Integrative and theoretical reviews of achievement motivation for school psychologists: Introduction to the special issue

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Abstract:

Although school psychologists have a wide range of expertise, generally speaking theories of motivation. The papers in this special issue were selected for their focus specifically on the integration of theories of achievement motivation to the practice of school psychology Among their various roles, school psychologists are tasked with evaluating students' cognitive abilities, academic achievement, and emotional/behavioural functioning and then attending to current dysfunction or implementing preventative measures (Canadian Psychological Association, 2016). They also serve as consultants to teachers, parents, administrative staff, and other inclusive learning professionals (Canadian Psychological Association, 2016). They bring expertise in assessment, intervention, and child development to bear on the complex learning needs of the students and their school systems. Despite this high level of expertise, a theoretically grounded understanding of achievement motivation appears to be largely overlooked in both initial education programmes and ongoing professional development (Cleary, 2009). This oversight is unfortunate because the field of achievement motivation has many well-developed theories supported by a robust body of empirical research that could be relevant to the practice of school psychology. In fact, when it comes to predicting students' performance, constructs related to achievement motivation are second only to intelligence (Kriegbaum et al., 2018). From this perspective, school psychologists may benefit from a clearer understanding of both the intra-individual components of achievement motivation and its contextual applications (Urdan & Schoenfelder, 2006). The five review articles in this special issue are designed to focus specifically on the integration of theories of achievement motivation to the practice of school psychology. Collectively, they meet the goal of providing school psychologists with an overview of five of the most common motivation frameworks tailored to school psychology in order to support student motivation at both the individual and contextual levels. The final commentary article explicates a whole-child framework to highlight the role motivation can hold alongside the recognizable school psychology constructs of cognition and affect.

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Among their various roles, school psychologists are tasked with evaluating students' cognitive abilities, academic achievement, and emotional/behavioural functioning and then attending to current dysfunction or implementing preventative measures (Canadian Psychological Association, 2016). They also serve as consultants to teachers, parents, administrative staff, and other inclusive learning professionals (Canadian Psychological Association, 2016). They bring expertise in assessment, intervention, and child development to bear on the complex learning needs of the students and their school systems. Despite this high level of expertise, a theoretically grounded understanding of achievement motivation appears to be largely overlooked in both initial education programmes and ongoing professional development (Cleary, 2009). This oversight is unfortunate because the field of achievement motivation has many well-developed theories supported by a robust body of empirical research that could be relevant to the practice of school psychology. In fact, when it comes to predicting students' performance, constructs related to achievement motivation are second only to intelligence (Kriegbaum et al., 2018). From this perspective, school psychologists may benefit from a clearer understanding of both the intra-individual components of achievement motivation and its contextual applications (Urdan & Schoenfelder, 2006). The five review articles in this special issue are designed to focus specifically on the integration of theories of achievement motivation to the practice of school psychology. Collectively, they meet the goal of providing school psychologists with an overview of five of the most common motivation frameworks tailored to school psychology in order to support student motivation at both the individual and contextual levels. The final commentary article explicates a whole-child framework to highlight

the role motivation can hold alongside the recognizable school psychology constructs of cognition and affect.

Student Motivation and The Shifting Role of School Psychologists

While teachers hold the lionshare of the responsibility in supporting students' learning, they regularly turn to school psychologists for additional support in identifying and evaluating students who may be in need of special education services. School psychologists have extensive training in assessment, which allows them to access, administer, score, and report on sophisticated and rigorous testing measures (Kranzler & Floyd, 2013). For example, school psychologists use intelligence tests to estimate reasoning and problem solving abilities as well as specific cognitive processes relevant to learning. They also implement measures to determine emotional and behavioural functioning. This information facilitates the identification of areas of relative strength and weakness in an attempt to explain students' academic performance. Additionally, the findings are used for individual student goal setting, including, establishing specific, realistic, and attainable goals that balance the student's inner resources and needs. The assessment process frequently results in a diagnosis and usually includes recommendations to support parents and teachers in the student's educational and behavioural planning (Dombrowski, 2015).

Although coding criteria, deadlines, and legal requirements keep this work central to school psychologists, contemporary perspectives in the field advocate for a shift from that of a deficit lens to one that is more preventative (Johnson & Zwiers, 2016). For example, school psychologists now assess school readiness and identify points of early intervention (Meyers et al., 2004). They also consult with schools and families to foster evidence-based education practices that position students for success. They participate in ongoing assessment for

intervention at the individual, group, and school-wide levels in order to evaluate students' growth and their progress in attaining positive academic and behavioural outcomes (Eagle et al., 2014). Although this shift in role is slow and not without challenges (Johnson & Zwiers, 2016), the currently expanding scope of practice makes the topic of achievement motivation particularly relevant to school psychologists.

Current Approaches to Motivation. School psychologists regularly employ strategies to motivate students. For example, behaviour modification programs are frequently recommended by school psychologists to promote student engagement and are widely implemented by both classroom teachers and parents (Pelham & Fabiano, 2000). Behaviour programs entail the application of reinforcement techniques (i.e., rewards, attention, punishment) contingent on student behaviour. For instance, in token economies a student is given a token when displaying desired behaviour and can subsequently trade tokens for some type of preferred reward. Teachers often apply a similar system contingent on class-wide behaviour. There is mixed evidence on the effectiveness of behaviour modification practices (Maggin et al., 2011) despite their commonality. Behaviour management approaches solely rely on sources of motivation that are external to the student in order to change behaviours.

As an alternative to reward-based motivation, another common approach to addressing motivation is readiness for change. Readiness for change in schools works as a transaction with both the student needing to be ready to engage productively and the school being ready to meet the student's individual developmental needs to support their positive outcomes (Hojnoski & Missall, 2006). Readiness for change approaches to motivation highlight the need for having the student and relevant others, such as parents and teachers, included in decisions around implementation in order to foster the student's competence and self-efficacy (Howley, 2012). In

line with a preventative approach, readiness for change in the school context is particularly useful for targeting school-wide implementation of mental health services and programs (Flaspohler et al., 2012).

Finally, motivational interviewing directs school psychologists in using conversation to help teachers and parents feel confident in supporting the student. Likewise, students are encouraged to engage in behaviours that are conducive to their own academic success (Strait et al., 2014). Motivational interviewing originated in counselling psychology and draws heavily on the psychologist's micro-counselling skills and ability to implement techniques including acceptance, compassion, and partnership (Miller & Rollnick, 2012). The overarching goal is for school psychologists to provide non-judgmental encouragement that allows the student to make decisions for self-improvement (Miller & Rollnick, 2012). Literature examining the efficacy of motivational interviewing provides support for its use in school settings, for example, being related to enhanced academic performance (Terry et al., 2014) and improved career outcomes for youth with special needs (Sheftel et al., 2014).

Although these are common approaches to "motivating students," none of them offer a conceptual integration of motivation with cognitive factors. This may be because theory-driven research on achievement motivation tends to be rooted in the domain of educational psychology which has little cross pollination with professional domains of psychology that tend to focus on individual difference variables such as intelligence. Indeed, we reviewed the tables of contents from the *Canadian Journal of School Psychology* since 2010 and identified only 14 articles that explicitly reference a theory of achievement motivation (Table 1). These papers varied widely in terms of the depth of theoretical description and their conceptual precision. An additional 15 research articles mentioned some type of motivation construct, although the terminology was

inconsistent and no specific theoretical approach was named. About 50% of the papers were published in just the last three years and most of them used motivation theory as a secondary or tertiary focus rather than as a guiding framework. Absence in the research literature may also suggest an absence in practice. Indeed Cleary (2009) surveyed 108 school psychologists about their training in motivation and found that respondents agreed overwhelmingly that increasing their knowledge about motivation would improve their practice. An important starting point towards this is for school psychologists to have access to theories of achievement motivation in a way that has been tailored to the scope of their practice.

Theoretical Review of Achievement Motivation

As an overarching definition applicable to all articles in this special issue, we broadly define achievement motivation as the drive and energy to start and sustain a goal pursuit (Schunk et al. 2008). As will become plainly clear through each article, motivation is not a singular construct. Instead, theories of achievement motivation offer frameworks from which researchers conceptualize both the quantity and quality of motivation. As such, while teachers and professionals may discuss "if" a student is motivated, achievement motivation researchers tend to focus on "how" a student is motivated. By extension, motivation can be viewed as a malleable construct that is amenable to intervention and therefore potentially useful for the work of school psychologists. In other words, understanding of the qualities of motivation, not just quantity, may provide school psychologists with new information about students and ideas about how to support them towards identified academic and behavioural outcomes. The authors in the special issue review five contemporary theories of achievement motivation that are relevant at both the individual student and contextual classroom levels including: control-value theory of emotions, achievement goal theory, mindset theory, self-determination theory, and self-regulated learning.

Each paper attends to a growing body of intervention research, often using experimental designs, to highlight both the strength of causal mechanisms and the practical opportunities for intervention.

Brief Description of the Contributions to the Special Issue

While serious mental health concerns continue to rise in school-age children (Cost et al., 2021), Tze and colleagues (this issue) remind us that subclinical levels of emotions exert critical influences on students' learning as well. They introduce the Control-value Theory (CVT) of Emotions (Pekrun, 2006) as a framework from which school psychologists can consider a wide range of achievement emotions including boredom, enjoyment, hope, frustration, relief, etc. alongside student learning and behaviour. According to CVT, achievement emotions - that is emotions experienced in an achievement context like school - are rooted in students' cognitive appraisals of how much control and value they perceive in a given task. The antecedent component of the theory makes emotions amenable to intervention and the breadth of emotions addressed by CVT can help school psychologists think broadly about the emotional lives of students.

Although Achievement Goal Theory may appear to be under constant theoretical revision (Elliot & Hulleman, 2017), Chazan and colleagues (this issue) provide an incisive explanation of mastery and performance goals that can give readers a viable alternative to norming and comparisons. Drawing on the 2 x 2 framework, Chazan and colleagues describe the many advantages of mastery-approach goals, defined as the goal to develop competence, relative to goals oriented to performance or seeking to avoid failure. They go on to describe ways that school psychologists can use both classroom level interventions to cultivate what are called

"classroom goal structures" and individual interventions to encourage students to hold mastery-approach goals.

Anchoring Achievement Goal Theory to a deeper set of belief patterns, Kapasi and Pei (this issue) provide a thorough review of Mindset Theory (Dweck, 2006). Of all the theoretical frameworks described in this special issue, Mindsets might be the most familiar with Dweck's TEDTalk having been viewed 13,013,472 times as of October 1, 2021, its transcript available in 43 languages, and more than 2 millions copies of her book (2006) in circulation. The underlying premise of Mindset Theory is that students are inclined to hold "fixed" or "growth" mindsets related to their intelligence. Students with fixed mindsets are inclined to think that their abilities are finite traits and cannot be increased even with effort. In contrast, students with growth mindsets tend to believe that their abilities can be developed with effort and persistence. Kapasi and Pei focus on the empirical data underpinning mindsets and show how this cognitive belief system is relevant to both children's intelligence and well-being. Moreover, they suggest ways in which school psychologists may need to attend to their own mindsets.

Guay (this issue) masterfully describes the tension between autonomously regulated forms of motivation and extrinsic motivations and their potential consequences for students' learning and wellbeing. In particular, he describes how attention to satisfying students' basic psychological needs is a catalyst towards autonomously regulated forms of motivation. By reviewing interventions related to satisfying needs as well as interventions in particular school subjects, Guay gives school psychologists many opportunities to think about the role of Self-determination Theory (SDT; Ryan & Deci, 2017) in their work. He reminds school psychologists of the importance of sharing this type of information with both teachers and parents as influential members of a team.

While self-regulation is well recognized as relevant to children's healthy development and somewhat instantiated in the practice of psychology through manualized programs (e.g., Self-Reg(R) Shankar & Hopkins, 2019), less is known about Self-regulated Learning (SRL) specifically. Bakhtiar and Hadwin (this issue) use Winne and Hadwin's (1998) four-phase model of SRL to illustrate student motivation as an antecedent, a mediator, and an outcome of self-regulated learning. Through application of a case study, they show the cyclical nature of SRL in supporting students' task understanding, goal setting, strategic enactment, and adaptation. Many of the previous motivation constructs are woven through the SRL framework allowing school psychologists to begin seeing the constructs work together for the betterment of students.

The final commentary paper by McGrew (this issue), invites school psychologists to seriously consider what type of role the aforementioned motivation theories and constructs can or should play in augmenting traditional cognitive batteries (McGrew, 2009). McGrew explains that cognition, affection, and conation are the "trilogy-of-the-mind" [and] should be resurrected in the form of a revised academic aptitude framework. McGrew goes on to devise such a framework that he calls the Cognitive-Affective-Motivation Model of Learning (CAMML) in which such constructs collectively represent a student's readiness to learn. He revisits overarching motivation "questions" that school psychologists can use to bring motivation constructs into a central role in practice.

Additional Theoretical Perspectives

Even with an entire special issue dedicated to this topic, we were not able to capture all relevant theories of achievement motivation. Thus, we briefly address two additional theories that in many ways serve as the foundation for theories described more fully by the authors of the distinct papers.

Expectancy-value Theory. According to Expectancy-Value Theory (Eccles & Wigfield, 2002), two subjective beliefs underpin student motivation. The first belief is related to students' *expectancy* that they will be successful in an upcoming task. When students believe they can do a task, they meet the minimum threshold to move into action towards their positive expectation. When students do not expect success, they lack reasons to undertake the task. The second belief arises from whether or not students see value in the task. When students have a perception of value, they are mobilized relative to when they do not perceive value. Value can come in at least three forms. First, when individuals undertake tasks simply because they want to, it has intrinsic value. When tasks are undertaken because they serve a useful purpose in the short or long term, the task has utility value. Finally, when people undertake tasks to meet personal needs separate from a specific outcome, it is labeled attainment value. Expectancy and value beliefs tend to have a positive correlation that gets stronger over time and leads to positive associations with student achievement (Wigfield & Cambria, 2010).

Value is weighed against the possible costs of goal pursuit (Flake et al., 2015). Cost is defined as "what an individual has to give up to do a task, as well as the anticipated effort one will need to put into task completion" (Eccles, 2005, p. 113). Researchers theorize that cost also has three manifestations. On the one hand, students may perceive the cost of effort needed to be successful as simply not worth it. In this way cost and value may be essentially inversely related. On the other hand, when students invest effort in one activity they have less available for another and that cost may make the former activity less appealing. Finally, anytime students invest effort there is a chance of failure and an associated psychological cost. Cost has been found to negatively correlate with grades, interest, and overall motivation (Flake et al., 2015).

Researchers have often operationalized expectancy beliefs as self-efficacy, putting the latter alongside value beliefs in empirical research (e.g., Bong, 2001). Although the ongoing debate between expectations and efficacy (Williams, 2010) is beyond the scope of our review, the main difference is the extent to which the belief is comparative. Self-efficacy refers to a person's beliefs in their capabilities to complete a specific task or produce a desired outcome and tends to be measured by asking students about their personal confidence in a domain-specific task (Bandura, 1977). Efficacy beliefs are one of the strongest psychosocial predictors of student achievement (Robbins et al., 2004). In contrast, measures of expectancies ask students to think about their ability relative to other students, and to other activities that they do (Wigfield & Cambria, 2010).

Intervention and experimental evidence. Hulleman and colleagues (2016) encourage teachers who encounter problems with student motivation to first decide if it is related to expectancy, value, or cost before deciding how to intervene. Indeed the same advice can apply to school psychologists. Despite this recommendation, most of the formalized interventions focus on increasing students' perceptions of utility-value. In utility-value interventions, teachers adjust students' assignments from simply reporting facts to drawing connections between the content and their personal lives (Daniels & Goegan, 2019). Such interventions have been successful in high school biology classes as well as a number of college courses, resulting in increases of interest and of up to 0.80 in GPA on a four-point scale, compared to control groups (Harackiewicz et al., 2016; Hulleman et al., 2010; Hulleman et al., 2016). Moreover, these results are often strongest for students with low expectations for success, who may be in the most need of support (e.g., Harackiewicz et al., 2016).

Relevance to school psychology. School psychologists should be mindful of expectations, values, and costs both when beginning their relationships with students and when outlining their recommendations in the final psychoeducational assessment report. Students who have histories of failure may have low expectations for success in regards to the process of assessment itself nevermind their perspective on the likelihood of successful intervention. The principles of a utility-value intervention can be extrapolated to intervention work by having students make connections with their personal lives. Readers will see ideas related to expectancy and value in the later papers, but cost is a unique element that should not be ignored. Having conversations with the student, parents, and teachers may shine light on reasonable expectations, shared values, and on what recommendations come at too large a cost to the student thereby functioning as a barrier. For instance, recommending daily literacy intervention over the recess period should be weighed with the physical costs associated with missing gross motor activity. Similarly, a grade 6 student who is reading at a grade 1 level may feel embarrassed by the content or pictures in early readers and thus avoid such books in front of their peers to avoid the social costs. Often a very simple solution to improving quality motivation is to be aware of and reduce costs.

Attribution Theory. According to Attribution Theory (Weiner, 1985), particularly following a negative, important, or unexpected outcome such as failing a test, students will seek a "cause" to explain the outcome. Given that many students are referred to school psychologists following some negative, important, and/or unexpected outcome, it is probable that the student and the psychologist are both involved in a process known as causal search. During causal search, people can identify any number of possible explanations (i.e., attributions) for an outcome, the most common of which are some form of effort, ability, or chance. Attributions are then classified along three causal dimensions (Weiner, 1985). According to the *stability*

dimension, some explanations for an outcome are stable suggesting they will not change over time; whereas, others are unstable suggesting a malleability. The *locus of causality* dimension dictates that causes are either viewed as internal, that is due to our own doing, or external, that is due to the work of others or the learning environment. Lastly, some explanations for outcomes are considered *controllable* by the person and others are viewed as uncontrollable. It is the underlying causal dimensions, not the attribution itself, that in turn affect students' emotions and behaviours. Specifically, unstable attributions tend to be part of an adaptive pattern of motivation because they are associated with expectations for future success. Internal and controllable attributions tend to encourage students to take responsibility for the outcome, invest greater effort, and bring out positive emotions and higher academic achievement. Stable, external, and/or uncontrollable attributions tend to be less adaptive and are associated with blaming others, giving up, and negative emotions (Perry et al., 2008).

Intervention and experimental evidence. Attributional Retraining (AR), uses a process similar to cognitive behaviour therapy to increase students' attributions to control in order to improve their motivation in future situations. AR interventions are more common with university students than younger children and are often delivered in a single administration using a video or handout and some form of consolidation exercise (Perry et al., 2014). The results of AR are promising and are reviewed in some depth in the papers of this special issue. Evidence shows that AR can improve university students' academic achievement by upwards of 10% or almost one letter grade relative to students in the control groups. Perry and colleagues (2014) have also shown effects of AR on university students' emotions, persistence, and their cognitions. For all outcomes, the effects are often most pronounced for students with some sort of academic

vulnerability, such as, low initial performance or low perceptions of control (Perry et al., 2014) making it a particularly valuable perspective for school psychologists.

Relevance to school psychology. A relevant nuance for school psychologists is that students make attributions for their own behaviours as well as the behaviour of others. In particular, students' interpretation of help-giving can lead to adaptive or maladaptive attributions (Weiner, 2001). When children receive help without asking for it, it can signal that the help-giver thinks they lack ability because if it was a matter of more effort the help-giver would let them continue trying without interference (Graham & Barker, 1990). It is common for students' attributions to be intertwined with their perception of their own self-worth, which makes for a dangerous combination in the face of failure, as high effort and failure can lead to or reinforce attributions of low ability. As an alternative, students may use self-protective strategies to maintain a sense of competence and worthiness despite having failed at a task. For example, students may engage in procrastination to be able to keep their self-worth intact by attributing their failure to external, unstable, and controllable causes (i.e., "I didn't even study"). These self-serving strategies can also lead to academic dishonesty such as cheating or plagiarism in order to avoid appearing unable and lacking intelligence. School psychologists should be aware of signs as such that may signal intervention is warranted to disentangle attributions from self-worth and help students understand that neither seeking help nor investing effort is a signal of low intelligence or ability, but rather signals healthy strategies and motivation.

Trajectories of Motivation in School Age Children

Because school psychologists work with children in all levels of schooling, we provide an overview of the general developmental trajectory of achievement motivation (see Wigfield et at.,

2015 for an overview). Within this, it is important to consider how students' motivation changes over time in relation to both the school environment and their cognitive development.

The school environment differs between elementary, middle, and high school in ways that many would say are largely developmentally appropriate. Elementary school usually involves a contained class of students, a single teacher, and a focus on skill development for each student. In contrast, middle and high school are characterized by larger classes, multiple teachers, and increased need to demonstrate achievement relative to others. Either because of these contextual factors, or by association, elementary school teachers tend to be more focused on implementing mastery classroom goal structures than high school teachers (Daniels, 2015). Similarly, Midgley et al. (1995) found that elementary school teachers self-reported using instructional practices that emphasized mastery goals more than did middle school teachers - a shift that was echoed by students themselves who perceived a greater emphasis on mastery goals in their classrooms before compared to after their transition to middle school (Anderman & Midgley, 1997).

The way students think also changes as they move through the grades. From an attribution perspective, Folmer and colleagues (2008) showed that effort tends to be viewed as a beneficial strategy until about age nine at which point students begin to describe an inverse relationship between ability and effort. Said directly, young children believe that smart students work hard; whereas, older children explain that being smart results in needing to work less hard (see Muenks & Miele, 2017 for a review). Parallelling their classroom goal structures, students tend to report lower levels of personal mastery goals and more personal performance goals following the transition from elementary to middle school (Anderman & Anderman, 1999). Moreover, research generally suggests that children's competence, value beliefs, (e.g., Wigfield

et al., 2006) and intrinsic motivation (e.g., Gottfried et al., 2001) decline steadily from middle childhood through adolescence; however, there are some groups of students that show different trajectories including increase (e.g., Wang et al., 2017).

Showing the importance of both the context and students' cognitions, Gnambs and Hanfstingl (2016) replicated the common decrease in intrinsic motivation from age 11 to 16. However, they also examined the extent to which the students' basic psychological needs were met in school over the same period of time. They found that changes in need satisfaction predicted the change in intrinsic motivation. Specifically, sustained satisfaction of basic psychological needs appeared to buffer the decline of intrinsic motivation over time. The authors state that "the decline in intrinsic motivation across adolescence is not an inevitable developmental imperative, but, rather, is strongly influenced by the degree that the current school environment can meet students' psychological needs" (p.1701).

In sum, it seems that elementary school environments are more aligned with the principles of basic psychological need satisfaction and mastery motivation and that elementary age students also have personal cognitive beliefs aligned with effort, mastery goals, and value. Then, over time, the schooling context becomes more competitive and students' own cognitions shift towards comparison as well. From these trends, we suggest there are two implications for school psychologists. First, on the individual level, school psychologists may need to focus on protecting elementary students' adaptive motivational tendencies; whereas, in middle and high school they may need to focus on restoring these beliefs if they have eroded. Second, on the classroom level, school psychologists may want to consider different ways to encourage elementary and secondary school teachers to create classrooms that cultivate adaptive motivation in the form of effort, value, mastery, and intrinsic motivation. Towards this end, it is important to

note that teachers have different responses to "evidence". Daniels and colleagues (2020) found that in response to a fictitious motivation intervention professional development opportunity, elementary school teachers were more persuaded by personal testimony of its effectiveness than high school teachers who were more convinced by experimental evidence.

Future Directions for School Psychology and Conclusions

On the heels of COVID-19 there has perhaps never been a clearer need for school psychologists and teachers to piece together a more complete understanding of student achievement. It is obvious that traditional measures of cognition alone are simply not enough (McGrew, this issue). The authors in this integrative and theoretical review have highlighted the relevance of five theories of achievement motivation to the practice of school psychology for the betterment of students. And McGrew has offered a framework to bring the ideas together as an anchoring for the field. To continue advancing this position, we conclude with three directions for future work to expand the under-recognized influence of achievement motivation in the field of school psychology.

Research

The majority of research on achievement motivation has been conducted with typically developing students and convenience samples. As such, a critical area moving forward will be to conduct research guided by motivation theories with populations of students who use psychological services. Some examples of this work already exist. For example, several researchers have used motivation theory with students with attention-deficit hyperactivity disorder (ADHD). Rogers and Tannock (2018) showed that students with ADHD experience less satisfaction of their basic psychological needs than their peers and Zendarski and colleagues (2020) showed that students with ADHD also had poorer relationships with their teachers than

their peers reported. Sideris (2009) offers an interesting application of motivation theories to students with learning disabilities (LD) and offers methodological considerations relevant to the population. Goegan, Pelletier, and Daniels (2021) compared mindsets in students with LD with non-LD peers and found that both groups reported similar levels of both fixed and growth mindsets. This does not surprise us, because the relationships within motivation theories are proving robust as the field expands its focus on equity, diversity, and inclusion (Decuir-Gunby & Schutz, 2016; Zusho & Kumar, 2018) and embraces anti-hegemonic perspectives (e.g., Fong et al., 2019). Nonetheless, the accumulation of empirical research will be needed in order to make evidence-based claims as is required by the practice of school psychology.

A second important area of research is to examine the motivational beliefs of teachers and school psychologists themselves as they pertain to students receiving psychological services. Clark (1997) found that teachers viewed LD as internal, stable and uncontrollable, and as a result, experienced lower anger, higher sympathy and held lower academic expectations, and higher expectations of future failure for students with LD than for their peers. Furthermore, research by Woodcock and Vialle (2010) found that teachers' emotions and behaviours also differed based on the attributions made for student behaviour and disability status. In a sample of Canadian teachers, Frohlich and colleagues (2020) found that teachers tend to view the difficulties associated with LD to be less stable than those with ADHD. Similar research has been conducted with parents (e.g., Jacobs et al., 2016). We suggest this is not only an important area for future research, but should also be part of reflective practice because the motivational beliefs of school psychologists may be just as important as those of students.

Theory

The field of achievement motivation has many theories and overlapping terminology (Hulleman et al., 2010) that render its application to practice somewhat tentative. One of the reasons intelligence testing is often considered the flagship of psychology is because of its rigorous identification and classification of constructs linked to measurable behaviours (Schneider & McGrew, 2018). Although the motivation theories as presented can be applied to the practice of psychology, this process would be greatly aided by identifying a constellation of core motivation constructs to improve researchers' and practitioners' understanding of how motivation contributes to student learning. Within this process we see two important considerations. First, this objective will require researchers to consider constructs across rather than within theories (Kaplan et al., 2012). In one such study, Barron and colleagues (2012) asked college students to indicate how strongly constructs from the theories described herein were characteristic of their most and least motivating classes. Competence, value, and positive emotions had the largest differences between the two settings with effect sizes $d > 2.5$ and, as such, may be a good starting place.

Second, researchers will need to consider these constructs in relation to the information provided by intelligence tests and other psychoeducational assessments. For example, the benefits of effort which are usually uniformly good for typically developing students may have nuances that must be unpacked theoretically when working with students who may exhaust their effort before reaching their goals. Revisiting the notion of aptitude x treatment interactions, as formalized by Snow (1991), may be particularly important in ensuring motivational constructs are appropriately conceptualized alongside cognitive constructs.

Practice

Finally, for the ideas presented in this review to gain momentum in the practice of school psychology, researchers must create resources for use by school psychologists. The possibilities in this vein are numerous. One option is to use existing motivation intervention protocols and materials to build manualized programs (Goldstein et al., 2012) that school psychologists can apply. However, because achievement motivation does not have a diagnostic perspective, we caution school psychologists to be flexible in their thinking in this capacity. There simply is no "cut score" for motivation and we do not think there should be. Another option is to create tools that may be more explanatory and directive in nature. For example, flow charts and guiding questions may help school psychologists assess students' motivational level and quality and make decisions about how to move forward. Table 2 in this review provides our initial thoughts on this option, but each theory or question could lead to an entire set of tools for use with students, teachers, and parents. Likewise even information pamphlets may be helpful, particularly in explaining the benefits of adaptive motivation beliefs such as effort, mastery, or intrinsic motivation to teachers and parents. This type of work would require further partnering of motivation researchers with practicing school psychologists to maximize the theoretical rigor and applied utility.

Conclusion

One point that needs to be underscored as we conclude this paper is that all arguments presented herein are predicated on agreement that some forms of motivation are "better" than others (Linnenbrink-Garcia et al., 2016). We know this is often an unpopular perspective; however, the evidence presented in this special issue clearly suggests that it is indeed true. As you will see in the papers in this special issue, students who expect success, value their learning, believe they can grow, are willing to exert effort, focus on their own development regardless of

their peers, experience autonomous motivation, and regulate such processes, not only tend to achieve good grades, but also have better emotional and cognitive wellbeing. Students can make gains when motivated by extrinsic rewards, comparison, and restrictions of control; however, they are likely to do so accompanied by negative emotions and compromised self-worth. As the practice of school psychology continues to move away from diagnostic deficit based models (Climie & Henley, 2016), a focus on the quality of student motivation has to be an important key in unlocking the promise of children who engage with school-based psychological services.

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Table 1.

Articles in Canadian Journal of School Psychology Utilizing Achievement Motivation

Year	Vol/Is	Authors	Title	Motivation Theory/Construct
2010	25/1	Shelley & Craig	*Attributions and Coping Styles in Reducing Victimization*	Attribution Theory
2010	25/3	Heath, Baxter, Toste, McLouth	*Adolescents' Willingness to Access School-Based Support for Nonsuicidal Self-Injury*	Willingness
2012	27/3	Cappadocia, Pepier, Cummings, Craig	*Individual Motivations and Characteristics Associated With Bystander Intervention During bullying Episodes Among Children and Youth*	Self-efficacy Theory
2012	27/3	Wiener, Malone, Varma, Markel, Biondic, Tannock, Humpries	*Children's Perceptions of Their ADHD Symptoms: Positive Illusions, Attributions, and Stigma*	Attribution Theory
2013	28/1	Vesely, Saklofske, Leschied	*Teachers-The Vital Resource: The Contribution of Emotional*	Self-Efficacy

			Intelligence to Teacher Efficacy and Well-Being	
2015	30/3	Janzen, Cormier, Hetherington, Mrazik, Mousavi	*A Canadian Investigation of the Psychometric Properties of the Student Motivation and Learning Strategies Inventory*	General
2017	32/2	Fan & Dempsey	*The Mediating Role of School Motivation in Linking Student Victimization and Academic Achievement*	Self-Efficacy, Intrinsic Motivation
2018	33/3	Wilcox, McQuay, Blackstaffe, Perry, Hawe	*Supporting Academic Engagement in Boys and Girls*	Self-determination Theory
2018	34/1	Geres-Smith, Mercer, Archambault & Bartfai	*A Preliminary Component Analysis of Self-Regulated Strategy Development for Persuasive Writing in Grades 5 to 7 in British Columbia*	Self-regulated learning, self efficacy

2018	34/2	Gagnon & Cormier	*Retrieval Practice and Distributed Practice: The Case of French Canadian Students*	Self-regulated learning
2019	35/2	Oram, Rogers & DuPaul	*Explaining the Relationship Between ADHD Symptomatology and Amotivation in the Undergraduate Population: The Role of Basic Psychological Need Frustration*	Self-determination Theory
2020	35/4	Varma & Wiener	*Perceptions of ADHD Symptoms in Adolescents with Attention-Deficit/Hyperactivity Disorder: Attributions and Stigma*	Attribution theory
2020	36/1	Purcell, Andrews, & Nordstokke	*Peer Victimization and Anxiety in Youth: A Moderated Mediation of Peer Perceptions and Social Self-Efficacy*	Self-Efficacy

2021	Online first	Goegan, Pelletier, & Daniels	*I Just Have to Try Harder: Examining the Mindsets of Students with LD*	Mindset Theory

Table 2.

Summary of Theories and Application for School Psychology

Question to Student	Theory	Symptom	Recommendation	Intervention
Do you think you will be successful and how important is it to you?	Expectancy Value	Apathy	Increase personal value of tasks	Utility-value
What is the cost(s)?	Expectancy Value	Apathy	Remove barrier	Utility-value
How confident are you that you can complete this task?	Efficacy beliefs	Low confidence	Create opportunities for success	Opportunities for success
Are you willing to invest effort in this task?	Attribution Theory	Compromised self-worth	Increase control	Attributional Retraining
How do you feel about this task?	Control-value theory of Emotions	Negative emotions	Increase control and value	Combined AR and Value
Do you think you can improve on this task?	Mindset Theory	Helplessness	Build growth mindset	Mindset

How do you define success?	Achievement Goal Theory	Comparisons	Focus on self improvement	TARGET classrooms
Can you separate your performance from that of others?	Achievement Goal Theory	Self-Handicapping	Reduce comparison	TARGET classrooms
Do you feel like you have a choice? like you are good at things? supported?	Self-determination Theory	Reliance on rewards for compliance	Focus on basic psychological needs	Autonomy support interventions
How do you monitor and adapt your learning?	Self-regulated learning	Lack of clarity	Scaffold monitoring and adaptation	SRL-Focused Interventions