



Introduction

For The Connection Lab at McGill University, a major goal is to develop partnerships with schools, families, and other organizations for the benefit of students. The purpose of this document is to outline our goals and be the starting point from which to enter into negotiations of partnership.

The current emphasis of The Connections Lab is on directly teaching the non-cognitive skills required for students to be successful in school. The emphasis is on using the development of non-academic to promote academic success. We have a philosophy that the best way to learn and research effective methods of intervening with students is to work in closely with teachers, administrators, social workers, parents, and other educators to create a community of stakeholders to improve schooling for students, especially students at the highest risk for academic problems.

Who are we?

The Connections Lab (short for the *Resilience, Pediatric Psychology and Neurogenetic Connections Laboratory*) refers to a collection of graduate students, undergraduate students, international partners, school boards, and other stakeholders conducting projects related to school and developmental psychology under the supervision of Dr. Steven Shaw at McGill University. The overall goal is to improve school functioning and increase resilience for the students at highest risk for school failure. Among the populations considered are students with rare genetic disorders, intellectual disabilities, medical issues, low socioeconomic status, behaviour issues, and other concerns. What makes the Connections Lab exciting is that we conduct high quality research, but always use our projects to help students and their families overcome risk factors to experience school and life success.

Information about the Connections Lab and its members can be found at:

<https://www.mcgill.ca/connectionslab/>

Dr. Shaw also has a personal Twitter feed at: @Shawpsych

e-mail: steven.shaw@mcgill.ca

We are developing a Facebook page and the website is consistently being updated.

A biographical sketch of the principal investigator: Steven R. Shaw is associate professor in the Department of Educational and Counselling Psychology at McGill University in Montreal. He earned a Ph.D. in School Psychology from the University of Florida in 1991. At McGill University he is director of the Resilience, Pediatric Psychology and Neurogenetic Connections Lab and co-director of the McGill

Developmental Research Lab. He is also the Graduate Program Director of the School/Applied Child Psychology program. Before entering academia, he had 17 years of experience as a school psychologist in school, university, hospital, medical school, and independent practice. From 1997 to 2004, he served as lead psychologist and associate professor of pediatrics at The Children's Hospital in Greenville, South Carolina and Medical University of South Carolina. Dr. Shaw is a Nationally Certified School Psychologist. In 2000, the South Carolina Association of School Psychologists recognized him for "Outstanding Contributions to Education" for his work on addressing overrepresentation of minority groups in special education, and development of teaching techniques for children with borderline intelligence. In 2010, he received the Distinguished Teaching Award from the Faculty of Education at McGill University. In 2012, he received the President's Award from the National Association of School Psychologists for his innovative research-to-practice efforts. His clinical and research interests include pediatric school psychology, improving education of children with rare genetic disorders and autism, and development of resilience skills in children at risk for academic failure. He has over 190 scholarly publications and presentations and has published four books. He is on the editorial board of six international scholarly journals and is editor of School Psychology Forum.

Two Areas

The foci of the partnership are two major areas: 1) validation and improvement of the meta-academic model, and 2) improving methods of implementing evidence-based interventions.

Meta-academic model. The meta-academic model refers to the skills necessary to be successful in school that are not reading, writing, mathematics, or other substantively cognitive skills. This concept arises from the Dr. Shaw's work with children with borderline intellectual functioning. His research found that it was possible to improve academic skills to grade level or close to it. However, these students continued to fail in school. This is because they did not have the skills to earn good grades (despite understanding the content) and profit from academic instruction. Dr. Shaw, in close collaboration with Dr. Anna Jankowska of the University of Gdansk (Poland), developed an organized and systemic model to describe the skills required to be successful, but are rarely taught. As Dr. Jankowska notes, "Not all students enter school equally reading to learn. Many lack social skills, school adaptation, or executive functioning skills to be successful in school. Because these skills are assumed and not taught, then often students develop maladaptive survival skills such as making excuses, cheating, becoming dependent, being inattentive, and other 'skills' that lead to problems. What if we taught, rather than assumed, basic adaptive skills?"

As such, we devised a three factor model that describes problem areas for at risk students. The meta-academic model is made up of three factors:

1. Executive function skills. These are core skills required for goal attainment in school and other arenas. We are focused on: emotional regulation, impulse control, initiation, interference control, and mental flexibility.
2. Social skills. The basics of interacting with others are core features of school success, but are often lacking in children at risk for school difficulties. We are focused on: communication with teachers, cooperative group projects with peers, conflict resolution, friend making, and working with culturally diverse peers.
3. School adaptation. This refers to school wiseness or knowing the unwritten rules of school success. We are focused on test wiseness, independent learning, academic motivation, study skills, and persistence and grit.

The model has two additional components that are not currently being researched by our group: coping with mental health problems and coping with medical problems. The research is quite clear that high risk students have must higher incidence of mental health and medical problems. Without intervention these issues are likely to interfere with school success.

Meta-academic skill interventions. The Connections Lab has developed a curriculum and lesson plan for each of the areas of focus. These lesson plans consist of 10 to 12 thirty to forty-five minute lessons for schools. For example, we have developed and validated a 12-lesson program to improve emotional regulation skills. As seen from the above model description, there are at least 15 possible lesson plans (5 curricula for each of the 3 factors). We have lessons for primary to secondary school students.

Each intervention is based on teaching approaches learned from research by the Dr. Shaw on at risk students. All lessons share the following components: focus on self-assessment and self-awareness of strengths and weaknesses, student-led lessons, role playing, development of reminder cues, and a generalization plan. The logic is that students learn skills best when they lead and generate examples that are meaningful to them.

Currently, The Connections Lab has developed and validated lessons in: impulse control, emotional regulation, independent learning and impulse control. Over the summer of 2014 we are developing lessons in test wiseness/grade management, teacher relationships, peer cooperation, conflict resolution, and interference control. These lesson plans will need to be validated over the fall.

Implementation Science. The second part of this project is how the program is implemented. There are many excellent lessons and programs with research support that are nearly impossible to implement in classrooms. We not only want to know what works; but we want to know why it works, when it works, where it works, and for whom it works. We want to know the best and more efficient way to implement our program into classroom that minimizes teacher time and stress, is acceptable to the school community and culture, and makes use of teacher knowledge and expertise. The purpose is to improve the efficiency and effectiveness of classroom teaching, not to give teachers one more thing to do.

Currently, The Connections Lab is evaluating two models of implementation. One model is the traditionally accepted and best practices implementation model that involves treatment integrity. In this model, all lessons are administered and taught exactly as described. There is much evidence that when lessons are administered in the same way as validated, then the probability of effective outcomes is much higher than when procedures are not followed. This is known as treatment integrity. The Connections Lab has developed an alternative model that is designed to be more flexible, meet the needs of diverse students, and allow teachers to use professional judgment to alter the lessons to meet specific needs. This is known as the Open Source Analogy Model. The full model has a variety of components and is a truly unique contribution to education. This approach has a firm kernel of the curriculum and then teachers have full reign to modify all other aspects of the program to account for resources, classroom needs, teacher comfort level, systemic needs, and needs of the students. Teachers know these issues better than any large-scale curriculum developer. Our preliminary evidence shows that the Open Source Analogy Model may be superior to the Treatment Integrity approach. For partners, this allows for a variety of specific implementation strategies that can be adjusted to meet the needs of schools and classrooms.

Partnership

The Connections Lab wants partners. We count on the collective wisdom and experience of educators to improve our program and develop a strong scientific foundation for educational interventions. Different

schools and organizations have a variety of needs. As such, potential partners have four types of partnerships with The Connections Lab.

- 1) Simple partners. Partners will receive all validated lesson plans without fee or any other involvement. Partners can use the lesson plans as they wish with only two exceptions: they cannot use the lessons to make money for any individual or group and they cannot publish or disseminate the lessons without permission of the authors (The Connections Lab). This type of partnership is like a subscription in that as new lesson plans are validated, then they will be sent to the partners.
- 2) Collaborating partners. These partners will receive all lessons and have all of the conditions of the Simple Partners. However, any deviations or changes that the partners have developed in their implementation are to be described to The Connection Lab. In this fashion, we can learn what works and benefit from the experiences and skills of the teachers and others implementing the lessons.
- 3) Evaluation partners. These partners will receive all lessons and have all of the conditions of the Simple and Collaborating partners, but also have their interventions evaluated. Whereas there is much flexibility and negotiation in the implementation aspect of the projects, the core evaluation protocol is fairly rigid. However, components can be added based on the needs of each partner. The Connections Lab consults with each partner to meet their evaluation needs. Evaluation partners receive all validated lesson plans. This level of partnership may involve the creation of control and comparison groups, access to some school records, passing of the project through McGill and local school board ethics, and informed consent. The Connections Lab provides all evaluation materials and will assist in data collection. The Connections Lab provides a report to the school board demonstrating efficacy data; outcomes; teacher, student, and parent satisfaction data; and an overall summary of the project. Typically, when a parent does not provide informed consent, then the student can continue to receive the lesson because it is part of the school curriculum. However, no data can be collected on that student and McGill personnel cannot consult on any issues regarding this student. The primary focus of evaluation partners is to continuously improve the meta-academic model and make the implementation of the lessons more efficient and effective. Our goal is to have long-term partnerships and follow students over a period of years. Yet, there are no contracts and partners may withdraw from the partnership at any time for any reason.
- 4) Research partners. These partners will receive all lessons and have all of the conditions of the Simple Partners, Collaborating Partners, and Evaluation Partners. In addition, Research Partners will be given new lesson plans that have yet to be validated and are referred to as experimental. Research partners may also be involved in developing research, possible co-authorships, and sharing of data for multiple purposes (for example, if an educator is working on their own masters/doctorate degree and need data, then these projects can be shared for such purposes).

For all levels of partnership, The Connections Lab members are available for consultation and troubleshooting by telephone or e-mail. We have partners across North America and Europe, but are always excited to help our partners and answer questions. Note that we are proud of our partnerships and all of our partners will be acknowledged on The Connections Lab website. As researchers, all data and information may be disseminated in workshops, books, refereed scientific publications, and professional presentations. No identifying information about the partners or students will be disseminated.

Specific experiments and projects will be described to school personnel. Partnership does not imply blanket permission to use all data for any project. Each individual study will be described and approved by the school before beginning to collect data. Once collected and submitted to The Connections Lab, the

data become property of The Connections Lab and the PI. However, parents, teachers, and students of the age of consent may withdraw from the study at any time and all individual data will be removed from the data set. Schools will not be blind to conditions or have any deception involved in the development or execution of these projects.

There are no fees or expenses directly associated with partnership with The Connections Lab or the use of lessons. There is an option that is available for all partners or potential partners. A workshop, professional development presentation, observation, or in-person consultation is available from Dr. Shaw or members of The Connections Lab. The goals and functions of any in-person services will be negotiated. The general rule of thumb is that all in-person work in the metropolitan Montreal area is provided without fees or expenses. Those services are part of our community development initiatives. All in-person work outside of the Montreal area has a fee of \$450 per hour of service (minimum of 3 hours) plus air, lodging, ground transportation, and food expenses.

Ethics and Consent

Anytime that data will be collected on a specific project, there must be a formal ethics proposal submitted and approved by the McGill Research Ethics Board. Most school boards also have a research approval system and must be approved by the school board as well before the project can begin. Any student for which data will be collected must have a signed informed consent by their parent or legal guardian, or by themselves if of the age of legal consent.

Evaluation Protocol

The core evaluation protocol consists of three major types of data: outcome data, psychological data, and satisfaction and implementation data.

Outcome data. The goal of this project is to improve student outcome in school performance. We will be collecting data (where appropriate) on: student notes or report card grades, homework completion, attendance, disciplinary records, provincial or state test scores, dropout information, and graduation information.

Psychological data. These data consist of student, teacher, and parent report information related to specific executive functions, social skills, academic enabling, social emotional development, and resilience skills. We are still working on this specific protocol to reduce teacher and parent time commitment.

Satisfaction and implementation data. These are surveys that determine satisfaction of research participants including students, teachers, parents, and other educators. We also conduct semi-structured interviews with selected teachers to solicit their ideas and feelings about being involved in the project. These data are both quantitative and qualitative.

We always assist and collect specific data that a school board may be interested in that is outside of the scope of specific research projects.

Summary

The Connections Lab is looking forward to collaborating with school boards and other educators to develop the most effective possible interventions to improve the academic resilience of academically at-risk students.