Academic Buoyancy and Resilience for Diverse Students Around the World

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RESEARCH BRIEF

This policy paper presents findings from a wide range of literature on academic resilience in primary and secondary education to help shape the approach schools can take to support diverse students. We focus on different types of challenges that students experience and the different aspects of academic buoyancy and resilience that shape students' ability to succeed despite the setbacks and adversity they face. In Part 1, we describe key insights from research on academic buoyancy and resilience. In Part 2, we present promising practices to improving students' academic resilience skills. In Part 3, we provide recommendations for International Baccalaureate (IB) stakeholders, meant to strengthen and reinforce the IB programme's potential to develop students with academic buoyancy and resilience.

WHAT IS SO IMPORTANT ABOUT HAVING ACADEMIC RESILIENCE?

Every student faces setbacks and challenges in school. Perhaps, a student forgets to study for a major test in science class. Will she be too overwhelmed with anxiety about the embarrassment and the threat to her term grade to approach her teacher for help? Or will she have the composure to relax her strong emotions and feel the confidence to address the mistake, set a goal, and make a plan to regain the grade she wants? Academic buoyancy is the ability to fail well, fail forward, and bounce back from the inevitable challenges experienced in school. Though everyone deals with setbacks, some students face much more serious adversity in their school experience. For many students, demands for academic resilience not only stem from school but also relate to challenges at home. Chronic underachievement, housing insecurity, stress from the traumas of poverty, biases of others, and other forms of inequity and oppression take a toll; academic resilience can play a major role in reaching goals successfully. Students may also take on serious academic challenges and face mounting stressors that demand different types of academic resilience. All students face challenges of some type and academic resilience plays a role in overcoming setbacks.

WHAT ROLE DO TEACHERS PLAY IN ACADEMIC RESILIENCE?

Modeling and messaging from teachers and peers foster academic buoyancy and resilience. Teachers can normalize the experience of mistakes and failure with stories of their own, anecdotes of others, and consistent encouragement. Teachers can practice skills with students to identify and manage difficult emotions and to make and execute plans to address challenges and overcome setbacks. Teachers can learn about the traumatic experiences students face in and out of school and gain an understanding about the toll of that trauma on

academic engagement. While holding high expectations, teachers can introduce strategies, such as mindful breathing exercises, to support those students, explicitly. In diverse classrooms, teachers can ensure that students from marginalized groups feel like they belong and are valued. Positive, consistent relationships unlock academic resilience for many students.

WHAT DOES THE RESEARCH TELL US?

We systematically collected research from 2000-2020 as a starting place for generating the main research insights presented in Part 1 and to identify the promising approaches presented in Part 2. Here are some of the key findings from Part 1.

- Resilience is an ordinary part of the process of human adaptation in the face of adversity and academic resilience draws on different aspects general resilience in life.
- Characteristics, such as self-efficacy and emotional regulation, contribute to academic resilience.
- Minor versus major adversity distinguishes the academic buoyancy needed to deal with small issues and the academic resilience necessary to withstand major challenges.
- How learners reframe negative emotional experiences is a key to unlocking resilience.
- Metacognition and self-regulating learning strategies are important for coping with mistakes to enhance students' tenacity and tolerance to negative situations.
- School climate based on trusting relationships, active listening, cultural responsiveness, and openness is key to supporting marginalized students facing the greatest adversity.

In summary, a growing body of research illustrates that academic buoyancy and resilience support students' healthy acceptance of and response to challenges in and out of school. Resilient learners have meaningful goals, manage their emotions when they experience setbacks, and accept what they can and cannot control in the learning experience. Academic resilience is built on individual characteristics—composure, confidence, coordination, commitment, and control. Those processes develop through strong relationships in school and explicit instruction, messaging, and modeling across learning environments.

WHAT DOES ACADEMIC BUOYANCY AND RESILIENCE LOOK LIKE IN PRACTICE?

Modeling academic resilience requires teachers to understand, embody, and communicate the experience of dealing with setbacks and failure. Teachers can illustrate adaptive responses to show how our mindset, ownership of mistakes, and ability to adjust our approach integrate to shape our resilience. Teachers can learn something new and challenging alongside their students and foster psychologically safe conditions for risk-taking. Managing

fear of failure and anxiety plays a role in shaping academic buoyancy, so developing students' emotional intelligence and ability to cope effectively with negative emotions is key. Over time, the intensity of the fear and anxiety lowers with active emotional coping. Schools around the world develop students' positive sense of self and well-being through mindfulness programs.

Goal-setting is also key to academic resilience and relevant to any learning environment. Goals are most likely to enhance commitment when they are specific, challenging, and co-generated with the learner. Students that feel autonomy will be more motivated to pursue goals. Teachers foster a sense of autonomy and control by centering on students' interests and preferences, letting students determine the learning pace and process, explaining the value of what they are learning, and remaining open to students' questions and opinions. Importantly, teachers can only facilitate a resilience-building learning environment if they are cared for by their school leaders and colleagues. Teachers need supportive relationships, skills for stress management, and training to become the best models of academic buoyancy and resilience for their students. Resilient teachers develop academically resilient students.

HOW DO GROWTH MINDSET, METACOGNITION, AND ACADEMIC RESILIENCE WORK TOGETHER?

Given the recent increase in attention around social and emotional learning in education, the IB commissioned three policy papers focused on key interrelated social and emotional learning topics that are most closely aligned to the work of IB: metacognition, growth mindset, and academic resilience. Research illustrates how these three factors work together in teaching and learning. Failure, setbacks, and mistakes are a natural and inevitable aspect of school and academic learning. Adaptive responses to the stress of setbacks draw on growth mindset thinking about ability, the metacognitive knowledge and skills to make adjustments and be strategic, and the academic resilience to persevere with confidence, composure, and control. Metacognition skills may be critical for learners to implement a growth mindset when stressed and to manage emotions when failure makes them want to quit.

When teachers message and model a growth mindset in the face of setbacks in their own learning, they illustrate a self-regulatory process that underpins the academic resilience students need in their own lives. Recognizing one's fixed mindset dialogue and adjusting to make room for growth mindset thinking is a metacognitive process that sets the stage for academic resilience. Goal-setting and consistent reflection on progress toward those goals are also important metacognitive processes that influence growth mindset and, in turn, academic resilience. Goals emphasize the link between effort, strategy, and progress in learning. Reciprocally, mindset beliefs and thinking will influence how teachers and students use metacognitive knowledge and skills. It is important to understand how these three factors of growth mindset, metacognition, and academic resilience interact in typical academic experiences across grade levels and content areas. They do not function in isolation.

WHAT DO WE RECOMMEND FOR INTERNATIONAL BACCALAUREATE STAKEHOLDERS?

Our recommendations build from research and practices to strengthen and reinforce IB's existing supports for the development of academic resilience in students.

1. Know The Adversity and Trauma Students (And Their Teachers) Face

To reframe student behavior and to highlight the positive emotions and power of trusting and caring relationships must begin with understanding the experiences and effects of trauma and adversity. Getting to know students personally and valuing who they are sets the conditions for a healing-centered learning environment, cultivates buoyancy and resilience, and focuses on strengths without reducing students to their trauma.

2. Teach Emotional Understanding and Regulation To All Students

Every program developed to support students' academic resilience includes some aspect of emotional regulation. Emotional regulation can have a wide array of benefits related to academic resilience, helping students adjust their response to stress, anxiety, and other negative emotions experienced regularly in school. Schools can adopt an existing program or adapt available exercises and routines for their classroom. It is important that teachers learn and practice emotional understanding and regulation alongside their students, at every grade level. Practices and routines that teachers incorporate into their lives become a model.

3. Identify The Needs And Culturally Adapt Programs To Fit

Emotional learning, mindfulness, and resilience-building programs are available for schools around the globe. Before adopting a program, schools need to give careful attention to adapting the approach to the local cultural context. School leaders, teachers, and parents/guardians should understand the unique needs of their students and adapt the messages, the models, and the modality of delivery to optimize relevance and representation.

4. Help Students Envision Their Future Self in and Beyond School

The practice of envisioning, setting, monitoring, and celebrating goals can play a critical role in academic resilience, especially for students from marginalized racial and ethnic backgrounds. Envisioning a future self and identifying goals and setbacks that are likely along the way can prepare students with strategies and provide a way for students to integrate their values and identities into the classroom experience. Schools can build this process into students' academic life at different levels and ask students to reflect on their progress, regularly.

5. *Track Students Academic Buoyancy Within and Across Classes*

Schools can use existing surveys to track students' academic buoyancy and other aspects related to academic resilience, such as supportive relationships, sense of control, and optimism. Beyond surveys, teachers can ask students to reflect on how they are adjusting and managing to stress in and out of school through quick daily check-ins. Teachers can also monitor for unhealthy and avoidant responses to setbacks, such as chronic absenteeism and procrastination.

6. *Students Should Practice Coping Strategies To Deal With Setbacks*

Students can use self-coaching statements, such as *You can do it,* and self-consequences, such as arranging rewards or punishments for reaching goals or not. Students need models of academic resilience in their lives and can seek them out, proactively. When faced with strong emotional responses, students can use emotion knowledge and regulation to manage them, rather than just venting to a friend or parent. Students can also become aware and metacognitive about patterns of avoidant or self-sabotaging behaviors that often arise when they face a setback. Habituating coping strategies is key to academic resilience.

CONCLUSION

Practices, policies, and programs to develop academic resilience fit well into existing aspects of IB, such as the IB learner profile, Universal Design for Learning, and IB approaches to learning, where learning to fail is an explicit aim. Recent research on practices and programs provide new opportunities for IB to ensure all IB students develop academic resilience skills to be successful in school. To develop academic resilient students begins with care and compassion and the recognition that it takes courage to face failure, bounce back, and take on new risks and challenges in the quest for learning and growth.

PART 1.
ACADEMIC BUOYANCY AND RESILIENCE FOR DIVERSE STUDENTS AROUND THE WORLD: LITERATURE REVIEW

1.1 INTRODUCTION

In the past two decades, researchers have begun looking at the other side of risk and failure in school through a lens of academic resilience, highlighting students' strengths to face and deal with adversity, large and small, and still reach success. This review provides an overview of recent research on how academic resilience takes shape and influences student learning and outcomes. Next, this review touches on school- and system-level supports and considerations to measure and track students' academic resilience. The review used a systematic literature search procedure to identify research and programs from around the world from 2000–2020 with the aim of understanding how academic resilience takes shape in student learning and what schools can do to support its development for students.

1.2 WHAT IS ACADEMIC RESILIENCE?

Finding 1. Resilience can be thought of as an ordinary part of the process of human adaptation, where adversity naturally brings out our strengths—academic resilience draws on different aspects general resilience in life.

Resilience describes the process of positive adaptation in the face of considerable adversity (Luthar, Cicchetti, & Becker, 2000). More recently, the idea of resilience has been defined as the ability "to bend but not break, bounce back, and perhaps even grow in the face of adverse life experiences" (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014, p. 2). In this way, adversity, tragedy, trauma, threats, significant stress, and other detrimental risks are seen as necessary conditions for resilience to emerge. In the school context, academic resilience emerges from facing adversity, overwhelming stress, threats to personal goals, and challenges faced at home—each influential on academic progress. While global educational research has focused most on the socioeconomic conditions that increase the likelihood for adversity, the strengths and conditions that lead to academic resilience are just as important for educators to grasp.

As the capacity to *fail well, fail forward*, and *fail often* and overcome different types of adversity that threaten one's educational progress and success (Cassidy, 2016), academic resilience has been used as the lens to

understand how and why some students still reach their goals even in the face of tough conditions in school and life (Agasisti, Avvisati, Borgonovi, & Longobardi, 2018). Academic resilience is the behavioral and attitudinal persistence that results from individual self-knowledge, self-regulation, and social skills. Those skills allow students to manage setbacks and challenges of different degrees of magnitude, from a poor grade on a high stakes test to chronic economic instability. Academic resilient behaviors and attitudes also result from the contextual variables of family and school climate, quality relationships, and meaningful role models. Some have proposed the individuals facing the greatest adversity are naturally the most resilient (Masten, 2011); and, yet, some students are able to deal with intense adversity in and out of school better than others. Research on academic resilience aims to understand how and why that happens with the hope of guiding the efforts schools can take to set the conditions and develop skills that foster academic resilience for all students.

1.3 MINOR VERSUS MAJOR ADVERSITY

Academic resilience is the process of positive adaptation in the face of considerable adversity—the capacity to *fail well*, *fail forward*, and *fail often*.

Academic resilience may arise in the face of stable factors that are outside of a person's control, such as socioeconomic marginalization or a learning disability, as well as challenges that naturally arise in the learning process, such as uncertainty about how to improve a grade. There is an important difference between major and minor adversity that learners confront in terms of the type of academic resilience demanded. Academic adversity and resilience can be internal for the learner. For instance, a student may experience test anxiety and find the capacity to regulate their emotions with deep breathing. Academic adversity and resilience can also be external in the system around the person—structural inequities that limit learning opportunities may be offset by family advocacy and support. **To learn about how academic resilience develops and affects learning, it is key to differentiate the magnitude of adversity.** Research in the past decade has begun that work.

ACADEMICALLY RESILIENT STUDENT PROFILE

Early research on resilient students found they typically hold high self-esteem, self-efficacy, and autonomy (Wang, Haertel, & Walberg, 1994), prepare for and engage in school learning (Finn & Rock, 1997), and carry strong interpersonal skills to engage with others (Benard, 1991). In the past two decades, psychological, affective, and motivational characteristics of academically resilient students have been studied with greater precision. That research has differentiated the personal factors from school-level and system-level factors. Recent studies have distinguished levels of academic resilience and magnitude of adversity and provided more specific recommendations to schools and educators. Research also highlights why academic resilience should be a prioritized.

1.4 WHY SHOULD ACADEMIC RESILIENCE MATTER TO STAKEHOLDERS?

Finding 2. Learners facing instability of poverty at home or chronic underachievement are likely to feel greater anxiety and fear in the face of seemingly small setbacks at school.

There is a healthy debate in the education field about how to foster academic resilience in learners. Some suggest that traits of academically resilient young people, such as positive self-esteem and sense of humor in the face of adversity, are functions of students' personality, and not factors that can be taught and developed. That angle focuses on providing a classroom climate for relationship-building and safety to take risks, fail, and bounce back (DiTullio, 2014). Others focus holistically on the undergirding and malleable dimensions of confidence, control, and emotional regulation in order to design an effective instructional approach (Martin, 2014). Still others focus on the varieties of stresses and strengths that students experience in an academic setting and highlight how the process of academic resilience depends on the students' cultural background and identity, school context, and relationships in and out of school (Graves, 2014).

Undoubtedly, **system-level policies, professional development opportunities, and the learning environment play a role in academic resilience**. To foster academic resilience, some focus on providing professional development and supports to understand how trauma affects learners (Jennings, 2018; Souers & Hall, 2016). Though some universal strategies may support the development of academic resilience of all students, students facing chronic or major adversity require even greater attention at the systems level. **For instance, learners facing the instability of poverty at home or chronic underachievement, due to learning disabilities or other challenges, are likely to feel greater anxiety and fear in the face of seemingly small setbacks at school.** Trusting relationships with teachers and consistent positive and encouraging modeling and messaging from adults will set the foundational psychological and emotional safety to take the kind of risks that are necessary to grow confidence and develop healthy coping strategies. Managing the powerful response of anxiety and related avoidant behaviors (e.g., chronic procrastination) will take explicit and consistent support across school faculty. It is difficult to develop that consistency and stability for students if high concentrations of poverty and adversity exist and teacher turnover is high. Across countries, system-level factors, such as teacher turnover, predicted which schools fostered more academically resilient students (Agasisti et al., 2018; Agasisti & Longobardi, 2017). We review reasons for how and why those conditions matter throughout this brief.

1.5 HOW DOES ACADEMIC RESILIENCE DEVELOP AND AFFECT LEARNING?

Finding 3. Student-level characteristics, such as self-efficacy, social competence, and optimism, distinguish more academically resilient students from their less resilient peers.

Classroom, school, and educational system factors matter for the development of academic resilience (Agasisti & Longobardi, 2017), but research is clear that student-level characteristics also distinguish more academically resilient students from their less resilient peers (Borman & Overman, 2004). When studied in the academic context, a broad array of personal characteristics relate to being resilient at school, including self-efficacy, social competence, acceptance of self and life circumstances, adaptability, problem-solving, sense of humor, optimism, high standards for oneself, and tenacity, among others (Cassidy, 2016). **The ability to tolerate negative emotions when facing stress and a belief that stress is part of growing also appear to be key** (Fried & Chapman, 2012). Each factor contributes to how a student adaptively faces adversity and still successfully reaches their goals in school.

HOW CAN UNDERLYING FACTORS OF RESILIENCE BE TAUGHT?

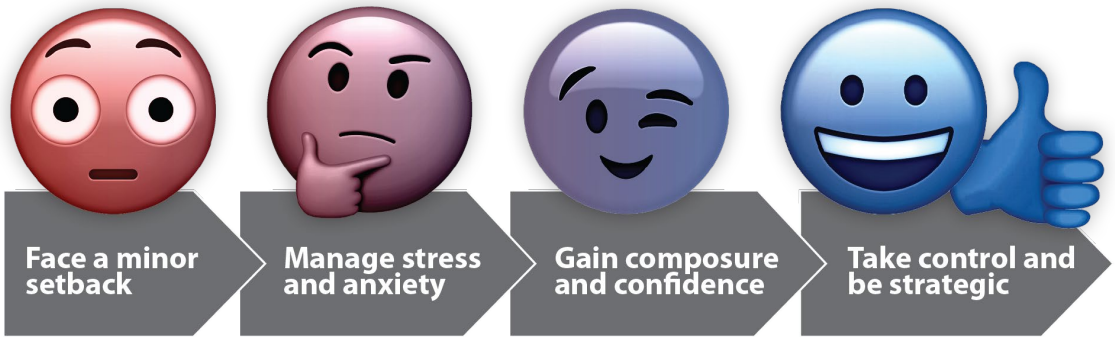
Finding 4. Much of the work on academic resilience does not clearly distinguish between the less severe adversity expected in everyday academic life and chronic adversity, such as the traumatic experience of poverty.

Researchers across the globe have tried to understand if and how these underlying factors of academic resilience can be taught. In Pakistan, researchers designed a program to cultivate positive self-beliefs, a sense of humor, optimism, and sense of purpose in high school students (Arif & Mirza, 2017; Mirza & Arif, 2018). In a U.S. school of predominantly students of Latin American descent, researchers culturally adapted a curriculum to teach emotional regulation, communication, goal-setting, problem-solving, and stress management to foster academic resilience (Ijadi-Maghsoodi et al., 2017). In Turkey, instead of focusing on the students, researchers targeted teachers' relationship-building and holding high expectations for all students as key factors of academic resilience (Gizir & Aydin, 2009). Much of this prior work does not clearly distinguish between the academic resilience needed to overcome less severe adversity expected in everyday academic life, and the academic resilience to deal with chronic adversity, such as the traumatic experience of poverty (Martin, 2013; Martin & Marsh, 2008). This distinction is important for researchers and educators to grasp. To recognize and support students who face major adversity and to support all students to be academically resilient to typical setbacks requires both distinct and overlapping strategies. The following sections elaborate on these strategies.

1.6 ACADEMIC BUOYANCY: EVERYDAY RESILIENCE TO SETBACKS IN LEARNING

Finding 5. Though academic buoyancy helps deal with the small issues, academic resilience is necessary to withstand major adversity in school.

Martin and Marsh (2008) clarified that *academic buoyancy* makes up the personal characteristics that shape resilience to everyday adversity in school, from minor negative interactions with teachers to dips in motivation. **Exerting academic buoyancy requires composure, stress and pressure management, and confidence on the part of learners** (Martin & Marsh, 2008). Whereas academic buoyancy deals with minor setbacks, academic resilience, on the other hand, is relevant to majorly adverse experiences such as challenges at home or in the community, chronic underachievement, chronic self-handicapping behaviors, and natural disasters, such as school closures due to the COVID-19 pandemic. To consider the development of a learners' academic resilience, starting with academic buoyancy is key. Clarifying how these two levels of resilience work, Martin (2013) found that academic buoyancy had a direct, positive influence on low-level negative outcomes, such as anxiety and uncertain control in academic performance. However, the role of academic buoyancy to reduce high-level negative outcomes of self-handicapping and disengagement in school was completely explained by students' academic resilience.

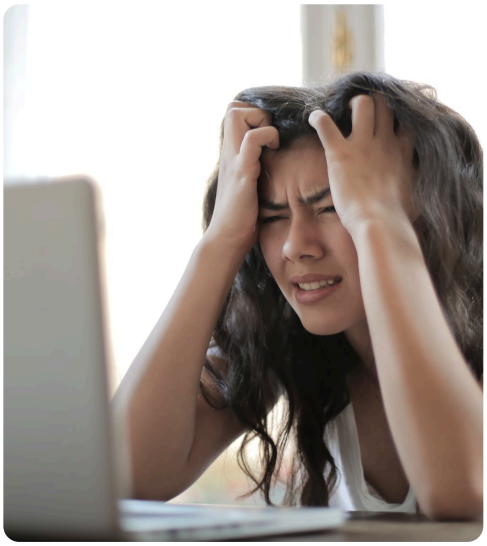


Finding 6. Higher levels of academic buoyancy helped lower students' academic anxiety, failure avoidance, and lack of control in academic performance.

Though research on academic buoyancy is relatively new, several important findings can help us understand how it takes shape and affects the learning process. Across one year of secondary school for a sample of Australian students, academic buoyancy and psychological risk factors influenced each other (Martin, Ginns, Brackett, Malmberg, & Hall, 2013). **Higher levels of academic buoyancy lowered students' academic anxiety, failure avoidance, and lack of control in academic performance**. Reciprocally, higher levels of anxiety and uncertain control contributed to lower levels of academic buoyancy. Higher emotional instability and neuroticism, in

general, deteriorated academic buoyancy. The big takeaway is that regulating emotions and managing perfectionism are important for everyday academic resilience in school.

Finding 7. Academic buoyancy linked to lower levels of test anxiety for a sample of high school students from England.



Another study found that **academic buoyancy linked to lower levels of test anxiety** for a sample of secondary school students from England (Putwain, Connors, Symes, & Douglas-Osborn, 2012). However, academic buoyancy was distinct from some coping strategies students used, such as preparing oneself mentally for the test and seeking social support. Academic buoyancy had the strongest relationship to lower levels of emotional and physiological dimensions of anxiety—feelings of tension and bodily symptoms—but it also linked to lower levels of worry and distracting thoughts, such as thinking about failing. Additionally, anxiety played the strongest predictive negative role in a longitudinal study on academic buoyancy (Martin, Colmar, Davey, & Marsh, 2010). In sum, worry, dread, and the bodily experience of stress and anxiety have a strong impact on the motivation and strategies to respond well to setbacks. Fortunately, research has found emotional regulation, such as self-coaching statements (*You can do it!)* and stress reduction, such as deep breathing, foster academic resilience (Fried & Chapman, 2012).

Finding 8. Academic buoyancy may lead students to different kinds of appraisal. How learners cope with and reframe negative emotional experiences, such as anxiety and failure avoidance, is a key that unlocks their academic resilience (Meneghel, Martínez, Salanova, & Witte, 2019).

Academically buoyant students likely read setbacks as a challenge rather than as a threat to self-worth, confidence, and purpose. An approach that reframes and looks for solutions to the problem is more productive than emotional venting. **The level of threat experienced is not equal for all students, though.** In many educational settings, some students experience marginalization due to biases about their ability, language, gender, sexual identity, economic resources, culture, and ethnicity. Those students face a range of threats from stereotypes and lower expectations to explicit harassment. Having a strong sense of self and identity in that challenging school context comes from both personal strengths and social supports (Graves, 2014; Hertel & Kincaid, 2017).

In one study, academic buoyancy appeared to have a stronger effect for students with attention deficit/hyperactivity disorder (ADHD) than for students without ADHD (Martin, 2014). Another study highlighted the dynamic racial identity strengths of academically resilient African American students, who drew on many different types of coping strategies to maneuver through everyday challenges. For instance, some of these immediate coping strategies included choosing to learn about one's racial/ethnic histories and contemporary circumstances when opportunities arose in class and carefully considering which social circles to engage with at school. **Students' strong racial identities buttressed their resilience to accumulating stress from confronting the unwelcoming white culture of U.S. high schools** (Graves, 2014). Research on academic resilience illustrates how students more at-risk for adversity may benefit most from developing buoyancy to everyday challenges. They may also be more resilient from the onset. In other words, students facing major adversity develop a thick skin, or toughness, for deflecting stressors that may bend, or challenge them, but do not break them.

Finding 9. In sum, recent research demonstrates that academic buoyancy is a promising way to conceptualize the academic resilience that all students face, to some degree, in everyday adversity and challenges in learning.

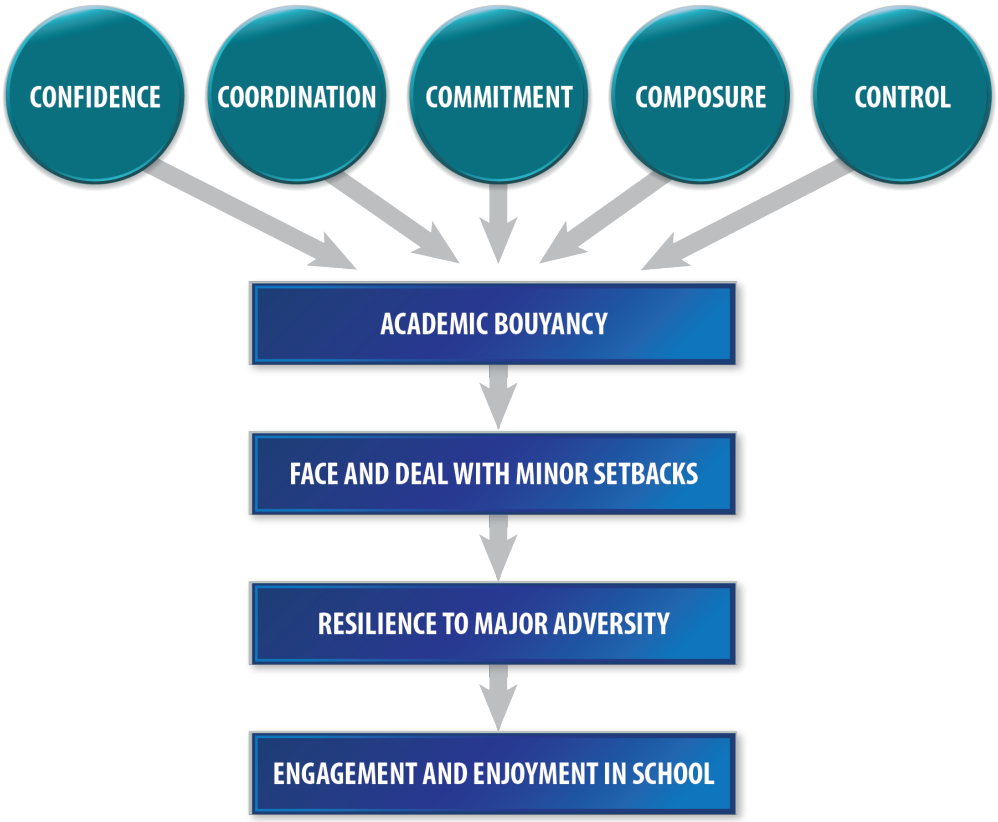
When students confront negative setbacks ubiquitous to school learning, academic buoyancy cushions the blow and triggers a bounce to recovery. With its own set of coping strategies, discussed in Part 2, academic buoyancy helps to reduce the power that anxiety and stress exerts on learners. Academic buoyancy also plays a role in resisting ineffective responses to fear and stress, such as failure avoidance, uncertain control, emotional instability, and neuroticism. Research on academic buoyancy is still new and less is understood about the environmental and instructional influences and coping strategies that support academic buoyancy.

1.7 HOW ACADEMIC RESILIENCE DEVELOPS AND AFFECTS LEARNING OUTCOMES

As an everyday form of academic resilience, academic buoyancy appears to develop and affect learning for secondary school-aged students through a variety of adaptive behaviors in school that are prime opportunities for explicit instruction, messaging, and modeling (Martin et al., 2010; Martin & Marsh, 2006). Martin and Marsh (2006) proposed the 5-C model and demonstrated that the five components contribute to the development of academic buoyancy and resilience across time (Martin et al., 2010). **The 5Cs include development of *confidence*, *coordination* and planning, *commitment* and persistence, *composure* to negative affect, and *control* in learning.** When included together as underlying factors of academic resilience, this 5C model explains differences in student engagement, enjoyment, and self-esteem. Those components also explained more than half of the change in academic buoyancy students experienced across a year of high school.

Finding 10. Developing self-regulating learning strategies to cope with mistakes can enhance students' tenacity and tolerance to negative situations (Artuch-Garde et al., 2017).

The 5C components are motivational factors that serve as focal points of support in the classroom, as we discuss further in Part 2 of this Policy Paper. For instance, developing **self-regulating learning strategies to deal with mistakes can enhance students' tenacity and tolerance to negative situations** (Artuch-Garde et al., 2017). The self-regulating strategy of using self-consequences by arranging or imagining rewards or punishments for failure or success predicted the resilience to pursue college after secondary school for Italian students (Nota, Soresi, & Zimmerman, 2004) and contributed to the competence and social bonding underlying middle level school students' academic resilience (Fried & Chapman, 2012). Elementary school students in Ireland linked academic buoyancy and resilience more broadly to a general state of well-being (Miller, Connolly, & Maguire, 2013). Across models, there is a consistent relationship between academic buoyancy and resilience and students' enjoyment, participation, and achievement in school.



Finding 11. Adaptability and academic buoyancy contributed to motivation, engagement, enjoyment, and future plans in education.

Having the ability to successfully deal with everyday academic adversity as well as more major forms of adversity is distinct from adaptability—the capacity to respond well and adjust to change, different circumstances, or different people (Martin, Yu, Ginns, & Papworth, 2017). When studied across contexts, **both adaptability and academic buoyancy contributed to motivation, engagement, enjoyment, and future plans in education**. Generally speaking, these effects were larger for Chinese adolescents than for their U.S. and U.K. peers. The high stakes educational environment experienced by Chinese students could explain part of this difference. Similarly, research showed parity in adaptive motivation, engagement, and academic buoyancy between Aboriginal and non-Aboriginal students in Australia. However, Aboriginal students faced higher levels of key motivational and emotional challenges, specifically uncertain control, anxiety, and failure avoidance in school (Martin, Ginns, Papworth, & Nejad, 2013). Academic buoyancy and resilience may be similar for students facing more marginalization and adversity, but the stressors experienced are more demanding and costly.

Finding 12. Students' identity and orientation to the future is a foundational driver of motivation and resilience

For racially and ethnically diverse students in marginalizing educational settings, such as the United States or the European Union, research has identified additional personal characteristics that contribute to academic resilience, such as trust, autonomy, initiative, hard work, and identity (Morales, 2008, 2010). **Indeed, students' identity and orientation to the future is a foundational driver of motivation and resilience** (Oyserman & Destin, 2010), especially for students from marginalized cultural and ethnic groups. For students in socio-economic circumstances furthest from opportunity, academic resilience also develops from a self-transcendent purpose and pride for one's family or community, undergirding a particular passion or pursuit (Morales, 2010). This collectivist orientation for students from marginalized communities is an especially important cultural distinction for schools to grasp when it comes to recognizing students' strengths for academic resilience.

1.8 THE ROLE OF EDUCATIONAL SYSTEMS

Within the constellation of academic resilience, individual factors play an important role, but system-level factors are also key to promoting students' recovery from struggle. For instance, when struggling learners had academic and family support, they demonstrated better levels of academic buoyancy. Struggling learners who lacked either form of support had much lower levels of academic buoyancy (Collie et al., 2017). Students who consistently encounter struggle can be supported by helping them recognize challenges and seeking out supportive peers, teachers, or additional resources. Supports play different roles in the development of academic resilience depending on the cultural context for students. For instance, Morales (2010) interviewed 50 students of color from socioeconomically challenged urban backgrounds whose academic resilience carried them successfully to university. Morales found that supportive, mentoring staff in high school helped to frame academic success as

pragmatic and utilitarian to help avoid the process of cultural inversion, where the goals and values held by the dominant culture are outright rejected by a subordinate group. For racial, ethnic, and cultural minority students to develop academic resilience may require intentional alignment of their academic pursuits with their identity, purpose, values, and culture.

Finding 13. Developing a school and classroom climate based on trusting relationships, active listening, cultural responsiveness, and openness to different perspectives may be especially important to racially and ethnically diverse students facing social and emotional adversity (DiTullio, 2014; Hammond, 2015).

Students from marginalized culture and language groups experience a range of stressors and setbacks beyond academics. For instance, recent immigrants and racial and ethnic minority students experienced school-based ethnicity-related pressure and micro-aggressions and a lack of authentic representation of their identities and cultures in different global learning environments (Anagnostaki, Pavlopoulos, Obradović, Masten, & Motti-Stefanidi, 2016; Graves, 2014). **Creating a psychologically and emotionally safe environment to be oneself, take reasonable risks, and fail well lays the foundation for trust and support.** Not surprisingly, Agasisti et al. (2018) found a positive and supportive school climate to be the most consistent distinguishing factor for fostering resilient learners across countries participating in the Programme for International Student Assessment.

Social support for academic resilience goes beyond feeling a sense of relatedness to others and support from teachers, peers, and family. Influential people in the lives of students can serve as models and messengers of influence and can directly affect students' use of strategies in the face of adversity. Words of encouragement are helpful but providing (or serving as) models of resilience can be even more important (Johnson, Taasoobshirazi, Kestler, & Cordova, 2015). When a learner identifies closely with a role model who successfully faces a setback, the learners' own confidence gets a boost to endure setbacks and persist.

1.9 HOW CAN SCHOOLS MEASURE AND TRACK DEVELOPMENT OF ACADEMIC RESILIENCE?

Research considers students to be academically buoyant if they face typical setbacks and still reach their goals. Students are academically resilient if they do well despite facing major adversity in or out of school. Academic resilient attitude and behaviors build on academic buoyancy. To gauge the development of academic resilience, researchers have used two main approaches. The first approach is variable-centered and uses common risk factors as predictors, such as socio-economic status, alongside common outcomes of success, such as academic proficiency or postsecondary enrollment. That approach sets specific thresholds of adversity and success to

conduct quantitative analyses. For instance, in the most recent international comparison research conducted by the Organisation for Economic Co-operation and Development (OECD), researchers labeled students who were among the 25% most socio-economically disadvantaged as facing the most adversity. To be identified as resilient, those students needed to reach Level 3 (the readiness threshold for future success) on assessments in reading, mathematics, and science. Being resilient across the school context to achieve in all three domains aimed to distinguish excellence in a single domain (Agasisti et al., 2018). Variable-centered approaches have been used to understand international comparisons and systems-level factors that appear to support resilience. The second approach is person-centered and applies interdisciplinary perspectives and methods. The person-centered approach uses self-report measures and interviews to approximate the motivational, psychological, social, emotional, and cultural dimensions that work together to support students' academic buoyancy and resilience. Educators, schools, and systems can use both approaches, depending on the aims.

PERSON-CENTERED APPROACH

The Academic Buoyancy Scale (ABS; Martin & Marsh, 2009) is made up of four items using a Likert scale for agreement or disagreement and has been applied in a variety of international contexts at the secondary school level and higher. The ABS has demonstrated strong psychometric properties in different languages (see Datu & Yang, 2018 for Filipino version) to distinguish students who are more likely to be motivated, engaged, and successful in school. The Academic Resilience Scale (ARS; Cassidy, 2016) is another scale developed to gauge students' perseverance, ability to reflect and seek help, and negative affect and emotional response in the face of an adverse academic experience. In a vignette, the ARS asks students to imagine themselves experiencing an academic setback. Next, they respond to 30 items about how likely or unlikely they are to respond a certain way.

A third scale is similar to others from the field of youth development and well-being, taking a comprehensive approach to both external and internal assets and protective factors that develop students' academic resilience. Focused mostly on general resilience, the Healthy Kids Resilience Assessment (Constantine, Benard, & Diaz, 1999) includes 60 items using a self-report Likert scale to gauge students' (a) caring relationships, (b) experience of high expectations in social networks, (c) meaningful participation in and out of school, (d) social competence, (e) autonomy and sense of self, and (f) sense of hope and purpose. The various person-centered approaches can help educators identify students or entire cohorts of students who may need support in developing strategies, such as planning or emotion

regulation, or who need greater support from adults in school. These scales can help schools gauge progress based on specific efforts or interventions.

VARIABLE-CENTERED APPROACH

Whereas the person-centered approach can provide precision, the variable-centered approach can help answer questions about systems-level policies, structures, or comparisons. If certain characteristics of students are known to increase the risk for adversity, trauma, and stress, the variable-centered approach can provide an initial screening for administrators, teachers, and counselors or identify schools or regions that may need greater support. For instance, schools can use the readily available scale for Adverse Childhood Experiences (ACE)[1] to understand the level of trauma students have experienced. Naturally, this approach can unwittingly reduce students to their trauma and deficits, so schools must take care to understand students' existing strengths, supports, and resilience alongside their risk for adversity. By integrating a person-centered and variable-centered approach informed by the cultural context of the school and students' families, educational leaders and researchers are most likely to produce the most meaningful and theoretically sound information about students' risk to adversity and development of academic resilience.

1.10 CONCLUSION

Academic buoyancy and resilience describe a key concept for schools, parents, educators, and students to understand and employ in everyday teaching and learning. Academic buoyancy and resilience can be reliably measured, tracked, and studied based on key components, antecedent coping strategies, and outcomes of success. The ability to understand, manage, and reframe negative emotions experienced due to setbacks and stress, both big and small, appears to be key to academic buoyancy and resilience. And, yet, a stable system of supportive and encouraging models and messengers is just as important as those person-level factors. The next section describes available practices and programs for schools, educators, and parents/guardians to support the development of academic buoyancy and resilience. However, most of those research-based programs have emerged from Eurocentric cultural environments and need careful cultural adaptation before adoption.

[1] The ACE scale can be found here https://acestoohigh.com/got-your-ace-score/

PART 2:
ACADEMIC BUOYANCY AND RESILIENCE IN ACTION: POLICIES, PRACTICES, AND PROGRAMS

POLICY LEVEL CONCERNS AND RECOMMENDATIONS

Although research on academic resilience has a rather long history, the global and national educational policies promoting academic resilience are still limited to specific student groups or in relation to crisis or traumatic events that students may encounter. At the international level, consistent research and policies have typically addressed academic resilience as a means to close the gap in quality and equity of the educational systems for students with low socio-economic status, students coming from a migrant background, or students with disabilities.

- OECD extensively has studied academic resilience defined as the ability of 15-year-old students from disadvantaged backgrounds to perform at a certain level in the Programme for International Student Assessment in reading, mathematics and science. According to OECD, resilience can be considered as a synthetic indicator to compare education systems on two crucial goals: equity and quality.
- The European Commission has also been interested in studying and providing policy recommendations for students from migrant backgrounds across all the EU countries. Several policies have been in place as a reference for various educational systems.
- As nations have been facing major adversity such as school closure due to climate or natural disasters, and the unprecedented COVID-19 pandemic, there has been a call for a policy-driven approach to support the academic resilience of students, families, and educational systems, as a whole. International Organizations, such as UNESCO, World Bank, or UNICEF, have consistently provided guidance for states to foster resilience among students, teachers, and parents during periods of intense adversity.

In a cross-national national study, academic resiliency supportive schools appeared to share certain characteristics across international settings (Agasisti & Longobardi, 2017), suggesting several policy implications.

- Students should have opportunities to engage in extra-curricular activities.
- School leaders should engage in transformative leadership to ensure a safe and supportive school climate.
- Teachers should build strong relationship with each other and with students.
- Students should experience consistency with low staff turnover of teachers.

- Teachers should not suffer from burnout and stress.

The following sections lay out policy and practice examples to accomplish those goals. When policies segregate students based on socio-economic privilege and racial-ethnic marginalization, schools struggle to produce resilient students. When probing the practices for academic buoyancy and resilience other policy issues arise. Teachers and administrators must receive training on the latest research and practice related to the effects of trauma on student behavior and learning. They must adopt the kinds of practices discussed in the following sections that can address those effects of trauma and build academic buoyancy and resilience skills in students.

School leaders can ensure that teachers experience training on how to develop their own knowledge and skills for emotion regulation and stress management to ensure they are prepared for the challenges of their work and can model effective strategies for their students. Certain systemic approaches to evaluating and disciplining students may be counterproductive to resilience. For instance, high stakes academic situations that don't allow students to learn from their mistakes, improve their approach, complete multiple drafts, and get validation of that growth may make buoyancy feel out-of-reach. Additionally, zero tolerance disciplinary policies eliminate opportunity for restoring relationships and bouncing back from mistakes, and they often affect students already facing the most adversity, discrimination, and marginalization. How schools message expectations for postsecondary education across grade levels can also play a role in what kind of future self students envision, especially first-generation students pursuing education beyond the compulsory level.

CONCERNS AND RECOMMENDATIONS FOR PRACTICES IN SCHOOLS

At the international level, policies have begun to address academic resilience by preparing students to overcome adversity through social and emotional skills development and overall well-being. To identify school, family, and personal factors that relate to academically resilient behavior of students, cross-national studies have explored factors beyond socio-economic disadvantage, vulnerability, or risk that influence academic resilience. For instance, one study estimated that investing in programs to develop social-emotional skills can be an effective and economical approach to healthy student development, including aspects related to academic resilience (Belfield et al., 2015). It is clear that school practices and programs play a huge role in students' academic resilience. Therefore, most of the policy recommendations reviewed below focus on practices of teachers and parents, integrated within the specific cultural context of the school community.

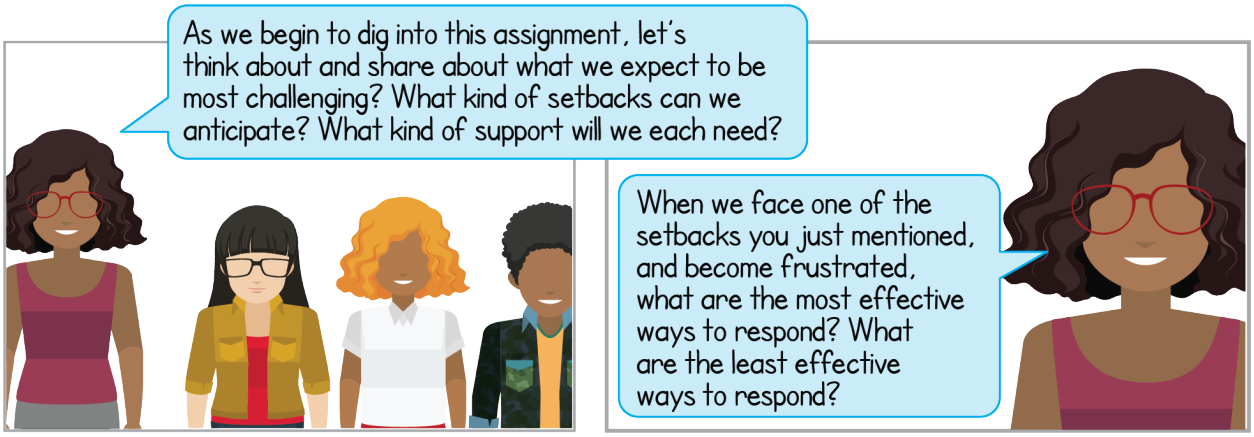
Practices at the schoolwide and classroom levels must aim to accomplish two goals:

a) support all students to learn how to be academically buoyant and fail well, and
b) ensure students facing the greatest risk for major adversity feel supported and develop the resources for resilience in their academic experiences.

The interplay of challenges experienced both in and out of school for some students is impossible to separate. The importance of modeling and messaging in a range of forms means that teachers and other school professionals need to understand, embody, and communicate academic resilience, as well. Additionally, one way to consider supporting academic buoyancy is to look at classroom practices that drive the development of the 5Cs for academic buoyancy and resilience: composure, confidence, coordination, commitment, and control (Martin et al., 2010). Specific implications for practice emerge from understanding these underlying factors. This section covers explicit practices and program examples that teach and nurture academic resilience and develop relevant coping strategies, self-beliefs, and adaptive orientations to school life. To date, these practices have been relatively small-scale and have not been implemented at the level of a national or global system.

PROMISING PRACTICE 1. EXAMPLES AND NON-EXAMPLES OF ACADEMIC BUOYANCY AND RESILIENCE

Learning Context: A teacher assigns middle level students a paper assignment on the history of global pandemics in a science course. In a 10-minute presentation, students are to (a) briefly describe the science behind how some diseases spread so quickly using a pandemic from the past 150 years as an example, (b) how the scientific community responds to these crises, and (c) what the scientific community recommends today to stop the COVID-19 pandemic and why.



One of the most important aspects of becoming buoyant in the face of academic setbacks is to learn explicitly about both exemplar healthy responses and unhealthy ways to respond to failure (International Baccalaureate, 2013; King, 2009). Teachers can make their classrooms feel like a safe place to take risks and fail for students. A healthy response to failure includes (a) finding the facts; (b) taking responsibility for one's actions and choices; (c) making changes to process or strategy; and (d) trying again and monitoring for improvements.

Examples of adaptive responses to failure illustrate the integration of a growth mindset, the confidence to accept ownership for mistakes, and the metacognitive knowledge and skills to adjust the approach to the specific challenge or setback. Setbacks are inevitable, so learners must become equipped with a growth mindset. They must be supported to use their metacognitive skills to self-reflect, express, and regulate their emotional response. With those pieces in place, they can reset their plan, regain their confidence, and find their path to reach their goals. Learners need to develop their awareness about these internal processes. They also need support to acknowledge them in order to cement understanding and feel validated.

A healthy response to failure:

- find the facts
- take responsibility
- make changes
- try again and monitor for improvements.

Concept attainment is an important practice to enhance learners' comprehension of abstract ideas, such as academic resilience (Boulware & Crow, 2008). Concept attainment targets the meaning and understanding of a concept—*the big idea*—beyond its label or narrow definition. The technique presents learners with examples and non-examples of the concept alongside the way that it operates in the world, providing time and space to use inductive reasoning to generalize to other contexts. For students to learn about a healthy approach to accepting, facing, and overcoming setbacks, teachers can explicitly instruct students on resilient responses, such as taking ownership of mistakes, and unhealthy responses, such as avoidance. Students are able to understand what to look for in their own response to setbacks and identify and disrupt unhealthy patterns, early. When a setback or failure seems probable, an unhealthy response leads to a focus on behavioral excuses rather than thinking about plans and strategies.

- Students can find examples from their own lives or observations of others. Together, teachers and students can illustrate examples of healthy resilient responses and contrasting non-examples.
- Teachers can ask students to reflect on situations when they have responded both positively and negatively to think about the actions and outcomes that resulted.
- Teachers can use the power of stories from their own lives or the lives of other role models to illustrate what adversity and resilience feels and looks like in action.

PROMISING PRACTICE 2. MODELING HOW TO FAIL WELL AND FAIL OFTEN

Seeing models of resilience in the influential people around them appears to be highly salient for learners developing academic resilience (Johnson et al., 2015). Teachers and other school personnel can create a variety of vicarious experiences of resilience for their students. **For instance, educators in later grades can learn**

something new and challenging alongside their students to foster psychologically safe conditions for risk-taking. In fact, when middle-level students reflected on their experience doing complex arts integrated learning in their content-area classes, their teachers' hands-on involvement was key. Students said their teachers' artistic risk-taking in art forms that were new to them helped students feel safe to take their own creative risks (Anderson, Haney, Pitts, Porter, & Bousselot, 2019). **Modeling resilience should demonstrate persevering through obstacles, remaining optimistic in the face of setbacks, and remaining committed to reaching a goal.**

Creating opportunities for students to hear from near-peer students, who are close in age, can also be effective. One program, called My STEM Story matches high school students of color with near-peer undergraduate students of color in science pathways to discuss stories of adversity and resilience[2]. Videographers create videos of their interactions highlighting the stories and strategies they employ to pursue their passion and purpose in science, regardless of the adversity and biases they may face. For students marginalized due to socioeconomic factors such as race, ethnicity, culture, or poverty, it may be key for adult or near-peer models of academic resilience share some identity characteristics with students, otherwise vicarious experience may not feel relevant. Though modeling academically resilient behaviors, attitudes, and mindsets should be a vital and accessible aspect for teachers, parents, and schools to consider, practices to develop skills, understanding, and strategies are equally important.

A Program Example:
My STEM Story

Video-based stories of how students become passionate about science and overcome roadblocks they face along their science pathway.

PROMISING PRACTICE 3. PRACTICES TO REDUCE ANXIETY AND ENHANCE COMPOSURE

There are a number of practices that can teach students how to effectively cope with circumstances that raise anxiety and fears of failure.

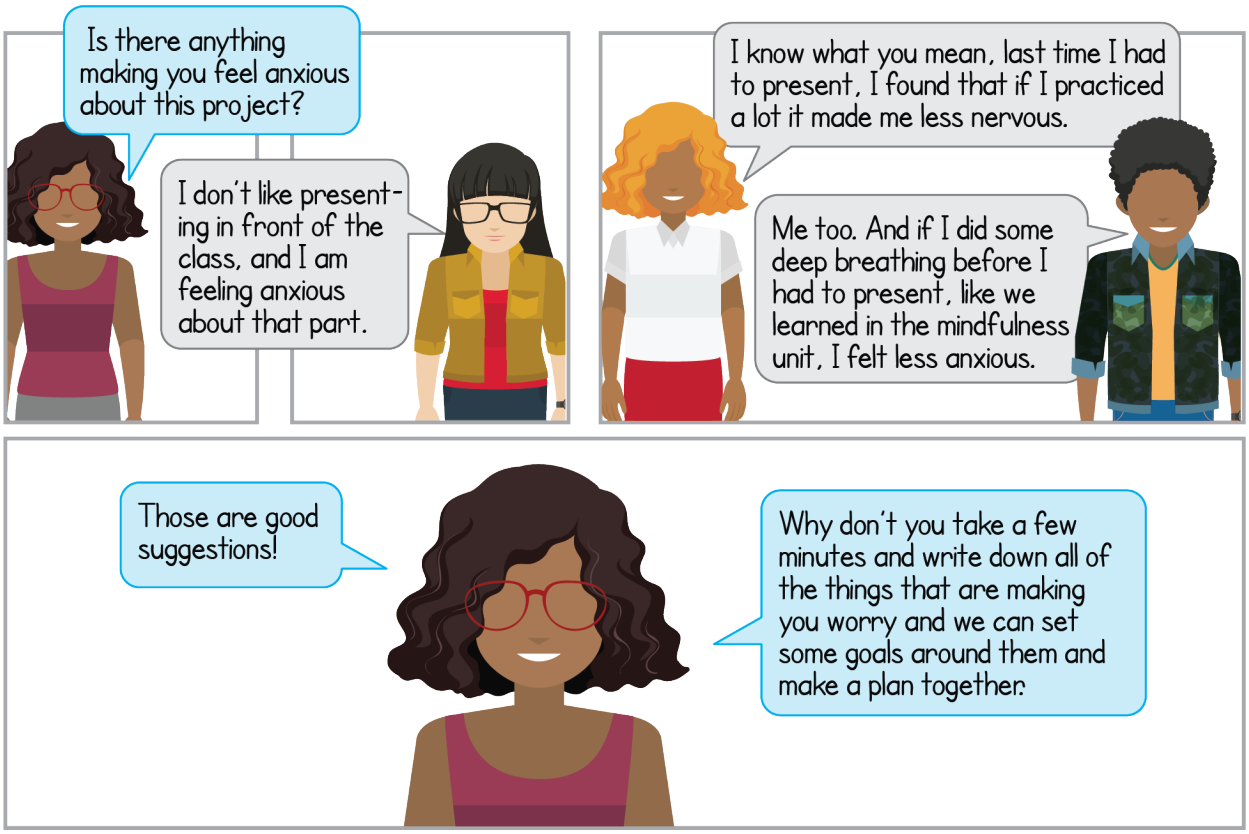
EMOTION-FOCUSED COPING

Emotion-focused coping aims to regulate distress and negative emotions rather than changing the events that caused the stress. Positive emotions are often experienced alongside negative emotions during intense stress, so *meaning-focused coping* provides an important route for people to make sense of their experiences in light of a

[2] See this video for more information https://stemforall2020.videohall.com/presentations/1694

potentially positive outcome, such as personal growth (Meneghel et al., 2019). Emotion-focused coping that only results in venting or seeking social support may be too limited to enhance academic resilience. Teachers can show students how to address their fear or failure when it becomes overpowering or paralyzing. **They can promote a classroom climate focused on individual improvement that *expects, respects, and inspects mistakes*—looking intently for the opportunity to learn and grow.** Students need to see examples and modeling from teachers, peers, and role models to understand that mistakes are springboards for growth not diagnostic indicators of students' worth or ability. For those with high levels of anxiety, fear, or traumatic experiences, in-depth training and practice are necessary to enact the long-term change in the nervous system that results in a resilient response (Tabibnia & Radecki, 2018).

Learning Context: As students begin to conduct research and build their presentation on the science of pandemics, teacher asks them to reflect again on how they are feeling about their work and the challenges ahead.



Environments that stress competition, ranking, and performance can enhance fears of failure and avoidance. Environments that stress individual growth, learning, cooperation, and improvement can enhance motivation toward mastery. Students will cope with those stressors *actively*, such as with deep breaths or positive self-talk, or *passively*, such as by skipping class. **When facing anxieties in school, if students employ active emotional**

coping often, neural pathways are strengthened to reduce the intensity of the anxiety and fear in future situations (Tabibnia & Radecki, 2018). Importantly, school personnel can employ mindfulness and relaxation practices that help students focus on their physiological response to anxiety and stress. Teachers can scaffold preparation for high pressure situations in school such as an exam or oral presentation. Counselors, advisors, coaches, teachers, and administrators are each positioned well to help students identify the stressors and anxieties that follow challenges and adversities in and out of school. Sometimes, just the opportunity to name, write, or talk expressively about anxieties can reduce its overpowering effects and increase composure.

EXPRESSIVE AND REFLECTIVE WRITING

Mathematics anxiety can become a devastating reality for students during childhood and into adolescence and adulthood. Just the anticipation and dread of doing mathematics can cause pain and anxiety in people (Lyons & Beilock, 2012). **Research into this condition illustrates that expressive and reflective writing can enhance students' resilience to perform well on tests** (Park, Ramirez, & Beilock, 2014). Additionally, interventions to decrease the negative effects of mathematics anxiety should emphasize learning how to manage and control the emotional response rather than just additional training in mathematics (Lyons & Beilock, 2012). Helping students develop their composure in the face of the intense negative, emotional response of anxiety begins by understanding what the anxieties are and then developing skills to manage them. One program for middle level school students, *Math Anxiety Monsters*[3], uses the metaphorical and sculptural process of imagining and recreating anxiety as a monster before developing the story of how they overcome the monster. Given that emotional venting and social support are not effective coping strategies for academic resilience on their own (Meneghel et al., 2019), developing an understanding of the emotional experience and a story to reframe the challenge may be key components to a successful approach.

A Program Example:
Math Anxiety Monsters

Using arts integration techniques, students imagine their mathematics anxiety as a sculptural monster and describe how they will overcome their anxiety when facing hard problems in the future.

PROMISING PRACTICE 4. TEACHING THE WHAT AND HOW OF EMOTIONAL REGULATION: A PROGRAM EXAMPLE

[3] More information about Math Anxiety Monsters can be found at http://www.artcorelearning.org/modules-math-anxiety-monsters

The RULER program[4] was designed by researchers at the Yale Center for Emotional Intelligence as a way for schools to explicitly teach students to recognize, understand, and manage emotions in learning. RULER stands for the five skills of *emotional intelligence:* Recognizing, Understanding, Labeling, Expressing, and Regulating (Brackett, Rivers, Reyes, & Salovey, 2012; Nathanson, Rivers, Flynn, & Brackett, 2016). The program has been implemented in several countries and continues to expand its reach. **Given the overarching influence of managing fear of failure and anxiety in academic buoyancy (Martin et al., 2010), developing students' emotional intelligence (EI) is likely a key step.** Research demonstrates that RULER can enhance students' social and emotional competencies and academic achievement. The RULER program accomplishes those aims by

- supporting schools to integrate EI skills into everyday classroom and school routines;
- teaching emotion-related vocabulary and concepts;
- using an emotion-integrated K-8 classroom teaching approach;
- implementing advanced EI courses for high school students; and
- providing resources for families to develop social and emotional skills at home.

A Program Example:
RULER Emotional Learning

The program provides curriculum and tools for teachers to use with kids across K-12 grade levels to develop knowledge and skills related to emotion regulation in learning.

Core Classroom Tools and Routines. A simple, core tool used in the RULER program is called the *Mood Meter*—a four-quadrant grid that includes the type of emotions on the X-axis from *unpleasant to pleasant* and the level of intensity on the Y-axis from *low- to high-energy* (Nathanson et al., 2016). Classrooms with older students use this tool to identify how they feel using numbers of the grid and feeling words, such as "peaceful." Classrooms with younger students describe their feelings using colors for each quadrant and a feeling word, such as "anxious" or "calm." **Asking students of all ages to describe how they are feeling at different times in the day can become an easy routine to build self-awareness and understanding of their emotions.** One U.S. elementary school teacher uses different colored wristbands that students can change, independently, whenever their emotional state shifts.[5] In RULER, as students add feeling words to their Mood Meter, their understanding and vocabulary to express their emotions expand. For

[4] More information about the RULER program can be found at https://www.rulerapproach.org/

[5] For more tips and ideas from veteran teacher, Wendy Turner, listen to the podcast at https://www.cultofpedagogy.com/sel-adults/.

instance, a student may use their Mood Meter to report feeling "-2 and -2" or "red" and "anxious" as the teacher asks the class to prepare to take a mathematics exam. That would indicate they were experiencing high-intensity and unpleasant feelings in that moment. When teachers equip students with that self-awareness, students can evaluate whether an emotion they feel, such as anxiety, is optimal for what they need to do. Students can take that self-awareness and use emotion regulation strategies, such as calming breaths, to shift or maintain helpful emotions for learning.

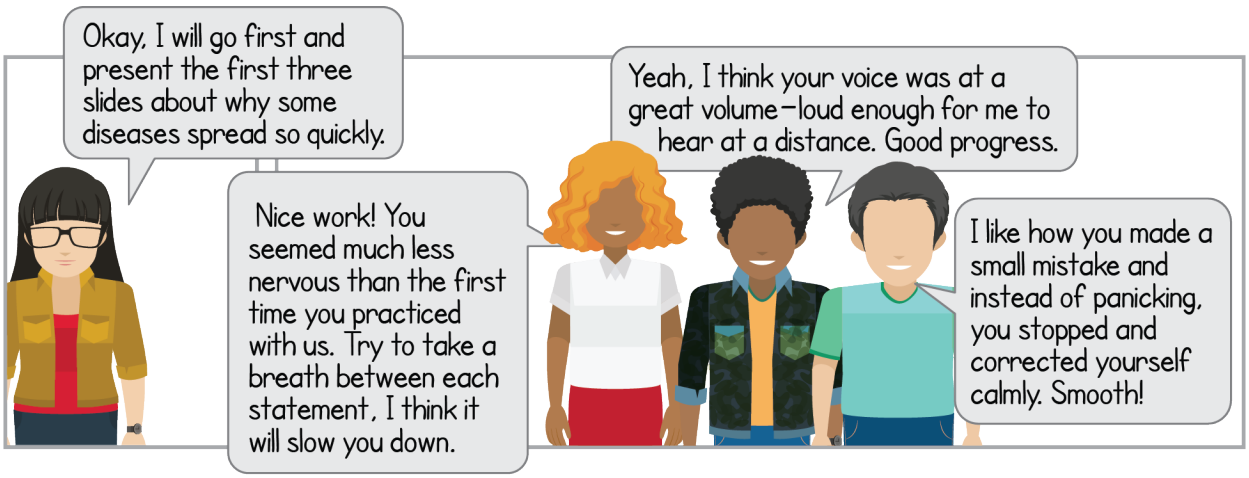
Three other research-based tools from RULER have demonstrated effectiveness for establishing and maintaining emotional safety and support in classrooms: *The Charter, Meta-moment,* and *Blueprint.* Schools implementing the RULER program typically use these tools to set the conditions needed for implementation of the *Feeling Words Curriculum.* The *Charter* sets collaborative agreements across a classroom of students labeling how they all want to feel, the actions that foster those feelings, and how they want to handle situations when it is hard to follow those actions. This set of cogenerated norms gets revisited and updated periodically. The *Meta-Moment* provides a step-by-step process that students and teachers can learn and practice to identify and extend the time between the experience of an emotion being triggered and the response to that emotion. The steps include **taking a deep breath, imagining their optimal self, and strategizing an action that aligns with that vision.** Students experiencing anxiety in anticipation of an exam take a meta-moment to recognize their dread, breathe deeply to calm their body and mind, and imagine themselves working through difficult problems, successfully. With this awareness, students decide to do all of the problems they can manage easily, build their confidence, and then come back to the harder problems afterwards. The *Blueprint* tool sets up a process to manage conflict by looking objectively at how emotions arise and trigger certain reactions and behaviors. This process includes probing questions for self-reflection and perspective-taking to cultivate empathy and deepen students' trusting relationships with their peers and teachers.

Promising Evidence for Emotion Learning

The RULER program has demonstrated consistent positive effects in research. According to multiple studies, as classroom climate improves, relationships with teachers deepen, and student engagement heightens, leading to improved academic performance and student behavior (Brackett et al., 2012; Hagelskamp, Brackett, Rivers, & Salovey, 2013; Nathanson et al., 2016). For middle level students struggling to be resilient academically and at risk for failure, the program appears to have a sustained effect across several years on school engagement (Cipriano, Barnes, Rivers, & Brackett, 2019). Though RULER implementation requires investment of teacher training and costs for materials, the key elements of the program illustrate how schools and classrooms can provide a thorough approach to support the social and emotional learning aspects of academic buoyancy. Those concrete skills set the stage for building other skills and attitudes to become resilient to a range of setbacks in school.

PROMISING PRACTICE 5. DEVELOPING CONFIDENCE AND POSITIVE SELF-BELIEFS FOR ACADEMIC RESILIENCE

Learning Context: As students begin to design and draft their presentation, they also practice presentation skills in a scaffolded way.



Developing academic confidence, or *self-efficacy*, can be a multi-pronged approach that complements the reduction of anxiety. Maintaining academic self-efficacy can be a protective factor against worsening disengagement (Anderson, Graham, et al., 2019). **Teachers can restructure learning through differentiation to scaffold the challenge level, personalize learning goals and learning strategies, and foster an environment that celebrates personal risk-taking**. For instance, in preparation for individual oral presentations on a topic, teachers can help students become more confident in public speaking with routine vocal warm-ups, reading scripts or passages aloud in small groups, and a range of drama-based experiences that foster shared vulnerability and belonging within a class (Katz-Buonincontro,

A Program Example:
ArtCore Drama-based Teaching

Integration of basic drama-based strategies can enhance emotional engagement and confidence for risk-taking in any content area across age groups.

Anderson, & Manalang, 2020).[6] As confidence increases around specific skills and challenges, anxiety about failing is likely to decrease and learners' capacity to manage the spectrum of emotions should improve. Building confidence requires enhancing students' beliefs about themselves (Bandura, 2006) including identifying and displacing negative beliefs, such as a fixed mindset about ability. Setting and monitoring goals effectively sets a foundation for developing confidence by illustrating to a learner that they are making progress toward fulfilling a challenge and can celebrate those gains.

Teachers play a big role in setting the conditions for students to develop the confidence that helps them face challenges and bounce back from setbacks in learning, especially for those facing high levels of adversity outside of school (Borrero, Lee, & Padilla, 2013). External factors, such as teachers' behaviors, can significantly influence self-efficacy for marginalized students. For instance, **receiving encouragement to participate in class and to develop educational aspirations predicted the self-efficacy of male African American U.S. secondary students** (Uwah, McMahon, & Furlow, 2008). The actions of teachers at one urban secondary school in California, serving only ethnically diverse and socioeconomically marginalized students—more than 50% emergent bilingual learners—illustrates the critical role of teachers. Those teachers

- maintained high expectations and emphasized and encouraged students' effort;
- created and held clear classroom structures and boundaries while remaining warm, approachable, and responsive; and
- explicitly and consistently expected all students, from the time they entered the school, to continue their education beyond high school.

Researchers (Borrero et al., 2013) attributed the educational aspirations of a university-going culture and the in-depth support to pursue postsecondary enrollment, as the primary driver of students' confidence and resilience to overcome the intense adversity they faced. Building that approach schoolwide produced impressive gains across the 2000–2010 decade in that school. **During the 2011 school year, all seniors had been accepted to university**.

PROMISING PRACTICE 6. A POSITIVE SENSE OF SELF THROUGH MINDFULNESS: A PROGRAM EXAMPLE

[6] Detailed information on drama-based strategies in the ArtCore Project can be found at http://www.artcorelearning.org/tableaux-vivants-training

One of the ways that schools around the world have tried to develop a positive sense of self and well-being for students is through mindfulness programs. These programs range from breathing exercises, to guided listening exercises with audio recordings, to brief group discussions, to teacher-led curriculum. According to a meta-analysis (McKeering & Hwang, 2019), results have been mixed but some evidence suggests that mindfulness practices during the middle years support some key aspects of student's self-beliefs underlying confidence and resilience. **Specifically, one program called *Mindfulness Education* was implemented in Canada with students in Grades 4–7 and demonstrated increased optimism, general self-concept in school, and social competence.** Benefits were stronger for pre-adolescent students compared to their early adolescent peers (Schonert-Reichl & Lawlor, 2010).

A Program Example:
Mindfulness Education

Middle-level students improved self-concept, social competence, and optimism through a 10-lesson curriculum with basic mindfulness practices.

Like RULER, the Mindfulness Education (ME) program is classroom-based and universal for all students. The central aim of mindfulness practices is to bring one's focused attention to the present without judgement about thoughts and feelings that pass through each moment. The ME program uses a 10-lesson curriculum to target four skills that can be applied throughout their experiences in and out of school:

- Quieting the mind by focusing on the breath and listening actively to calming sounds;
- Mindful attention through an active focus on sensations, thoughts, and feelings;
- Managing negative emotions and thinking as they are experienced in life; and
- Acknowledgement of self and others.

Mindful exercises are practiced briefly (3–5 minutes) several times a day with affirmations and visualizations that help to generate optimism and positive emotion. The 10-lesson curriculum focuses on different aspects of these skills alongside mindful exercises, such as learning about affirmations, looking at problems as opportunities, celebrating successes, and eliminating rumination on negative thoughts, among others. Teachers receive training for a day and implement lessons during 40–50 minute class periods.

Similar programs have been effective with younger and older students to affect a range of factors related to academic buoyancy and resilience, including decreasing difficulties, suicidal ideation, and emotional disturbances at school, as well as increasing well-being, pro-social emotions, and classroom climate (McKeering & Hwang, 2019). **For instance, the Learning to BREATHE program was implemented in a low-achieving public school in Hong Kong with early adolescent students and found**

A Program Example:
BREATHE

This program from Hong Kong teaches students emotional regulation techniques to increase well-being.

effects for improved emotional control and self-monitoring, as well as decreased anxiety, depression, and negative rumination (Lam & Seiden, 2019). These programs appear to reduce negative emotional experiences that accompany stress, helping students deal with setbacks.

PROMISING PRACTICE 7. COORDINATION AND COMMITMENT FOR RESILIENCE

Envisioning, setting, and monitoring goals can lead to the development of confidence, persistence, and self-direction for academic resilience (Lench, Fukuda, & Anderson, 2015). Goals direct our attention toward learning and away from other distractions. Goals energize our effort when they are challenging. Goals enhance our persistence and efficiency, especially when deadlines are tight. Goals activate our relevant resources, knowledge, and strategies. The skills to set meaningful and challenging, short- and long-term goals can be developed with explicit support and modeling from teachers on a regular basis. For instance, setting specific and challenging goals can produce better performance than urging people "*to do their best*" (see Locke & Latham, 2002). Because there is no external reference for a student if they are asked to "do their best" they will define the goal idiosyncratically. Students with lower confidence are likely to set less ambitious goals. For students with lower levels of confidence in a given area, teachers may need to support them to set harder goals, which, once achieved, can lead to greater commitment and development in self-efficacy.

Goals are most likely to lead to higher commitment and performance when they are specific, challenging, cogenerated with the learner, monitored with feedback on progress, and have a balanced focus on learning and performance (Locke & Latham, 2002). When learners generate and track these kinds of goals in learning, setbacks can be reframed as opportunities, and students can concentrate efforts toward stated commitments. Teachers can help students identify the steps that are needed to make progress and illustrate the control they have to reach success. Goals can also enhance students' capacity to plan and persist in the face of challenge, but that process requires self-regulatory skills to use time effectively, study well, use strategies to check and submit work, and ask for help when needed (Martin & Marsh, 2006). To reach short-term and long-term goals, such as applying to institutions for postsecondary education, requires planning, gaining knowledge about educational systems, and the management of practical concerns and challenges that students' face in their lives. Those aspects of coordination and commitment were identified as highly salient for IB Diploma students (Holman, Pascal, Hosbotă, Bostan, & Constantin, 2016), and are key for students facing chronic barriers and challenges, such as poverty.

PROMISING PRACTICE 8. ENVISIONING AND PLANNING FOR A FUTURE SELF: A PROGRAM EXAMPLE

A Program Example: **School-to-Jobs**

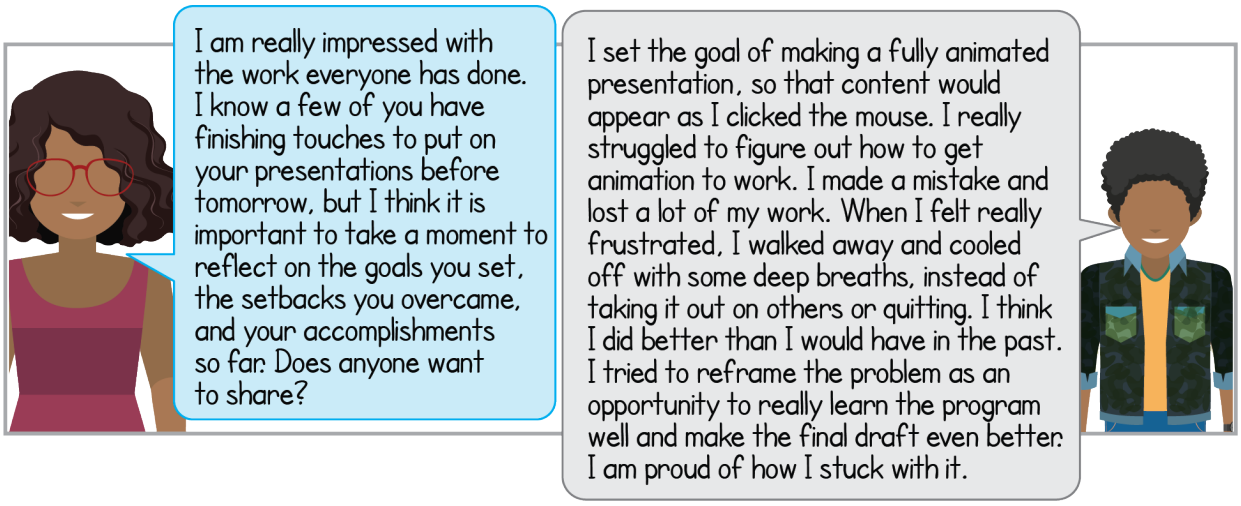
Middle-level students improve self-concept, social competence, and optimism through a 10-lesson curriculum with basic mindfulness practices.

The School-to-Jobs (STJ) curriculum was designed for middle level and secondary school students to support the development of confidence, goals, strategies, and a vision for a successful future self in school and beyond (Oyserman, 2015)[7]. The STJ intervention builds from identity-based motivation theory (Oyserman & Destin, 2010), which posits that **our identities change with the social and cultural context we are in (e.g., in school, at home, or with friends) and prove to be powerful mechanisms for motivation and resilience when facing difficulty.** Identity-based motivation theory suggests that envisioning our future self and what we want to become is the key to unlock the purpose and drive behind the actions we take today. That vision for a future self can help to make current identities more congruent in the school context. The SJT intervention includes mapping out the potential setbacks we might experience to reach that future self and identifying strategies to overcome those challenges. Evaluations of SJT show positive effects on doing homework, class disruptiveness, academic grades, initiative-taking, and risk of depression two years later (Oyserman & Destin, 2010). The SJT program illustrates how long-term visioning and goal-setting for students' future selves can help to make an academic identity feel more congruent with other identities, fueling motivation in the present.

PROMISING PRACTICE 9. DEVELOPING A SENSE OF CONTROL AND AUTONOMY

Learning Context: Before students present their final work to the class, the teacher asks students to reflect on their process, their decisions, and their goals.

[7] The curriculum has been published as a complete and comprehensive guide for educators or youth professionals in *Pathways to Success Through Identity-Based Motivation* (Oyserman, 2015).



Goal-setting and self-regulatory skills nurture academic buoyancy and resilience through a sense of autonomy and control in learning and success (Martin et al., 2010). If students don't feel a sense of autonomy and control it is less likely they will develop self-efficacy, set personally meaningful and challenging goals, and remain committed through setbacks and difficulty. **In controlled learning environments, teachers' actions and messaging make students' actions feel coerced and based on a sense of obligation, pressure, or guilt. In autonomy-supported learning environments, teachers identify and develop students' inner motivational resources so that choices and actions feel volitional, self-endorsed, and personally meaningful.** Specific practices in the classroom can either thwart or foster autonomy in students' motivation (Patall et al., 2018). Autonomy-supportive practices include, but are not limited to, the following:

- Learning activities structured around student interests and preferences;
- Offering meaningful rationale for usefulness and value of teacher-selected activities;
- Self-paced and self-organized learning process;
- Offering choices within constraints; and
- Openness and responsiveness to students' questions, perspectives, and opinions.

Autonomy-thwarting practices include, but are not limited, to the following:

- Controlling language, such as "you must" or "you should";
- Commanding language that sanctions only selected approaches;
- Suppression of students' questions, perspectives, or opinions; and
- Assignment of activities that appear or feel meaningless or irrelevant to students.

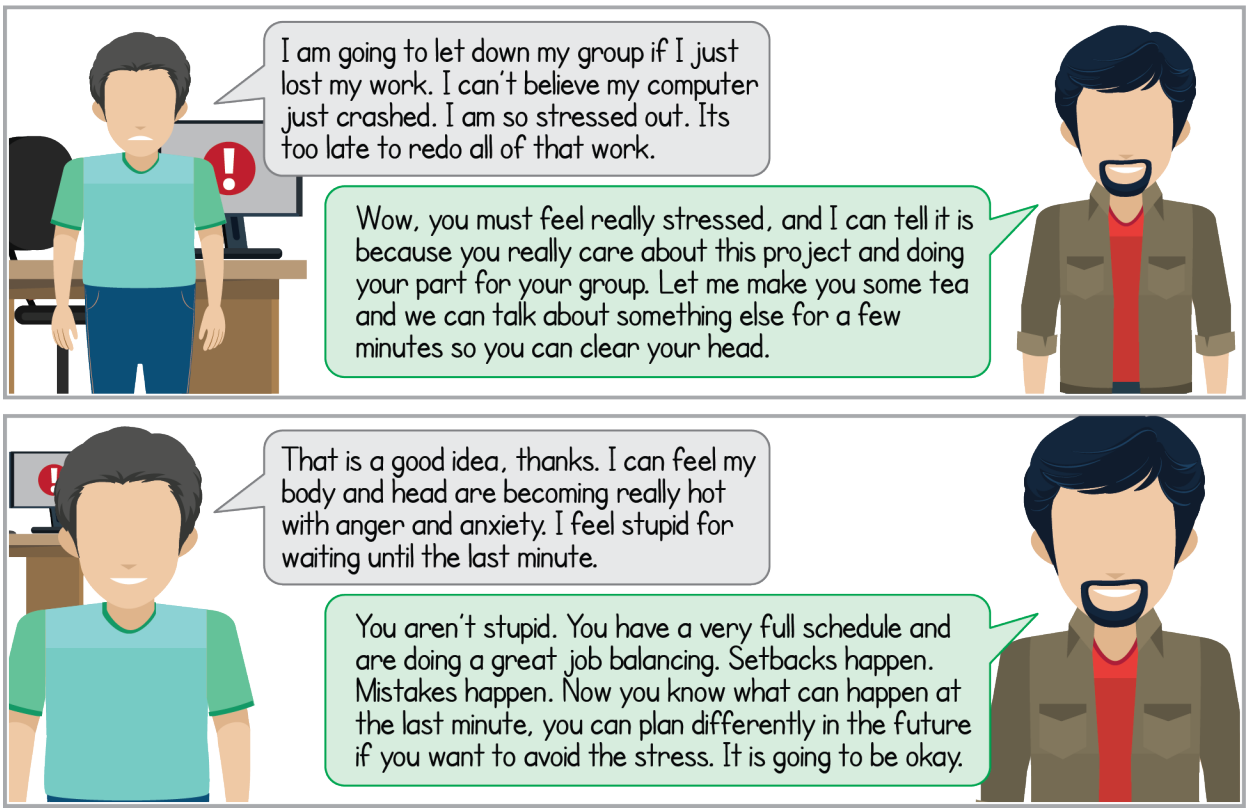
In addition to supporting students' autonomy and sense of control in the learning process, teachers can show students that committing effort and using effective strategies empowers students to make progress and improve in their learning and performance. Teachers can foster a sense of control in students by providing specific and consistent feedback that illustrates where students can adjust their approach or seek out additional resources to deal with a minor or major setback. **A sense of control becomes reinforced when rewards and feedback in the classroom are explicitly contingent on students' actions and choices and do not appear inconsistent or biased**. To feel a sense of control and personal responsibility when facing adversity requires taking a problem-solving focus, accepting the situation, and reframing the challenges in light of its positive potential for growth. Feeling in control and with autonomy leads to less need for venting. Rather, a learner may become more proactive to look for a solution and find some potential positive that can come from the challenge. **When *problem-solving* and *acceptance coping* ensue, academic resilience can be higher and lead to greater academic satisfaction and performance** (Meneghel et al., 2019). Academic resilience strengthens when teachers

- provide autonomy support,
- teach social and emotional learning skills,
- foster problem-solving and acceptance coping,
- support students to set meaningful goals, and
- encourage effort and model how to bounce back.

However, these influential classroom-based practices can be further augmented by schoolwide or systemwide policies to create resilience-building schools.

PROMISING PRACTICE 10. BUILDING COMPASSIONATE SCHOOLS: A SYSTEM-LEVEL EXAMPLE

Learning Context: As student is finishing up the last part of the presentation at home late into the evening, their computer crashes.



Worldwide, young people face traumatic experiences and those experiences are serious risk factors for school engagement and success—in the U.S., 38% of students have had one or more adverse childhood experiences (Robert Wood Johnson Foundation, 2017) and in a survey of Eastern European countries over half of respondents have had at least one adverse childhood experience (Bellis et al., 2014). Some systems have responded with a comprehensive approach to support students' resilience in school. For instance, the Compassionate Schools Project builds from extensive research on trauma sensitive classrooms (Jennings, 2018) to include a multi-pronged approach across K–5 elementary schools, serving 10,000+ students in Jefferson County Public Schools (JCPS)—a large urban U.S. district in Kentucky. With more than 60% of students in the district facing socioeconomic challenges with food and housing insecurity, most JCPS students experience adverse childhood experiences. **The**

focus of the Compassionate Schools Project[8] **is to develop students' social and emotional learning skills, such as empathy and emotional regulation, through a variety of formats, from mindfulness breathing practices to managing conflict**. Taught and practiced systematically across entire schools, the program uses a curriculum to teach students to self-reflect and self-assess how they respond to challenges throughout their school day. Results of a large-scale rigorous evaluation on student outcomes is currently underway.

Program designers have provided additional guidance to help schools and educators become more sensitive and supportive to the trauma students experience (Kris, 2018):

A Program Example:
CARE Program for Teachers

Elementary school students learn social-emotional skills, mindfulness practices, physical movement with breathing, and nutrition across classrooms for stress reduction and resilience.

- Remove punitive zero tolerance policies in classroom discipline models.
- Reframe student behaviors with empathy, understanding that being on high alert for threat is normal with trauma, and disruption or disengagement may be self-protective.
- Cultivate and cherish positive emotions, such as celebrating acts of kindness, to heighten awareness of what it feels like to feel good.
- Use stories from literature and real life to explore what people feel when they face setbacks, difficulty, or trauma and how they bounce back.
- Ensure that teachers have embodied skills and attitudes for resilience, compassion, and self-regulation in order to manage stress successfully and model for their students.

PROMISING PRACTICE 11. CARING FOR TEACHERS

Developing teachers' skills and knowledge to be resilient and compassionate can be an important and effective step to supporting academic buoyancy and resilience of students, especially those facing high risk for trauma. One program called CARE (Cultivating Awareness and Resilience in Education) provides a 30-hour program with additional phone coaching aimed at developing teachers' social and emotional skills, mindfulness practices, relationship-building skills, and skills for care and compassion for students in need of support. Research on the program demonstrated **positive effects on teachers' general well-being and self-efficacy, efficacy for student engagement and instruction, emotional exhaustion, and mindfulness to be observant and less reactive with**

[8]Find out more information about the Compassionate Schools project at https://www.compassionschools.org/

students (Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013). Programs focused on supporting students' skills and attitudes for academic resilience should begin first with teacher skill and awareness. At the system level, some large school districts, such as Oakland, CA[9], have set social and emotional standards for teachers to reach.

If academic resilience is part of our natural motivational system for optimism, belonging, challenge, mastery, meaning, respect, and self-worth, then a caregiving model includes an ecology of support in and out of school. Experts in Malaysia (Kuldas, Hashim, & Ismail, 2015) suggest that **for national educational systems serving large proportions of students facing many risk factors for underachievement, the emphasis should be less on expectations for students and more on the ecology of caregiving that surrounds them**. In Greece, practitioners focused on developing a family-school partnership approach to support students with special needs or who face a range of risk factors using an inclusive rather than authoritarian approach (Kourkoutas, Eleftherakis, Vitalaki, & Hart, 2015). Because students experience intense negative emotions due to difficult relationships in school and at home, a resilient-focused counseling approach with families aims to develop insight into the internal world of students to understand learning difficulties and disruptive behavior. To stabilize vulnerable students' emotions and sense of self requires the adults in their lives to understand what they are going through and to respond with that understanding. An ecological approach to academic resilience recognizes every adult in and out of school that engages relationally with a student as a potential protective factor to boost resilience.

A Program Example: **Compassionate Schools Project**

Elementary school students learn social-emotional skills, mindfulness practices, physical movement with breathing, and nutrition across classrooms for stress reduction and resilience.

PROMISING PRACTICE 12. MAKING ACADEMIC RESILIENCE FIT: CULTURALLY ADAPTING PROGRAMS FOR SUCCESS

Most programs and practices described in this Policy Paper are limited by the Eurocentric cultural origins of their research-based design. Ijadi-Maghsoodi et al. (2017) identified this issue through the cultural adaptation of a program to develop the academic resilience of ethnic and racial minority students in the U.S. **They acknowledged that behavioral interventions for ethnic, racial, and cultural minority students around the world should align to the cultural beliefs and values of those students.** Academic interventions should also acknowledge the power

[9]Learn more about the Oakland Public School social and emotional learning initiative here: https://www.ousd.org/domain/143.

of culture, language, and family to influence the challenges students face and how they will engage in school-based programs. While approaches should be adapted to the strengths and needs of the students and families served, school leaders and educators should maintain the core components that are essential to its effectiveness.

The *Resilience Classroom Curriculum* includes nine 45–55 minute classroom sessions teaching academic resilience skills of emotional regulation, communication, problem-solving, goal-setting, and managing stress. The lessons include stories about stressful situations that adolescents may encounter, in and out of school, to prompt discussion. Students write their own narrative toward the end of the program. To adapt the Resilience Classroom Curriculum, Ijadi-Maghsoodi et al. (2017) took several steps in line with the community-partnered participatory research approach to cultural adaptation with the local community.

A Culturally Adapted Example: **Resilience Classroom Curriculum**

Students learn academic resilience skills and engage with culturally adapted stories of resilience that are developed from student feedback and input to be most relevant.

- District partners identified the key problems students face.
- Students engaged in focus groups with program partners and read the stories from the original curriculum, discussing if and how the characters, style, and stories resonated with them.
- Program partners used student recommendations to adapt the characters and stories to be more relevant and representative of the lived experiences and struggles they face.
- Teaching methods were made more activity-based and less teacher-led.

Implementing and evaluating the culturally adapted approach led to positive effects in students' resilience skills, specifically in empathy and problem-solving. Researchers attributed much of that effectiveness to the measures of cultural adaptation they employed.

PART 3.
RECOMMENDATIONS FOR IB STAKEHOLDERS

The recommendations below summarize the practices, programs, and policies described to provide practical guidance for school leaders, teachers, and parents. Based on the IB Learner Profile, the IB programme aspires to develop *balanced* and *reflective risk-takers.* Those aspirations can be bolstered with additional curriculum and instructional strategies to cultivate academically buoyant and resilient students.

RECOMMENDATION 1:
BUILD AWARENESS OF THE ADVERSITY AND TRAUMA STUDENTS (AND THEIR TEACHERS) FACE

Students face universal traumatic experiences, such as school closure and economic instability due the COVID-19 pandemic. In fact, one survey found more than half of California secondary students sampled in April 2020 reported the need for mental health support (Jones, 2020). But even this universal traumatic event has affected students differently depending on their circumstances. If schools and educators begin to understand the traumatic experiences and adversity that exist for students and the research-informed practices to be sensitive to students experiencing trauma, they can become more supportive to students, individually and universally. Secondary traumatic stress—the accumulation of stress experienced by those caring for others in trauma—is also a very real and present threat to teachers' well-being and readiness for self-care and support to students (Walker, 2019). As illustrated in this Policy Paper, the ability to reframe student behavior and highlight the positive emotions and power of trusting and caring relationships begins with understanding the experiences and effects of trauma and adversity. Importantly, a healing-centered environment that can cultivate academic buoyancy and resilience must be strengths-based and not reduce students to their trauma.

RECOMMENDATION 2:
TEACH EMOTIONAL UNDERSTANDING AND REGULATION UNIVERSALLY

Every program developed to support students' academic resilience included some aspect of emotional regulation. Emotional regulation can have a wide array of benefits related to academic resilience, and specifically help students adjust their response to stress, anxiety, and other negative emotions experienced regularly in school. For instance, IB standards could begin to include expectations for emotional learning across levels. The IB approaches to teaching could integrate emotional learning techniques. IB curriculum could build the science of emotions into units on the social, cultural, and political systems. Providing systematic professional development opportunities

for teachers across the IB programme will be a critical first step to developing a shared understanding and common practices. IB educators will need to develop their own academic resilience skills in the classroom. IB schools can support IB parents to become more emotionally skilled by making training opportunities and resources available.

RECOMMENDATION 3: IDENTIFY THE NEEDS AND CHOSE THOSE INTERVENTIONS THAT ARE CULTURALLY RELEVANT FOR CONTEXT

There are many emotional learning, mindfulness, and resilience-building programs across the globe focused on positive youth development. Each one mentioned in this Policy Paper and beyond needs careful attention and inclusive adaptation to fit the local cultural context, while also following the evidence-based core tenants of the program. School leaders, teachers, and parents/guardians should understand the unique needs of their students by listening to them, their fears, traumas, and hopes and dreams and adapt the messages, the models, and the modality of delivery to optimize relevance and representation. Universal Design for Learning, an IB cornerstone, can provide principles to guide that effort.

RECOMMENDATION 4: HELP STUDENTS ENVISION A FUTURE SELF IN SCHOOL, SET GOALS, CELEBRATE SUCCESS, AND MANAGE SETBACKS

The practice of envisioning, setting, monitoring, and celebrating goals can play a critical role in academic resilience. The IB programme can adopt goal-setting, including the long-range envisioning of a future self, as a consistent practice. Then, students from marginalized racial, ethnic, or cultural backgrounds can have more opportunities to carry their values and identities into their classroom experience. Stories of others, especially people from similar backgrounds as students, who pursued challenging goals, faced setbacks, and were resilient toward success are key components of academic resilience skills training. The IB programme could draw from IB Diploma program graduates from around the world to build a library of these stories to share with other students. IB teachers can incorporate routines that ask IB students to write self-reflective narratives about their own academic resilience toward personal goals. Celebrating the accomplishment of reaching goals is an important part of this process, and IB schools, teachers, and parents can model and prioritize the celebration of students' perseverance through setbacks.

RECOMMENDATION 5:
TRACK STUDENTS' ACADEMIC BUOYANCY WITHIN AND ACROSS CLASSES

IB Schools and educators can use the short, 4-item Academic Buoyancy scale as a survey alongside other aspects of resilience, such as supportive relationships, sense of control, and optimism, to gauge how students are adjusting and managing stress in school. Teachers can gauge students' academic resilience by monitoring for unhealthy and avoidant responses to setbacks, such as chronic absenteeism, procrastination, and disruption in class. IB teachers can take the time to learn more about what specific anxieties students may have (e.g., being called on by the teacher in class), and make agreements with students about norms the class can follow to be most supportive and safe for all students. If IB schools use variables marked as risk factors for adversity, they can identify students facing the greatest adversity in and out of school and provide more intensive support and skill development for academic resilience. Similarly, IB schools serving high concentrations of students facing major adversity may need additional support and training for teachers and students.

RECOMMENDATION 6:
STUDENTS SHOULD PRACTICE AND HABITUATE COPING STRATEGIES TO DEAL WITH SETBACKS

We have presented a wide range of coping strategies that students can use and highlighted the research that suggests some are more effective than others. For instance, using self-coaching statements, such as *You can do it,* and self-consequences, such as arranging rewards or punishments for reaching goals or not, can play a role in the academic resilience to persist in the face of setbacks. If students engage and associate with peers and adults who model academic buoyancy, that influence will likely boost their own. When an emotional response to a setback or failure is strong, students should focus on identifying the emotion they experience and using emotional regulation techniques, instead of only venting to a friend or parent. Students can also become aware and metacognitive about patterns of avoidant or self-sabotaging behaviors that often arise when they face a setback. That awareness can lead students to reframe difficult situations for their growth potential and redirect their energy and effort toward problem-solving and strategy development rather than frustration, venting, and avoidance.

CONCLUSION

Academic buoyancy and resilience are nurtured and reinforced through the combination of many practices at the classroom and school levels. Practices to develop academic buoyancy and resilience align well with different aspects of IB, including IB learner profile, Universal Design for Learning policy, IB standards and practices, IB approaches to teaching, IB programme curriculum, and teacher support materials. The research-based practices and program examples included in this policy paper illustrate new opportunities for IB stakeholders to augment

current efforts to ensure students have the opportunity to learn and develop academic resilience skills to be successful in school. With care and compassion, IB stakeholders can nurture students' composure to face difficult emotions; their commitment to goals; their control to be deliberate; their coordination of a plan; and their confidence to take risks, fail well, and fail often.

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APPENDIX: A NOTE ON METHODOLOGY

The purpose of this policy paper is to provide a brief, broad overview of academic buoyancy and resilience in primary and secondary education; present promising policies, programs, and practices; and to recommend ways for IB stakeholders to improve students' resilience skills. As such, our literature review was not designed to be fully systematic in nature or to be the definitive account of any of the individual topics addressed in the policy paper. Each of the topics covered in this policy paper represents a specific area of research within the broad, multidisciplinary field of resilience in education. Our goal was to provide a high-level overview of the field, with a focus on providing practical insights and practices that a variety of IB stakeholders can begin implementing in their daily work educating children.

We conducted a mixed methods literature review to collect research from academic databases and popular, practitioner-oriented sources (e.g., journals, magazines, websites; Grant & Booth, 2009). We began our literature review process by generating an initial definition of metacognition. We then employed that definition to develop search terms and parameters for searches in two academic databases: PsychNet and ProQuest's Education Collection. To keep the literature review manageable, we employed only three search terms: (a) Academic Resilien* (b) Adaptab* AND learn* strateg*, and (c) Resilien AND "self-regulat*". We limited our search for articles from 2000-2020 to keep our search manageable and also to focus on the most recent and relevant literature.

The initial search produced 379 unique articles. From that initial pool, we excluded articles that were not grounded in primary or secondary education, studies that were completed in clinical settings, and those focused too narrowly on specific academic subjects or topics. That resulted in a secondary pool of 93 inclusions. From that pool, we further narrowed down to a core group of 45 articles that served as the starting point for framing the paper. We selected this core group of articles to ensure adequate coverage of the pre-determined paper sections created in collaboration with our IB Research Manager.

The remaining articles used in this review come from three sources: (a) references connected to the initial pool of 45 articles; (b) additional, targeted searches to reach full coverage across the different paper sections; and (c) article recommendations from our IB Research Manager and the initial resources selected by IB as necessary context for the policy papers project. First, we used a targeted snowball method (Wohlin, 2014) to identify relevant literature connected to the core pool of 25 articles. We looked backward by examining the original article's reference section, as well as forward by using GoogleScholar to identify what new articles cited the original article. This allowed us to identify important seminal articles, which is why some articles cited in the policy paper were published before 2000. Second, we conducted targeted searches to fill gaps not covered by the core literature pool. For example, our initial search did not include the recent literature on academic buoyancy. Therefore, a separate, targeted search in the aforementioned databases and on GoogleScholar was used to identify the most relevant literature. Also, in most cases, the literature used to frame Part 2 of this policy paper came from the core pool of 45 articles. However, most of the necessary supporting literature was collected through secondary, targeted searches. For instance, a search was conducted to identify programs on emotional regulation and mindfulness with a strong research base. Other program examples were incorporated based on the expertise of the authors. Finally, we reviewed relevant articles recommended for inclusion by our IB Research Manager, those that served as the impetus for the policy paper project, and those that provided necessary context on IB programmes. These articles were instrumental in framing the recommendations for IB stakeholders.

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