

Audible Stimulus

- Allow student to wear ear plugs
- Excuse Student from Band/Choir
- Lunch in a quiet place

Workload/Multi-tasking

- Reduce overall amount of homework
- Limit homework on Electronics

Testing

- Extra time
- Paper Exams
- No exams on computer

Physical Exertion

- No physical exertion/gym class

Additional Recommendations: _____

Athletic Trainer Signature: _____

Provider's Signature: _____