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Perfectionistic Students: Contributing Factors, Impacts, and Teacher Strategies

Courtney R. Schruder^{1*}, Tracey Curwen¹ and Glynn W. B. Sharpe¹

¹Nipissing University, 100 College Dr. North Bay, ON P1B 8L7, Canada.

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Review Article

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ABSTRACT

Aims: Students with perfectionistic tendencies may be present in classrooms; teachers would benefit from knowledge regarding contributing factors to, outcomes of, and evidence regarding intervention. The purpose of this paper was to provide an overview of evidence regarding how perfectionism has been defined, the role of biology and environmental factors in perfectionistic tendencies, the impact of perfectionism in the academic setting, and whether there is any benefit to interventions designed to alter perfectionistic tendencies.

Results: It was found that biological factors are related to perfectionistic tendencies; however, environmental factors such as parenting style/family characteristics are also important. Perfectionistic tendencies are evident in childhood, and are believed to remain fairly stable over time. Some interventions may reduce levels of perfectionistic tendencies in certain individuals, but it seems that reducing perfectionistic thoughts and behaviours may also be detrimental for some.

Conclusion: Because there is a lack of research directly regarding perfectionism in the school system, generalizations from students and nonstudents samples are used to develop some recommendations for teachers working with students who may be perfectionistic. Suggestions for teachers who have students with perfectionistic tendencies are provided.

^{*}Corresponding author: Email: c_schruder@hotmail.com;

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1. INTRODUCTION

Perfectionism, as with other personality characteristics, is influenced by both biological and environmental factors and has been discussed in the literature as both adaptive and maladaptive [1,2]. In educational contexts, where high standards are usually encouraged, understanding perfectionism is important, as it may affect motivation, cognition, and performance of students [3]. Knowledge of the benefits and detriments of perfectionism will aid teachers working with perfectionistic students. The goal of this paper is to provide a *brief* overview regarding beliefs and the development of perfectionism to provide educators with some background information; this is followed by a discussion of perfectionism within educational settings. Of note, much of the evidence available is specific to adolescents and young adults; therefore, we have, in places, used this information to develop hypotheses regarding school aged children due to the lack of evidence in this younger age group. To aid the reader, we have provided a table (Table 1) outlining the age ranges covered in the studies we present.

Researchers	Age range
Arpin-Cribbie, Irvine, & Ritvo (2012)[59]	18-48
Bieling et al. (2003)[29]	Undergraduate students
Cook & Kearney (2009)[11]	11-17
Craddock, Church, & Sands (2009)[19]	Undergraduate students
DiBartolo & Varner (2011)[34]	Mage = 9.74
Flett, Hewitt, & Singer (1995)[20]	Undergraduate students
Frost, Lahart, & Rosenblate (1991)[12]	Undergraduate students
Gilman & Ashby (2003)[37]	11-15
Glover et al. (2007)[52]	23-45
Gnilka, Ashby, & Noble, (2012)[33]	11-15
Grzegorek et al. (2004)[27]]	Undergraduate students
Landa & Bybee (2007)[39]	Undergraduate students
Neumeister& Finch (2006)[18]	Undergraduate students
Nobel, Manassis, & Wilansky-Traynor (2011) [51]	8-11
Owens et al. (2012)[32]	12-13
Radhu et al. (2012) [53]	Undergraduate students
Rice & Aldea (2006)[16]	18-22
Rice, Kubal, &Preusseur (2004)[14]	9-11
Rice et al. (2007)[15]	12-14
Shih (2011)[35]	12-15
Stoeber & Stoeber (2009)[17]	18-60
Tozzi et al. (2004)[9]	28-70
Wade &Bulik (2007) [10]	28-70

Table 1. Age ranges covered in major studies

In order to identify evidence to include, we conducted a systematic review of papers regarding, specifically, biological and environmental relationships with perfectionism using primarily the databases of PsycINFO, PsycARTICLES, Scholars Portal Journals, and

Academic Search Premier; search terms included perfectionism, perfectionist, student, education, benefit, hindrance, and treatment. We did not search papers regarding issues co-morbid with perfectionism, such as eating disorders and Obsessive-compulsive disorders (OCD), as our goal was to present educators with a brief background and issues that may be relevant to the average student in their classes, and not students with emotional and/or behavioural exceptionalities.

We chose to avoid specific mental health issues, as they are outside the scope of a teacher's duties, and instead focused on assisting teachers to understand more generalized behaviours of perfectionism that they may encounter in their classrooms. Following the brief overview of evidence, we provide some suggestions for educators working with students who have perfectionistic behaviours. Of importance, our intervention suggestions are specific to strategies that a teacher may utilize to assist a student showing perfectionistic thoughts and behaviours, they are not intended as suggestions for students whose perfectionistic characteristics are a symptom or characteristic of a more prominent issue (i.e., eating disorder, OCD). We have attempted to draw upon curricular expectations in suggesting interventions. This brief review and teacher suggested interventions are intended to assist teachers in developing their own intervention strategies based on individual student needs.

2. PERFECTIONISM

Various definitions and characteristics of perfectionism have been discussed. Hollender [4] provided one of the first definitions of perfectionism, describing it as "the practice of demanding of oneself or others a higher quality of performance than is required by the situation". Perfectionism has been considered dysfunctional and an indicator of psychopathology [1]; this is not surprising given the relationship between perfectionism and depression, obsessive-compulsive disorder, and eating disorders [5,6,7]. On the other hand, functional or positive aspects of perfectionism have also been discussed. Adaptive or normal perfectionism refers to individuals who set high *but achievable* personal standards, while understanding and accepting that their standards may not consistently be met [2]. Conversely, maladaptive perfectionists set unrealistically high personal standards and then struggle to accept failing to achieve their self-imposed standards [2].

Another prevalent and extensively researched multidimensional model of perfectionism is specific to the orientation of personal standards and includes self-oriented and socially prescribed perfectionism [8]. Self-oriented perfectionists strive for perfection, as it is important to them; specifically, self-oriented perfectionists set extremely high and demanding standards for themselves, and the source and subject of their perfectionism is internal [8]. Conversely, socially prescribed perfectionists believe that significant others expect perfection from them, and that these standards must be achieved for acceptance; the source of perfectionism is external, but the subject is internal [8]. Early beliefs that perfectionism was strictly one-dimensional and detrimental have been replaced; currently, a multi-dimensional view stresses that there can be benefits as well as detriments with respect to expectations and the source of perfectionistic standards. Following a brief discussion of potential biological and environmental aspects of perfectionism, we will discuss the importance of teachers considering these factors with respect to the multi-dimensional features of perfectionism.

3. CONTRIBUTING FACTORS

Exploring the causal factors of perfectionistic tendencies is a relatively new area of study; however, it is increasingly evident that biological and environmental aspects are important for understanding this personality characteristic. We present this brief overview to demonstrate the importance of considering the complex intertwine of biology and environment in the development and stability of a student's perfectionistic tendencies. Understanding potential underlying issues should assist with supporting students whose standards seem excessive.

3.1Biological

Twin studies have revealed the importance of heritability on a number of personality characteristics including perfectionistic traits. For example, researchers comparing monozygotic and dizygotic twin pairs on specific perfectionistic characteristics have found support for a genetic influence on personal standards and concern over mistakes [9,10]. On the other hand, the genetic influence on the perfectionistic characteristic of doubting one's own actions was supported in one study (i.e., [10]) but not in another (i.e., [9]).

Others have investigated whether or not parents and children share perfectionistic traits, which may suggest heritability. In a study of 97 children (53 female), 9 mothers and 63 fathers, Cook and Kearney [11] investigated whether orientation of perfectionism (i.e., selfor socially- prescribed) could be predicted by parents' orientation of perfectionism. Using regression analyses, the researchers found no relationship between fathers' and their sons' or daughters' perfectionism scores, as well as no relationship between mothers' and daughters' orientation. However, they did find an impact of mothers' self-oriented and socially prescribed perfectionism and self-oriented perfectionism in sons. A similar study of parents' and female children's perfectionistic tendencies revealed that overall perfectionism scores of fathers and daughters were not associated [12], similar to Cook and Kearney's findings. However, Frost and colleagues did find a relationship between the overall perfectionistic scores of mothers and daughters, indicating more perfectionistic characteristics in daughters who have mothers with more perfectionistic tendencies.

As differences in the gender of the child and parent have been demonstrated, it is important to consider gender with respect to perfectionistic traits. Chromosomal differences between males and females lead to much dissimilarity between the sexes and, consequently, researchers have investigated how and if the genders differ with respect to specific aspects of perfectionism. Investigations have compared scores on measures of perfectionism between male and female children, adolescents, and young adults, and no differences have been found [13,14,15,16,17]. Varying measures and age groups repeatedly indicate no gender differences on perfectionism, suggesting that gender may not uniquely be related to perfectionistic traits.

The results regarding biology and perfectionism suggest that there may be a heritable component to certain traits of perfectionism, at least for females. Although the findings regarding perfectionism in parents and children suggest that certain traits may be heritable, they also suggest that the child's environment may have an influence on perfectionism.

3.2 Environmental

Perfectionism has been attributed to parent and child interactions, including parenting style and attachment [18]. To investigate the relationship between environment and perfectionism, researchers have compared parenting styles of children with and without perfectionistic traits. Craddock et al. [19] collected data on family system characteristics and perfectionism traits of 185 female and 79 male university students (Mage = 19 years). Using regression analyses, the researchers showed that extreme family enmeshment and highly authoritarian parenting styles were significant predictors of dysfunctional and functional perfectionism in offspring [19]. In addition, family chaos was found to have a significant negative relationship with functional perfectionism, although this was not found to relate to dysfunctional perfectionism [19]. Other investigated aspects of parenting such as disengagement, rigidity, nurturing, authoritative, or permissive were not related to the children's perfectionistic tendencies [19]. Along with functionality of perfectionism, orientation of perfectionism has been investigated with respect to parenting styles. Flett et al. [20] classified 50 males and 50 females (based on their perfectionism scores) into self- and socially- prescribed perfectionism, and then compared these groups on parenting style. Self-oriented females were found to have a weak to moderate relationship with parents who demonstrated an authoritative parenting style, whereas socially prescribed females reported more permissive parents. No relationship between male self-oriented perfectionists and parenting styles was found; however, male socially prescribed perfectionists reported parents who were more authoritarian [20]. Researchers have also found links between parenting and adaptability of perfectionism. In a comparison of youth without perfectionism, youth with maladaptive perfectionistic tendencies, and youth with adaptive perfectionistic tendencies, those with adaptive perfectionism reported more balanced, cohesive, and adaptable families [21]. The results from this research suggest that parenting styles and family characteristics may be important in the development of perfectionistic tendencies, and that parenting may influence differing perfectionism traits for males and females.

As noted, we intended to provide only a brief overview of some of the research regarding nature, nurture, and perfectionism; evidence regarding birth order [22,23,24], ethnicity[11,13,25], and genes [26] is available and may be useful for educators to review in order to understand why some students demonstrate perfectionism. The evidence presented demonstrates that for teachers to understand perfectionistic tendencies, they should consider both the biological and environmental experiences of their students.

4. PERFECTIONISM: BENEFIT OR BARRIER?

Perfectionism may be apparent across many settings; however, the positive and negative perfectionism outcomes may be particularly evident in the school environment, where strong performance is commonly expected. Teachers may notice the impact of perfectionistic traits on a student's academic and social performance.

4.1 Academic Performance

Many research participants with perfectionistic tendencies attribute their academic successes to this trait [27]. It is not surprising that a resistance to decreasing personal perfectionism has been noted [27], given that a number of researchers have found a relationship between perfectionism and academic success. For example, in an investigation of dimensions of perfectionism and academic performance, scores indicating higher

personal standards predicted higher scores on final exams and grade point averages [28]. The relationship between adaptive perfectionism and positive academic performance has been found in a number of studies [29,30,31] and these researchers have also demonstrated that maladaptive perfectionism is related to poor academic performance.

Adaptive and maladaptive perfectionism are associated with test taking anxiety [29], indicating that perfectionism may increase anxiety regarding academic tasks, although adaptive perfectionists may still perform well. Anxiety has been linked to lower academic performance [32], so understanding the link between perfectionism and anxiety is likely important for teachers promoting academic success. Generalized anxiety is found to differ between adaptive, maladaptive, and nonperfectionists, with adaptive perfectionists reporting lowest levels and maladaptive perfectionists reporting the highest levels [33]. DiBartolo and Varner [34] conducted one of the few experimental studies examining children's perfectionism. In their study of 101 male and 56 female children (Mage = 9.74 years), those with high socially prescribed perfectionism reported greater anxiety across three experimental conditions (i.e., self-set goals, low experimenter goals, and high experimenter goals) compared to children with low socially prescribed perfectionism. It appears that certain types of perfectionism (i.e., socially prescribed and maladaptive) are associated with increased anxiety, which likely, in turn, affects academic performance. It is also possible that simply having perfectionistic tendencies negatively effects how students approach or experience academics, and knowing this may aid teachers in assisting perfectionistic students to be successful academically.

4.2 Social Performance and Coping

Self-perception and coping will no doubt impact school functioning; thus, perfectionism and self-evaluation may be linked. Issues such as self-esteem, mood, and stress have all been investigated with respect to perfectionism. In a study of self-esteem and perfectionism, Grzegorek et al. [27] divided a sample into perfectionist and nonperfectionist groups, and then compared them on self-reported self-esteem. Results revealed that adaptive perfectionists had significantly higher self-esteem scores than maladaptive perfectionists and nonperfectionists; maladaptive perfectionists and nonperfectionists did not differ [27].Bieling, Israeli, and Antony [29] evaluated mental health and perfectionism and found that higher adaptive or maladaptive perfectionism scores were associated with higher scores on measures of depression, anxiety, and stress. Others have investigated perfectionism and depression in young adolescents, finding that females scoring high (compared to those scoring low) on perfectionistic traits such as compulsiveness and sensitivity to mistakes reported more depressive symptoms; no relationship was found for males [15]. Furthermore, Shih [35] found that young adolescents with adaptive perfectionism experienced positive emotions and engaged in behavioural self-regulation, whereas maladaptive perfectionism was associated with negative emotions and self-handicapping. These results suggest a link between perfectionism and mood; however, again, the type of perfectionism appears to be an important factor in some mental health outcomes.

Intimacy or the closeness of relationships is another area where perfectionism has been investigated. Researchers have found that having maladaptive and adaptive perfectionism may increase the risk of fearing intimacy, with the risk being lower for nonperfectionists [36]. In a study of perfectionism and quality of life, Gilman and Ashby [37] compared those with adaptive, maladaptive, and no perfectionism on their perceived satisfaction with family, friends, school, living environment, and self. The researchers found positive relationships between adaptive perfectionism and all areas assessed; conversely, significant negative

relationships were found between maladaptive perfectionism and all domains [37]. These results indicate that those with more adaptive perfectionism feel positive about many areas of their life, whereas those with maladaptive perfectionism are not overly satisfied with their family, friends, school, or home; interestingly, both adaptive and maladaptive perfectionists reported significantly higher self-satisfaction than nonperfectionists.

Together, these results suggest that although self-esteem and satisfaction in various areas of life may be higher for adaptive perfectionists, perfectionism (both adaptive and maladaptive) may negatively affect mood and social interactions. Along with implications for academic performance, teachers should consider the social and emotional issues that may accompany perfectionism. Teachers should also be cognizant of the characteristics of perfectionism, as the implications appear to be specific to the type of perfectionism experienced.

4.3 Stability

Although much of the research regarding perfectionism and school success is related to young adults and post-secondary academic settings, the stability of perfectionism is useful in determining whether or not current research may be applicable to younger age groups. Based on evidence from a number of studies [38,39,16,17]; it seems that perfectionistic tendencies decrease with age. However, it is important to note that much of the evidence regarding stability is conducted in adult samples and compares younger and older adults, instead of following the same individuals over multiple time points. While there have been examinations of the effects of perfectionism on later adjustment, most have failed to provide information regarding the stability of perfectionism over time [16].

There is literature that traces the origins of perfectionistic tendencies to childhood [15], so it is believed that perfectionists likely set demanding standards for themselves from an early age; however, no supporting evidence exists. Some believe that perfectionistic characteristics increase from childhood, with more prevalence during adolescence [40], while others note that perfectionistic tendencies decrease after adolescence [39]. Until researchers conduct longitudinal investigations to determine whether or not perfectionistic childhood traits increase or decrease with age, the stability of this trait remains speculative.

There are a number of genetic and environmentally based disorders for which perfectionism is a feature. For example, perfectionistic characteristics are noted in, amongst other issues, eating disorders [41], Autistic Spectrum Disorders [42], Obsessive-compulsive disorder [43], and mood disorders such as depression [44], bi-polar disorder [45], and Cyclothymia [46], the sub-threshold form of bi-polar disorder. Although students with co-morbid difficulties may demonstrate perfectionistic characteristics in the classroom, our suggestions are not geared to exceptional populations, as their needs may be unique from students without comorbid difficulties; our focus was to review literature to provide a background and to present strategies for teachers regarding students whose perfectionism is impacting their academic and social experiences, and not on students whose exceptionalities require specialized resources or support.

That beingsaid, for students with exceptionalities (i.e., emotional and behavioural issues of which perfectionism is a symptom), perfectionism may be an early symptom of more complicated issues, and teacher recognition of perfectionism may allow for early identification of potentially clinically relevant difficulties. With teacher documentation of all behaviours that, along with perfectionism, may be of concern, teachers will provide early

identification of the more complicated needs of those students whose perfectionism may be impacting them academically. The prognosis of students whose perfectionism is an aspect of more serious issues will certainly differ from those without other mental health and behavioural difficulties. As such, the teacher cannot be a sole support regarding perfectionism for these students, and the strategies suggested below may not be applicable to this population. Therefore, the review to this point and the suggestions provided below are for teachers working with students who show characteristics of perfectionism, but who, to the teacher's knowledge, do not have overriding and more concerning emotional, behavioural, and mental health difficulties.

Evidence has shown that most personality traits remain fairly stable, so it is likely that the perfectionism trait may also be fairly constant [38]; as such, although it is not clear whether or not children or adolescents with and without perfectionistic tendencies show similar functioning to young adults, the potential issues and benefits regarding perfectionism discussed to this point may be useful for educators to consider with respect to perfectionistic students.

5. CLASSROOM INTERVENTION

Teachers may recognize perfectionistic tendencies in students who: are motivated by the fear of failure rather than striving for success; view successes as expected and thus not cause for acknowledgement; have difficulty starting or completing assignments for fear they are not perfect, and; show unwillingness to participate unless success is certain [47]. A number of classroom interventions to aid perfectionistic students have been suggested; however, to our knowledge, these have not been examined with respect to efficacy. Nugent [48] provides an overview of classroom techniques - such as strategies to encourage selfawareness and self-evaluation and address emotional needs - believed to aid perfectionistic students to restructure their cognitions. As noted, there is no evidence that these techniques are effective for perfectionistic students and, importantly, Nugent's discussion focuses on classroom techniques that may assist gifted students with perfectionistic tendencies. Therefore, along with not knowing whether these techniques are effective, it is also unknown whether such classroom strategies would be useful for non-gifted students showing signs of There is no doubt that teachers may be able to intervene when a perfectionism. perfectionistic student demonstrates self-doubt or unattainable expectations; however, there is little empirical evidence to indicate how this is best approached.

Perfectionism is thought to be difficult to change [49]. However, researchers have rationalized that if perfectionistic thinking is in any way learned, then it may be possible to alter detrimental thoughts through observation, practice, feedback, and other activities [50]. As noted, there is minimal research regarding the utility of interventions to assist perfectionistic children [36]. However, in one of the only empirical attempts to reduce levels of perfectionism, 78 at-risk children (36 girls; Mage = 8.5 years) were exposed to a cognitive-behavioural intervention targeting anxious and depressive symptoms, and significant reductions in self-oriented perfectionism, anxiety, and depression were noted; however, these improvements were not found for those with socially prescribed perfectionism [51]. These results suggest that the orientation of perfectionism may impact the benefits of interventions to alter perfectionistic cognitions and behaviours.

While there is a lack of research on interventions for children with perfectionistic tendencies, evidence regarding the utility of cognitive-behavioural and psycho-educational interventions on reducing perfectionistic thoughts and behaviours for adult perfectionism may provide

information regarding potentially effective methods for children. A number of researchers have investigated cognitive-behavioural programs with adult samples and demonstrated some benefits. For example, Glover and colleagues [52] implemented a cognitivebehavioural program (CBT) to address perfectionism through self-evaluation, competing beliefs, and dealing with issues that support perfectionism (e.g., personal standards, selfevaluation, and cognition); improvement in self-reported interpersonal, intrapersonal, and self-oriented perfectionism was noted. Radhu et al. [53] reported benefits of CBT for maladaptive perfectionism, noting improvement in anxiety sensitivity and negative automatic thoughts, depression, and stress. Researchers have also compared the benefits of various methods. For example, the effectiveness of a web-based CBT program with stress management, stress management without CBT, and no treatment were compared; stress management methods (with and without CBT) were found to be effective in reducing perfectionism and psychological distress [54]. Comparing CBT format, Pleva and Wade [55] noted that using only written text and exercises in a workbook or weekly sessions with a counselor assisted to decrease depression and perfectionism traits, with the weekly session group showing greater improvement than the workbook only group.

Although these intervention programs have shown benefit when compared to other treatments and no treatment, negative outcomes have also been reported including increases in anxiety [56] (regarding [52]) and although significant, intervention effect sizes are small [57]. Of note, even though a symptom reduction has been found following intervention, symptom severity remained at a concerning level [57]. Additionally, 20% of those using only a workbook to address perfectionistic traits and impacts reported clinically significant increases in depression over the three-month follow-up. These findings seem to highlight Flett and Hewitt's [58] supposition that perfectionism is difficult to treat.

While the significant reductions in levels of perfectionism as a result of some therapeutic treatments are noteworthy, it has been established that perfectionism is relatively enduring, and therefore, overall levels of perfectionism may remain relatively high, even when significant improvements are reported [56]. Based on the evidence presented above, it seems that some interventions such as CBT and stress management may benefit some individuals with characteristics of perfectionism; however, not all participants in the intervention programs showed long-term benefit and, in fact, some developed concerns with symptoms of depression and anxiety. Evidence also suggests that receiving more intervention is related to greater improvement [59], therefore, duration may be a factor in negative as well as positive outcomes. Although these interventions were tested within young adult samples, the results suggest that one method is not effective for all perfectionists, and that even though intervention may aid in reducing perfectionistic characteristics, at least for a short time, there is potential for other issues to increase. The decision to intervene with perfectionism should be considered with respect to the potential for benefit as well as detriments; in other words, the short term improvement in perfectionistic thoughts and behaviours may come at the cost of other mental health issues.

6. SUMMARY AND IMPLICATIONS FOR TEACHERS

Perfectionism has been linked to biological factors [11,9,10], personality characteristics [60,61,62], and child rearing practices [19,21,20,18]. Since twin and family studies demonstrate that genetics and heritability do have a role in the development of perfectionism, teachers should be aware that if a student has perfectionistic tendencies, then it is probable that at least one of their parents also has similar characteristics [11,12]. Addressing the child's perfectionism during school hours may be difficult given the stability of

these characteristics [38,39,16,15,17] and the likelihood that their home environment maintains or encourages perfectionism, given the evidence regarding environmental contributors [19,20,63,18]. Teachers may want to consider how best to aid the student and devise strategies to effectively address their concerns with a potentially perfectionistic parent.

The fact that no significant differences in perfectionism between males and females ever surfaced [13,14,15,16,17], suggests that neither parents nor teachers need treat male or female children with perfectionistic tendencies differently. However, findings regarding the role of male and female parents on male and female children's perfectionism should be considered with respect to the teacher – student relationship and the support or unknowing encouragement of a student's perfectionism. In addition, those in younger grades might be more impressionable than those in higher grades, and teachers may want to consider their own expectations and how these may support or encourage a young child's perfectionism [64]. Teachers have an important socializing role, and it is possible that teachers with perfectionistic tendencies might, unknowingly, have a negative influence on the thought processes and behaviours of perfectionistic students.

Some evidence suggests that academic performance, mood, and life satisfaction are related to various aspects of perfectionism [29,44,30,28,37,27,32,35,31], and this may be important knowledge for teachers working with perfectionistic students. If a teacher identifies a student as having increased test anxiety, stress, generalized anxiety, or depression, it may be useful to consider whether the student may also have perfectionistic tendencies, and if so, the type. Simply recognizing perfectionism may be a start, but assisting the student requires understanding whether their traits are adaptive or maladaptive, as well as socially or personally oriented. For example, if a student's perfectionism seems to be maladaptive, it may be beneficial to implement strategies to assist with peer and home relationships, self-evaluation, and academic views, as satisfaction in each of these is reportedly lower for maladaptive compared to adaptive perfectionists [37,27,35]. To benefit perfectionistic students, intervening in academic performance may be useful, but the teacher must be cognizant that many aspects of the child's environment may be impacted due to perfectionistic traits.

Unfortunately, no proven method to effectively intervene with perfectionistic students has been documented. Although potential strategies have been suggested for teachers, and some clinical evidence has been provided [54,52,51,55,53], there is little indication that any specific intervention will have long-term benefits. Of importance is the finding indicating that with a decrease in perfectionistic thoughts and behaviours, there may be an increase in other negative symptomatology [57,56,52]; therefore, when teachers are determining whether or not to attempt to alter a perfectionistic student's thoughts and actions, consideration must be given to the potential for negative effects. Perfectionism is not always detrimental to the student and, as such, teachers would be remiss to assume that all forms of perfectionism are a hindrance. Overall, deciding whether perfectionistic tendencies are a benefit or a limitation may be a decision that only the perfectionistic individual can make.

7. TEACHER INITIATIVES

Based on the evidence presented, we have suggested some methods and strategies to assist teachers working with perfectionistic students. It is important to note that the measures outlined are *suggested* responses to a child's behaviour *if* it becomes disruptive or problematic. We reiterate that evidence has found that not all forms of perfectionism are

maladaptive and that caution must be exercised when determining which students may require assistance.

Once a teacher notices concerning student behaviour patterns, it is incumbent upon him or her to document details of the behaviour (e.g., day, time of day, circumstances, severity, etc.) to establish a detailed record of potentially detrimental actions. Perfectionistic characteristics witnessed by teachers may be an indication of a larger issue, such as those listed above, and the teacher will want to document perfectionistic as well as other behaviours and moods to assist with ascertaining the root of the perfectionism. If the teacher is concerned and a pattern of behaviour is evident, the next step would be to dialogue with the school's Special Education Resource Teacher (SERT) and the child's parents to determine whether or not an Individual Education Plan (IEP) may be useful. With SERT support, parent agreement, and administrative consent, an IEP can be developed with the goal of assisting the student to cope with concerning behaviours related to perfectionistic tendencies.

Strategies outlined for teachers to intervene with students include: building a supportive learning environment, establishing that mistakes are expected and common in learning, demonstrating that the teacher's goal is to promote learning, and explaining that perfectionism is sometimes counterproductive and that the teacher will assist when needed [65]. As noted in the literature review, males and females are similar in their reported perfectionism, so the following may be useful for both genders. Additionally, evidence indicates that anxiety regarding academia is a feature of those with perfectionism; therefore, the following strategies may assist to alleviate stress regarding academic performance. Finally, evidence demonstrates that the environment may impact perfectionism, and the suggestions below are designed to encourage students to view the classroom as an environment where mistakes are acceptable and a normal aspect of learning. Additionally, as noted, there has been some success using cognitive-behaviour approaches to address perfectionistic tendencies; therefore, strategies designed to alter detrimental thoughts and behaviours may be useful for a student. With parental approval, the following teacherstudent strategies may be implemented to alter the potential harmful perfectionistic behaviours, expectations, and responses demonstrated by a student. We do not suggest that all of these strategies should be undertaken; we simply provide examples of activities that we (1st and 3rd authors) have implemented to assist a student whose perfectionistic tendencies are causing distress.

7.1 Teacher-student coping strategies

- 1. Dialogue with the student and ascertain how they are feeling and why. Specifically, explore potential triggers that may bring on student anxiety regarding personal expectations and responses when failing to meet their standards. Student input and feedback is critically important, as it helps the child realize that how they are feeling is not being minimized [48]. Additionally, student input into curricular planning may result in the student assuming ownership of his or her learning.
- 2. Document discussions you have with the student, and help to develop and implement strategies that the child believes may assist him or her. Have the student chart his or her progress, as this will allow them to review details of when they were successful, and whether they need to alter behaviours/expectations. Additionally, students can review times when they overcame difficult situations, which may motivate them in the future. By discussing, charting, and reviewing progress, the student will be in a position to cope with and understand the complexities of their behaviour; this may also assist in

identifying the importance of incremental steps regarding altering behaviours and expectations [66].

- 3. It may be helpful for the teacher to assist the child with creating a brief checklist of their thoughts, feelings, and beliefs regarding expectations and coping. By regularly reviewing this checklist, the child may be able to indicate where they have improved and areas that may need more focus [48]. If the teacher is concerned about the impact of perfectionistic thoughts and behaviours on the child's daily functioning, or considers that the behaviours may be a symptom of an exceptionality, the teacher will want to refer the child for a psychological assessment, where standardized methods to assess perfectionism can be administered.
- 4. Have the student develop and maintain a reflective journal regarding stressors, feelings, and success strategies to cope with feelings of anxiety and frustration. This strategy addresses the provincial Language Arts curriculum, as it is a writing sample that can be tracked and assessed by the classroom teacher, as well as reviewed and used to reflect student behaviours. Students can also create their own cartoons for their journal entries, to explore major ideas and types of perfectionism that they may display in their day-to-day living [67].
- 5. Have the student research the topic of perfectionism (research is a curricular connection). By using the Internet, encyclopedias, or other sources of information related to the topic, the student could create a written report, or even a list of interesting facts about perfectionism. As a curricular connection, the student could be asked to demonstrate their understanding by summarizing important ideas and citing supporting details. Upon completion of the project, the student could orally share the information they found with their classmates, or develop an information booklet to share with others. This exercise will also provide the student with information on perfectionism that may assist them to recognize personal characteristics that could impact their daily activities.
- 6. The student can explore whether there are peer-aged student self-help groups for students like themselves (Facebook, blogs, etc.). Review the group together and aid the child in determining whether or not this is suitable. If they are comfortable in doing so, have the child join any available group (with parental permission and support) as a method of sharing their feelings. Memberships such as these may assist perfectionistic students with managing stressors, as well as demonstrate that others also have unrealistically high expectations of themselves. Through these groups, students with perfectionistic tendencies are also given an opportunity to hear about various coping strategies that have worked for others [50].
- 7. The student can also research applicable mood stabilizing activities; for example, methods of relaxation such as music, deep breathing exercises, and physical fitness. The teacher can assist the student in understanding how such activities can be beneficial for managing anxiety or frustration [68] that results from perfectionistic expectations.
- 8. It may also be helpful for the classroom teacher to introduce, via age appropriate biographies, famous people who have been impacted by, or benefitted from, extreme perfectionism (e.g., Mozart, Tesla, Henry Ford, etc.). Such an exploration may help the student contextualize perfectionism and understand how key historical figures successfully channeled their perfectionistic tendencies in a positive, productive manner.
- 9. It may be helpful for a student who succumbs to bouts of anxiety to be placed with a peer helper. A peer helper may assist a child when it is necessary; for example, the helper could reassure the child that their performance is satisfactory, as well as assist with focusing and setting realistic goals [50]. Of importance, the teachers should also ensure that the student does not rely on their peer helper to gage performance; instead the goal is for students to recognize whether or not their self-expectations are realistic.

10. It is important for a classroom teacher to be aware of strategies that may assist a student to cope with assessment stressors; for example, the child may benefit from quiet areas for tests/formal assessment, additional time for test-taking, alternative assessment measures such as oral examinations, cross-curricular assessment measures that may include the arts or drama. These initiatives may help a student manage any undue stress that may be impacting themselves and other students in the classroom.

The suggested measures listed and described here are intended to promote student risktaking and to reinforce the notion that mistakes are an integral part of learning. We reiterate that these strategies are suggested for perfectionistic students with no known exceptionalities. Instead, our suggestions are based on research, as well as on experience within the classroom and strategies we (1st and 3rd authors) have used to assist students who are academically impacted by their perfectionistic expectations. Ideally, the end result will be a student who channels or redirects negative feelings and unrealistic expectations into a positive and realistic framework.

8. CONCLUSIONS

Evidence regarding perfectionism indicates that both biology and environment are important factors to be cognizant of when a teacher recognizes students with these characteristics; additionally, perfectionism is reported to be stable, and evidence demonstrates that interventions are not overly successful in addressing issues of perfectionism. In other words, it is likely difficult to alter a student's perfectionistic characteristics. That said, if teachers are aware that: a perfectionistic student's parent may also have similar characteristics; the child may reside in an environment that supports and encourages perfectionism, and; perfectionism is not always detrimental, the teacher will be in a better position to assist a student whose perfectionistic thoughts and behaviours negatively impact the student. Lastly, regardless of the teacher's best efforts, there are some students who require additional support for perfectionism and, in these cases, the teacher will be a main ally and a source of information and support to those involved in assisting the student.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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