Self-Determination Theory as a Framework for Student Assessment Well-being

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Abstract: Classroom assessment appears to be a source of constant stress and anxiety in the lives of post-secondary students. As something unique to students, assessment is easily identified as an important contributor to the mental health crisis on post-secondary campus. Despite this, reforms to classroom assessment seem difficult to enact. It is possible that some of instructors' hesitations to revise assessment practices may come from a misperception that doing so would compromise the rigour and validity of assessment data. In other words: assessment has to be stressful to be doing its job. This logic, however, is a false dichotomy because quality assessments designs must attend to student well-being in order to make strong validity inferences about student learning. In this chapter, we use self-determination theory to unify student well-being and high quality assessment design under one rigorous and well-established theory of human motivation and flourishing. Self-determination theory not only offers conceptualisations of well-being itself but also empirically vetted ways to support well-being through strategies that satisfy basically psychological needs and can be directly applied to the design of assessments in ways that enhance validity. We tailor a variety of these strategies to assessment specifically and thereby offering post-secondary instructors theory-guided recommendations that they can apply to assessment assessment format. By pairing a robust psychosocial theory on well-being with contemporary thinking about validity, we show that concerns for quality assessment and student well-being are complementary rather than adversary.

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Self-Determination Theory as a Framework for Student Assessment Well-being

It is generally agreed that there is a student well-being crisis on post-secondary campuses. In Canada, approximately 16% of university students have seriously considered suicide and it is the second leading cause of death in the youth (ages 10-24) age group (National College Health Assessment, 2019). Furthermore, 40% of Canadian university students are depressed (Othman et al., 2019) with similarly high numbers reported in the United Kingdom (Lewis & Bolton, 2023), Australia (Russell et al., 2023), and the United States (Bowe, 2023). Importantly, in some instances these rates tend to be higher than for the same age in the general public (McManus & Gunnell, 2020). In the United Kingdom, there is evidence to suggest a reduction in mental health upon entering into post-secondary education that does not return to pre-post-secondary levels even after the first-year shock wears off (Bewick et al., 2010; Linden et al., 2022). This trend has only worsened following the COVID-19 pandemic (Hellemans et al., 2020).

Given this crisis, it is necessary to look at how all aspects of post-secondary education contribute, for better or worse, to student well-being. Classroom assessment practices are one area that have not been sufficiently scrutinised even though they are one of the largest and most persistent contributors to student stress (Linden et al., 2022). Perhaps assessment has not been a candidate for improving student well-being because the two seem unable to be reconciled without compromising the integrity of assessments. This logic, however, is a false dichotomy because both student well-being and quality assessments designs are necessary to make strong validity inferences about student learning (Brown & Harris, 2016). In this chapter, we use self-determination theory (SDT) to unify student well-being and high quality assessment design under one rigorous and well-established theory of human motivation and flourishing (Ryan, Reeve et al., 2023). Self-determination theory not only offers conceptualisations of well-being

itself but also empirically vetted ways to support well-being through strategies that can be directly applied to the design of assessments in ways that enhance validity. By pairing a robust psychosocial theory on well-being with contemporary thinking about validity, we will show that concerns for quality assessment and student well-being are complementary rather than adversary.

Scholarly Perspectives on Well-being

Well-being is the cornerstone of positive psychology. Ed Deiner's (1984) review paper, entitled *Subjective Well-being,* reinforced the case for psychology to broaden its focus from negative outcomes, pathology, and deficits, to positive outcomes, strengths, and flourishing. Currently, few researchers would argue that well-being is an important psychological outcome, even though its conceptualization varies. Most commonly, well-being is considered according to hedonic and eudaimonic perspectives. Hedonia is interpreted as positive affect in the form of happiness without pain. Deiner's measurement of subjective well-being tends to fit with the hedonic perspective and relies on a global appraisal of satisfaction with life paired with a life filled with more positive affect relative to negative (Deiner, 1984). Eudaimonia is concerned with a well-functioning life, not simply a pleasant one. As such, eudaimonia tends to be reflected by measures of personal growth, mindfulness, integrity, purpose, and positive relations with others (Ryan, Reeve et al., 2023). Summing across studies, Martela and Sheldon (2019) identified 63 separate elements as used in operationalizations of eudaimonic well-being, leading them to conclude that "the vagueness of the [eudaimonic well-being] category seems to permit almost any operationalization at all, as long as the measure has a healthy or appealing sound or flavour" (p. 461).

Another perspective is rooted in multidimensional models of mental health that recognize both well-being and psychopathology may present unique opportunities to both prevent and treat

mental illnesses. Greenspoon and Saklofske's (2001) multidimensional model of mental health consists of four quadrants. Complete mental health occurs when individuals experience high subjective well-being and low psychopathology. In the opposite quadrant, complete mental illness occurs when individuals have low wellbeing and low pathology. Individuals characterised as having incomplete mental health feel dissatisfied, vulnerable, or languishing despite an identifiable pathology. Incomplete mental health occurs in two ways. First, incomplete mental health occurs when individuals have high psychopathology and low well-being. This tends to result in active symptoms of distress and floundering. Second, incomplete mental health can occur when individuals retain a high sense of well-being despite high pathology. Such people seemingly appear content even though they are experiencing maladjustment or struggles.

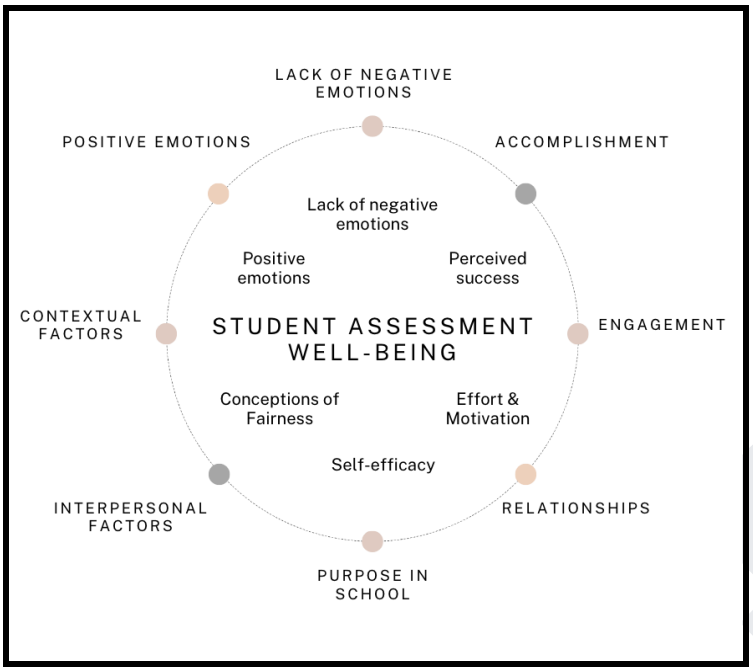
Finally, working from the premise that schooling is a unique and salient context for young people, researchers have taken a domain-specific approach to studying student well-being. Unfortunately, the conceptualization of student well-being is similarly disorganised as in the general research. In their scoping review of 33 studies between 1989 and 2020, Hossain and colleagues (2023) reported that in all but two studies, researchers adhered to either a hedonic (52%), eudaimonic (10%), or integrative hedonic and eudaimonic (35%) conceptualization of well-being. Within these approaches, Hossain et al. identified 91 discreetly named domains that were used to measure student well-being. Importantly, there was substantial "jingle-jangle" (Marsh et al., 2019) in domain definition and measurement, which Hossain et al. were able to reduce to eight overarching factors: positive emotions, lack of negative emotions, engagement, relationships, accomplishment, purpose in school, internal factors, and external factors. Hossain and colleagues concluded that the presence of positive emotions was overwhelmingly the most consistent indicator across all studies, thereby giving some priority to the hedonic view of

well-being. They also noted near-consensus that well-being was a subjective perception that is appropriately measured through self-report.

Considering student well-being specifically in the domain of classroom assessment is important because few elements of schooling are regularly viewed as so unappealing. Students characterise assessment in higher education as annoying and frustrating (Wass et al., 2020), anxiety-inducing (von der Embse et al., 2018), and stressful (Linden et al., 2022) in a way that is qualitatively different from their general post-secondary experience. Indeed, there is a consistent constellation of indicators of student well-being that have clear counterparts in the domain of assessment including but not limited to test anxiety, emotions, efficacy beliefs, conceptions of fairness, effort, and perceptions of success (Figure 1). Whether investigating individual indicators like anxiety (Von der Embse et al., 2018) or well-being as a holistic construct, the evidence is clear that well-being correlates with academic achievement. Documenting this, in the most recent meta-analyses between students' subjective well-being and academic achievement, Kaya and Erdem (2021) reported .17 as the average effect size. This is nearly identical to the first meta-analysis conducted in 2018 by Bücker et al. who reported .16 as an effect size. Given that academic outcomes are, in many ways, the primary mandate of higher education, the associations between well-being and achievement mean that administrators and instructors cannot simply view student well-being as a nicety. We turn our attention to self-determination theory and its theoretical and empirical evidence that basic psychological need satisfaction and frustration reliably predict student well-being (Vansteenkiste & Ryan, 2013; Vansteenkiste et al., 2023).

Figure 1.

Indicators of Student Assessment Well-being



A Self-determination Theory Perspective on Well-being

Like other perspectives of well-being, SDT relies on a similar constellation of constructs as representative of eudaimonic well-being, including intrinsic motivation, positive emotions, subjective vitality, flourishing, and meaning (Martela, 2023). Going beyond this characterisation, SDT articulates theoretically and with substantial empirical evidence how well-being is supported or undermined. In SDT, well-being arises from the fulfilment of the basic psychological needs of autonomy, competence, and relatedness (Vansteenkiste et al., 2023). Alternatively, drawing on models recognising the notion of incomplete mental health (Greenspoon & Saklofske, 2001), SDT acknowledges that various negative consequences occur when autonomy, competence, and relatedness are frustrated (Vansteenkiste & Ryan, 2013; Vansteenkiste et al., 2023). Basic psychological need (BPN) satisfaction and frustration are conceptually and empirically distinct (Chen et al., 2015). Autonomy refers to the innate human desire to feel in control of one's actions and choices. When individuals experience autonomy, they perceive themselves as volitional agents who make decisions aligned with their values and

interests. In contrast, autonomy frustration is associated with “a sense of pressure and inner conflict” (Vansteenkiste et al., 2023, p. 85). Competence satisfaction revolves around the aspiration to feel effective and capable in one's pursuits; whereas, competence frustration produces a sense of helplessness that harms the natural desire to develop and master new skills and achieve desired outcomes. Relatedness is satisfied through the establishment of meaningful connections characterised by warmth and care, and is frustrated by the lack of such connections through social isolation or exclusion. Importantly, BPN satisfaction or frustration is put in motion by the characteristics of the contexts that individuals experience (Vansteenkiste et al., 2023). For students, this means the decisions instructors make in terms of instruction and assessment contribute to their BPN satisfaction and frustration and by extension their well-being.

Basic Psychological Needs in Post-secondary Education

Support for the association between BPN satisfaction or frustration and student well-being is compelling (Ryan, Reeve et al., 2023). A substantial body of research in higher education use BPN satisfaction as a predictor of indicators of well-being including vitality, peace of mind, engagement, emotions, effort, motivation, purposeful growth, purpose in life, self-acceptance, and performance. For example, Yu and colleagues (2020) found that BPN satisfaction predicted college students’ positive affect, vitality, and peace of mind in Chinese and American samples. In addition, Benita et al. (2020) operationalised well-being as growth, purpose, and acceptance and found BPN satisfaction was a significant predictor with a standardised beta-weight of .45 in samples of Israeli, Peruvian, and Brazilian college students. Pertaining to assessment specifically, Daniels et al. (in press) used a parallel multiple mediator analysis and found that perceptions of fairness were positively associated with BPN satisfaction in a sample of students with dyslexia. In turn, satisfaction of competence and autonomy were

positively associated with students' enjoyment, pride, and relief, and autonomy protected from feelings of anxiety.

Several studies have also found that BPN frustration predicts various negative indicators of well-being including negative emotions, sleep disruption, worry, amotivation, academic procrastination, perfectionism, perceived success, and emotions. For example, Oram and Rogers (2022) found that BPN frustration positively predicted academic procrastination through the reduction of autonomous motivation and increase in amotivation in a sample of 617 undergraduate students. In addition, Howell and Sweeny (2019) determined that BPN frustration positively predicts sleep disruption and feelings of worry in undergraduate students. Pertaining to assessment specifically, in a multi-method paper with both BPN satisfaction and frustration, Goegan and colleagues (in press) found that students reported lower grades and lower levels of perceived success when their BPN in assessment were frustrated compared to when they were satisfied. The thematic analysis further identified that students described many indicators of well-being including emotions, effort, help seeking, and outcomes as hindered by recalled BPN frustration and enhanced by recalled BPN satisfaction.

Evidence-based Practices that Satisfy Basic Psychological Needs

In general, the evidence for BPN satisfaction predicting positive well-being outcomes and BPN frustration predicting negative well-being outcomes in the context of higher education is unambiguous. The consistency of results led researchers to identify teaching behaviours that consistently support BPN and to design interventions to improve teachers' application of these behaviours (Reeve & Cheon, 2021). In terms of behaviours, Ahmadi and colleagues (2023) undertook a Delphi study in which 34 SDT experts engaged in three rounds of ranking in order to reach consensus on the most strongly agreed upon teaching behaviours that satisfy or frustrate

students' BPN. The processes narrowed an original list of 73 unique teaching behaviours extracted from systematic reviews and existing taxonomies to 57 behaviours with 77% agreement and then to a short list of nine BPN supportive and 13 BPN frustrating "emblematic behaviours" (p. 13). We have summarised these actions in Figure 2 and suggest equivalent behaviours for the assessment domain. Finally, the evidence that teachers can be taught how to better enact these behaviours in their teaching is strong with effect sizes that would be considered large and consistent benefits for a wide range of student outcomes (Reeve & Cheon, 2021).

Figure 2.

Basic Psychological Need Supporting and Frustrating Teacher Behaviours

BASIC PSYCHOLOGICAL NEED STRATEGIES		
	teaching behaviours	**assessment behaviours**
Satisfying	• allow for student input, provide rationales, provide optimal challenge, provide specific feedback, praise effort, show positive regard and care	• co-create assessments/ scoring, offer rationale for assessment decisions, match learner outcomes, create ways to act on feedback, acknowledge assessment stress
Frustrating	• use pressuring language, unreasonable deadlines, peer comparisons, chaotic course design, ignoring students, reward unfairly, be sarcastic	• use assessment as a threat, make assessments too long, create competition, have vague instructions or scoring, rely on high-stakes options, make errors

Unlike the literature on instruction, essentially no research has directly investigated ways to make assessment better support BPNs (Daniels et al., 2021). This is problematic because in addition to all the ways in which we have shown assessment appears to compromise well-being, descriptive data directly shows that assessments actually do not satisfy students' BPN. As data

for this chapter, we asked students to recall the extent to which their BPNs were satisfied "thinking about your assessment in a specific course from last semester." Responses from a convenience sample of 210 undergraduate students (*M* age = 26.05 years, range 19-43; 37% men, 60% women, 3% non-binary) affirm that all three BPN were generally poorly satisfied with the average score on each scale at or below the neutral point of the 5-point likert scale (competence *M* = 3.14, *SD* = .69; autonomy *M* = 2.48, *SD* = .80; relatedness *M* = 2.90, *SD* = .77). In other words, the substantial data documenting students' struggle with assessment well-being may have a clear root, as well as a clear solution, in basic psychological needs. Knowing this means that researchers and instructors can capitalise on the practical guidance that is given in the instructional literature to better design assessments to consistently support BPNs (see Table 2). There is one essential caveat to this approach: BPNs and student assessment well-being cannot override the necessity to make valid inferences from assessment. We believe the most effective way to prevent this imbalance is to anchor BPN recommendations to a validity framework so that validity stays front of mind as the primary requirement of assessment.

Linking Well-being and Validity in Higher Education

We adhere to Messick's definition that (1989) "validity is an integrated evaluative judgement of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment" (p. 13). In other words, validity has to do with the extent to which instructors are confident about the claims they make about student learning based on the data they collected. Some research suggests that the validity of inferences are not front-of-mind for post-secondary educators (Bearman et al., 2017). For example, Bearman and colleagues asked 33 university instructors about their assessment practices and none of them even mentioned validity. Likewise,

when Myyry et al. (2022) interviewed 16 award-winning Finnish university instructors about their assessment practices the only mention of validity was in regards to fairness of assessment rather than as a fundamental function of assessment.

What, if not validity, is guiding assessment decisions in higher education? Some research shows that post-secondary educators are employing flexible student-centred approaches like authentic projects, portfolios, rubrics, Weblogs, and diverse feedback modalities (Daniels & Bulut, 2020; Guo et al., 2020; Klein-Collins & Hain, 2009; Searle & Poth, 2021). In contrast, alternate sources indicate that traditional practices such as examinations continue to dominate assessment methodologies in higher education (e.g., Ellison & Jones, 2019). Predictably, the degree to which these methodologies are embraced by individual instructors in post-secondary education varies considerably, buoyed by academic autonomy, meaning that students have little predictability in the types of assessment they will experience. Helping them make these decisions are a variety of lists of optimal assessment conditions (Gibbs, 2010), practical manuals (Bryan & Clegg, 2019), and feedback frameworks (Hattie & Timperley, 2007). However, without attention to quality validity inferences, the legitimacy of any assessment is called into question.

To better bring validity alongside design recommendations, Crooks, Kane, and Cohen (1996) created an eight-stage model of validation that "combines the virtues of a clearly defined set of validation criteria and the structure of an argument-based approach" (p. 266). In their paper (1996) Crooks and colleagues used a chain link visual and metaphor for the eight stages in order to argue that all links matter to the overall strength of the inference. Importantly, validity frameworks already make room for the importance of attending to student well-being in assessment because it is a source of construct-irrelevant variance - something that impacts how well a student performs on an assessment that is separate from what they know about the content.

This means that validity frameworks also create space for strategies that predictably support BPNs to be applied to assessment decisions in a way that enhances validity. We have chosen to use Crooks and colleagues' (1996) eight stage model of validity to create ways for instructors to design high quality assessments that simultaneously attend to students' well-being through BPN satisfaction and the non-negotiable reality that valid inferences relate to both. As we move through the next section, readers have to simultaneously apply the lens of BPNs and the lens of validity: Only by looking through both can truly effective assessment practices come into focus.

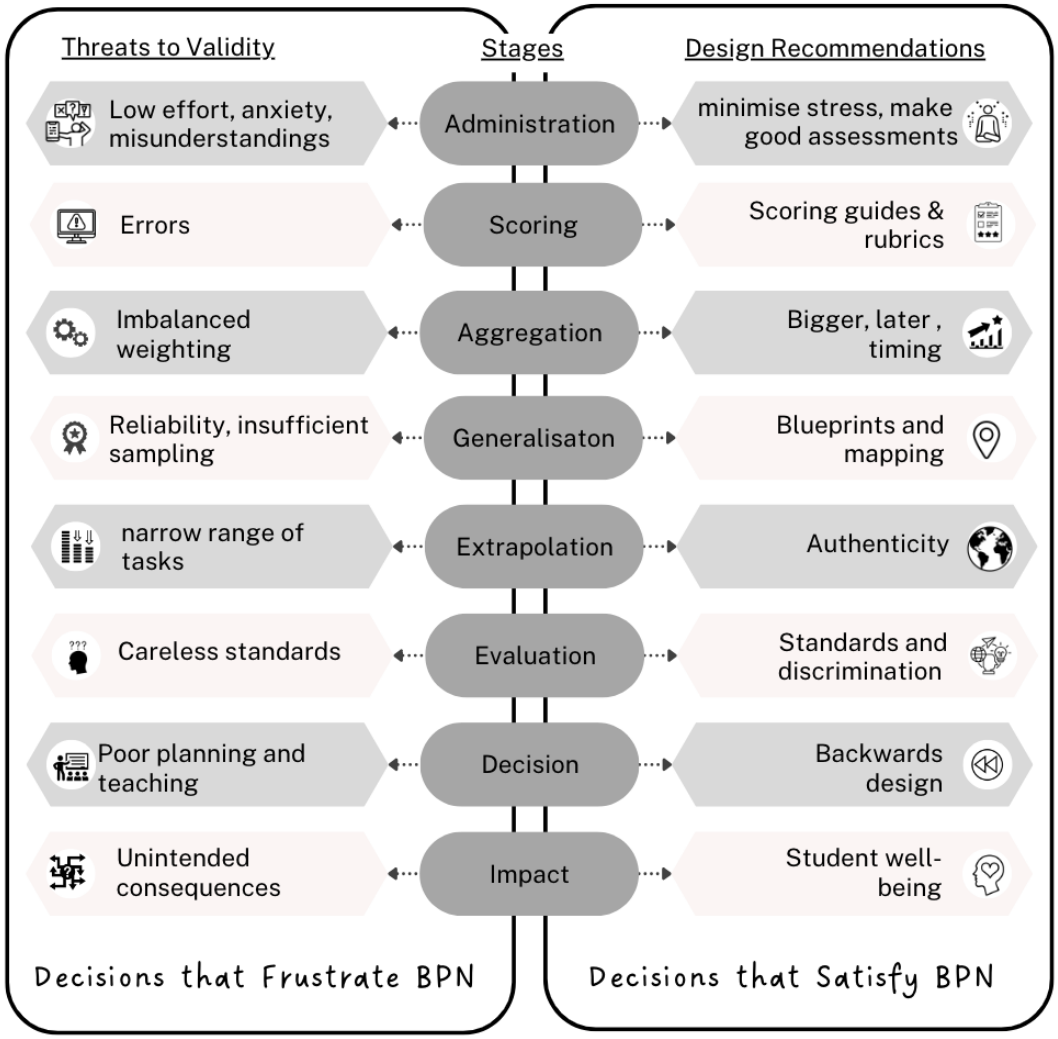
Design and Administration of High Quality Assessments

Crooks and colleagues (1996) begin their eight stages with considerations related to administering the assessment and in doing so choose to situate issues related to planning and developing assessments as outside their model. However, we recognise that these types of design considerations are critically important for post-secondary instructors and thus we expand their first stage into a larger unit that pertains to both *designing and administering* an assessment. This stage recognises the foundational role of student well-being in validity and thus immediately creates an opportunity to overlay BPNs onto each decision in the validity framework (Figure 3). *Design* and *administration* of an assessment represents the basic assessment decisions about what and how to assess. Whether choosing to use a multiple-choice exam or create an authentic opportunity to demonstrate skills, Crooks et al. (1996) list low motivation, anxiety, assessment conditions, and communication as possible threats to validity at this stage, and the empirical literature affirms this premise. When students do not give good effort, instructors do not have a clear picture of what they truly know (Wise & Smith, 2016). Student emotions complicate validity inferences because grades on an assessment are lower when students feel negative emotions and higher when they feel pleasant emotions (Pekrun et al., 2004). Additionally, noisy

testing environments, unclear instructions, time pressure, and anything else that creates a barrier preventing a student from showing their knowledge further reduces the validity inference that instructors can make.

Figure 3.

Overview of Validity, Threats, and Assessment Design Recommendations



To mitigate these threats, researchers recognise that there are both student-focused and assessment-focused solutions to validity threats at this stage. Focusing on students, there is evidence to suggest that teaching students coping strategies (McDonald & Holttum, 2020),

emotion regulation (Gao et al., 2023), or discussing students' conceptions of assessment (Zhao et al., 2022) can help them better manage assessment. Focusing on the assessment, common recommendations include minimising time pressure, checking for understanding, providing all resources to students, reducing distractions, accommodating students, and making individual assessments less high-stakes (Wise & Smith, 2016). A growing body of research literature (e.g., Jones et al., 2021) as well as policy documents (e.g., Lifelong Learning Platform, 2021) suggests that these assessment-focused strategies should be considered the bare minimum that instructors can do to administer assessments in ways that position students to best demonstrate their learning. Importantly, these specific recommendations satisfy our dual lens of BPN and validity.

Sense-Making

We combine the next four stages into the broader unit we are calling *sense-making* as instructors do the work associated with making sense of assessment data including tasks such as grading discrete assessments and determining the potential breadth of inferences. The second stage of the validity model is *scoring* of the assessment in which threats to validity such as making scoring errors, being too subjective or too rigid, and attending to irrelevant criteria can reduce the validity of inferences (Crooks et al., 1996). The third stage is *aggregation* of the scores to produce some form of a combined score. Here, major threats to validity include concerns with how similar tasks are and how they are weighted in a total. In terms of negating these threats, researchers recommend instructors turn to various scoring guides and rubrics. For example, Kan and Bulut (2014) ran an experiment in which 17 novice and experienced teachers were tasked with scoring 50 samples of student work which were cross randomly assigned to be scored with or without a rubric. Their results showed meaningful differences between experienced and novice teachers when there was no rubric, with novice teachers giving lower

scores. This difference was negligible when teachers used a rubric. Neither well-being nor validity can be supported when students experience errors or inconsistency.

The next two steps of the validation model are *generalisation* and *extrapolation* and these require instructors to connect individual assessments to the learner outcomes across the whole course (Crooks et al., 1996). In generalising, instructors make the claim that the assessment adequately and accurately represents the learner outcomes. Extrapolation takes this one step further by asking how well the assessment supports a real world or authentic inference. In other words, this is the space of being critical about how thoroughly and to what extent assessment data has captured what students were expected to learn as stated in outcomes. Threats to generalisation and extrapolation include poor or absent learner outcomes, over or under sampling from those outcomes, giving insufficient time for learning, and reliance on a single assessment format such as tests. If instructors do not collect sufficient evidence on the learner outcomes they need to make conclusions about, if they measure before students are ready, or if they rely on narrow forms of assessment, conclusions will be incomplete.

We offer three recommendations to mitigate these threats, all of which represent good assessment practice and ways to support students' BPN. First, blueprinting (Raymond & Grande, 2019) is a process by which instructors align their assessment with the learner outcomes and course content thereby creating a tangible connection between the two that supports generalisability. For individual assessments, blueprinting has been shown to improve test score accuracy, item differentiation, and item independence (Abdellatif, 2023). However, instructors can also blueprint the assessments across an entire course. Much like a scoring rubric, instructors can provide students with the blueprint as a study guide - a practice that has been shown to facilitate communication between the instructor and students, help students focus their studying

by emphasising heavily weighted objectives, and generate positive student attitudes towards exams (Young et al., 2019). Instructors need to push back on the myth that when students are fully informed about what assessments require, they become too easy. This is simply untrue. Second, instructors should create summative assessment opportunities only after sufficient teaching and learning have taken place. To monitor this, the main recommendation is for instructors to use formative assessment. Formative assessment serves a crucial role in guiding instructional strategies that support student learning (Black & Wiliam, 2018). Formative assessment fosters student learning because of the purposeful dialogic nature of formative assessment (Black & Wiliam, 2018). Likewise, formative assessment improves student performance on standardised assessments (Kingston & Nash, 2015). These benefits of formative assessment help the student to adequately prepare for a summative assessment. Third, the desire from students, administrators, and employers for authentic assessment corresponds with the need to support inferences of generalisation. Assessments are considered authentic when they "demand students to synthesise their knowledge and skills in a way that is in accordance with real-life situations" (Sokhanvar et al., 2021, p. 3). If learner outcomes involve creation of a product, performance of a skill, or critical thinking, even the most well blueprinted, generously timed, and reliable multiple-choice test will fall short in supporting a strong inference. Moreover, because final letter grades in an individual course become part of an overall GPA and transcript, even if an individual instructor does not feel the need to support inferences at the level of generalisation, it is important to recognise that decisions that seem like limited to a course actually go on to have broader ramifications based on subsequent inferences.

Implications of Assessment

We view the last three stages as part of a unit that pertains to the *implications of assessment* that extend from the professional judgement instructors enact as performance is *evaluated* and *decisions* are reached that have important *impacts* on students. When instructors apply professional judgement to evaluate student work they are essentially determining what it means and then making a decision on what type of action should be taken. Who should get an A? Can someone be nominated for an award? For which students, if any, would you write reference letters? The biggest threats to validity throughout these stages are a careless approach to standards, poor planning, and unintended consequences for students.

At the end of every semester instructors have to turn their assessment data into students' final grades. Guiding these decisions are policies that usually translate percentages into descriptors and letter grades (Lipnevich et al., 2020). Behind these policies and individual instructor's decisions are some form of standards setting practice that fundamentally serves the purpose of distinguishing between differently performing groups (Cizek, 2012). As such, the most important question for an instructor to answer to support strong validity inferences at evaluation is what separates one level of achievement from another. In other words, do you know what learning actually looks like? The meaning of these inferences goes beyond ensuring correct scoring and is necessary to try and produce the truest picture of students' achievement. An important step in being confident in the differences between groups can be achieved through enacting a backwards design (Wiggins & McTighe, 2005). Backwards design, as the name suggests, starts by identifying the desired results in terms of what students should know and be able to do. The next step is to determine the appropriate type of assessment evidence needed to measure those outcomes. Finally, instructors should then plan learning experiences and instruction that will prepare students for the predetermined assessment. While some may worry

that this type of close alignment makes assessment too easy or results in instructors narrowly teaching to the test, the evidence is otherwise, suggesting benefits for student engagement and instructor sense-making (Reynolds & Kearns, 2017).

The final stage of the model requires instructors to reflect on the process because "[n]o matter how technically sound the first seven steps of the assessment may be, the impact of the assessment may call the validity of the entire assessment into question" (Crooks et al., 1996, p. 279). Although instructors may not encounter students beyond a specific course, the consequences of the inferences they make endure. When students get an A they are closer to scholarships and competitive programs - regardless of how confidently the instructor believes the data justifies those consequences. As such, assessment practices should be reconsidered and revised regularly: scoring rubrics that were too lenient or harsh need to be adjusted, exams that over-sampled from a specific learner outcome need to be revised, and units on which students performed poorly may need different scaffolding. The cumulative recommendations offered in this section can guide revision work so that assessments better support assessment well-being over time.

Basic Psychological Needs without Validity

We would be remiss if we did not mention a few popular assessment practices that may benefit student assessment well-being but do so at a cost to valid inferences: participation grades, unstructured choice, and freebies. We are confident you know someone who has made these types of assessment decisions and proclaims that "students love it." Of course they do. These practices appear to support student well-being at least in part because they make it easier for students to get good grades (Daniels & Wells, 2023) separate from truly knowing the content. In other words, these are practices that let students game the system rather than practices that allow

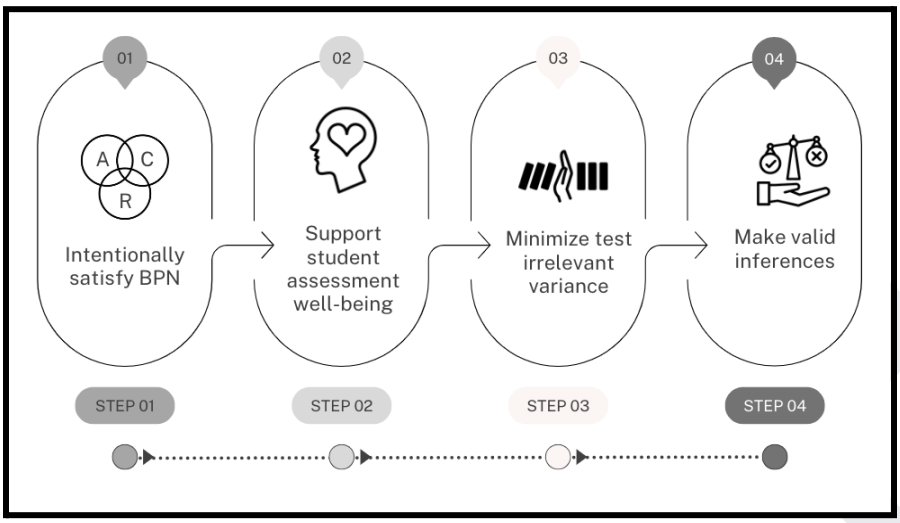
strong inferences. By extension, regardless of their possible association with well-being, these are bad assessment practices from a validity perspective. First, unless participation is a learner outcome it should not contribute to grades. If it is a learner outcome, instructors need to carefully consider how it will be scored to be able to discriminate between levels of performance. Without this attention, participation grades result in a constant being added to students' scores and grade inflation (Lipnevich et al., 2020). Second, choice within assessment is only a good practice if it does not change the sample of content on which students are evaluated. If students choose three out of five questions and each of the five questions is attached to a different learner outcome, then the instructor cannot claim that scores represent the mastery of the same content. The best way to enact choice to protect validity and well-being is to create two questions for each learner outcome and allow students to choose within. Third, allowing students to skip or drop assessments suffers from the same problem as unrestricted choice: it changes the scope of content upon which instructors make their inferences. A better solution is to look for ways to intentionally support BPNs so that students can complete all assessments without compromising their well-being.

Conceptual Model and Case Studies

We have made the case that intentional satisfaction of BPNs not only enhances student assessment well-being but also provides guidance for the type of decisions that can allow instructors to enhance the strength of valid inferences. Summing across our recommendations, we lay out this process in Figure 4 as a conceptual model of validity focused student assessment well-being that requires simultaneous professional attention to validity and BPNs. It is only through this pairing that assessment practices can take a confident step forward that cannot be accomplished by focusing exclusively on either student well-being or assessment design.

Figure 4.

Conceptual Model of Validity-Focused Student Assessment Well-being



If you are an instructor who uses traditional closed-book exams, this model is for you. We are not saying you need to get rid of your exams, but consider adjustments so that your exams better support BPNs. This not only includes writing high quality exam questions but supporting competence through blueprinting, offering scoring guides for written questions in advance of the exam, monitoring students' readiness to perform, and minimising time pressure. Autonomy can be supported within the exam by offering appropriate choice and relatedness can be supported through encouraging messages, delivering feedback in personal ways, and offering explanatory rationales for all of these decisions. Try to invite your students to view multiple choice tests as the most appropriate assessment choice for the outcomes you are measuring and then move forward confident in the inferences you will make about student learning.

If you are an instructor who has decided traditional closed-book exams will not be part of your assessment practice, this model is also for you. The additional choice, creativity, and planning required by less traditional assessments require you to give students sufficient structure, time, and resources that the opportunity does not create a different type of assessment stress. In

particular, it is critical to ensure that your assessment choices adequately align with learner outcomes by considering a blueprint across the whole course. In addition, we encourage you to involve students in the co-creation of scoring guides so that they are clear on the expectations of novel assessments. Neither well-being nor validity are supported when students experience confusion, so attending to clarity in instructions, providing sufficient timing, as well as ensuring equitable access to materials will be important in non-traditional assessments. Finally, we suggest you create a clear picture of what "excellent" looks like and be able to fairly distinguish levels of performance keeping in mind the long term implications of the inferences you make based on your data.

For the research to continue moving forward, both of these approaches need to be formally evaluated. Instructors can undertake this type of evaluation on their own and publish work pertinent to their specific field as a form of scholarship of teaching and learning (Glassick, 2000). Alternatively, evaluation programs could be embedded into institutional centres for teaching and learning that already provide support to instructors in course design and delivery. Finally, a combination of these efforts could be used to advance a program of research that systematically studied the effectiveness of using BPN to guide assessments the same way it has been done to guide instruction (Reeve & Cheon, 2021). Although all the recommendations in this chapter are based on decades of evidence in the domain of instruction, it will be important to test their effectiveness for assessment specifically.

Conclusion

Of all the contributors to stress in the lives of post-secondary students, assessment is particularly relentless and tied to substantial consequences for their future. With student mental health being a major priority on campuses around the globe, the time has come for instructors to

reexamine assessment practices to better promote student well-being. Perhaps instructors need to accept this priority if not for students, then for the validity of their assessments, because as long as students approach assessment filled with anxiety, unable to exert their full effort, concerned about fairness, or with low beliefs in their possibility of success, their compromised well-being interferes with making valid inferences about learning - and that is a core professional responsibility of instructors. By considering assessment decisions from the theoretical lens of basic psychological needs (Vansteenkiste et al., 2023), instructors can consistently make choices that satisfy rather than frustrate students' BPNs thereby improving well-being. Student well-being is both the beginning and the end of this story. The significance of well-being extends beyond making students feel good; it allows students to perform at their best, which in turn further improves well-being and increases the validity of the assessment. Rather than leaving well-being to institutional policies, instructors in higher education are uniquely poised to enact a positive feedback loop that allows well-being, performance, and validity to work together for the benefit of post-secondary students.

References

Abdellatif, H. (2023). Test results with and without blueprinting: Psychometric analysis using the Rasch model. *Educación Médica, 24*(3).

Ahmadi, A., Noetel, M., Parker, P. D., Ryan, R. M., Ntoumanis, N., Reeve, J., ... & Lonsdale, C. (2023). [In Press] A classification system for teachers' motivational behaviours recommended in self-determination theory interventions. *Journal of Educational Psychology*.

Bearman, M., Dawson, P., Bennett, S., Hall, M., Molloy, E., Boud, D., & Joughin, G. (2017). How university teachers design assessments: A cross-disciplinary study. *Higher Education*, *74*, 49-64.

Benita, M., Benish-Weisman, M., & Matos, L. (2020). Integrative and suppressive emotion regulation differentially predict well-being through basic need satisfaction and frustration: A test of three countries. *Motivation and Emotion, 44*(2), 67–81.

Benlahcene, A., Kaur, A., & Awang-Hashim, R. (2020). Basic psychological needs satisfaction and student engagement: The importance of novelty satisfaction. *Journal of Applied Research in Higher Education, 13*(5).

Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well‐being as they progress through university. *Studies in Higher Education, 35*(6), 633-645.

Black, P. J., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education, 25*(3).

Bowe, K. (2023). *College students and depression: A guide for parents.* Mayo Clinic. Available https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/college-students-and-depression

Brown, G. T., & Harris, L. R. (Eds.). (2016). *Handbook of human and social conditions in assessment*. Routledge.

Bryan, C., & Clegg, K. (Eds.). (2019). *Innovative assessment in higher education: A handbook for academic practitioners (2nd Edition)*. Routledge.

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-Deeder, J., Duriez, B., Lens, W., Matos, W., Mouratidis, I., Ryan, R. M., Sheldon, K. M., Soenens,

B., Van Petegem, S, & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion, 39*, 216–236.

Cizek, G. J. (2012). An introduction to contemporary standard setting: Concepts, characteristics, and contexts. In *Setting performance standards* (pp. 3-14). Routledge.

Crooks, T. J., Kane, M. T., & Cohen, A. S. (1996). Threats to the valid use of assessments. *Assessment in Education: Principles, Policy & Practice, 3*(3), 265-286.

Daniels, L. M., & Wells, K. (2023). *Connecting students' lived experiences of classroom assessment in higher education with wellness* [Manuscript in preparation]. Faculty of Education, University of Alberta.

Daniels, L. M., Geogan, L. D., & Parker, P. C. (in press). The role of fairness and basic psychological needs in understanding dyslexic students' emotions in classroom assessment. *Learning Disabilities: A Contemporary Journal.*

Daniels, L.M., Pelletier, G, Radil, A. I., & Goegan, L.D (2021). Motivating Assessment: How to Leverage Summative Assessments for the Good of Intrinsic Motivation. In Sharon Nichols & Divya Varier (eds.). *Theory to Practice: Educational Psychology for Teachers and Teaching (Teaching on Assessment*).

Daniels, L. M., & Bulut, O. (2020). Students' perceived usefulness of computerized percentage‐only vs. descriptive score Reports: Associations with motivation and grades. *Journal of Computer Assisted Learning*, *36*(2), 199-208.

Deiner, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575.

Ellison, L., & Jones, D. (2019). First year law students: The impact of assessment type on attainment. *Assessment & Evaluation in Higher Education*, *44*(2), 283-293.

Gao, C., Liu, C., Feng, S., & Luo, J. (2023). Regulating test anxiety by joy: Based on the Mutual Promotion and Mutual Counteraction (MPMC) Theory of Affect. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues, 42*(20), 17219–17230.

Gibbs, G. (2010). *Using assessment to support student learning.* Leeds Met Press.

Glassick, C. E. (2000). Boyer's expanded definitions of scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching. *Academic Medicine*, *75*(9), 877-880.

Goegan, L. D., Parker, P. C., & Daniels, L. M. (in press) Connecting Basic Psychological Needs and Assessment: Perspectives of Postsecondary Students with Dyslexia. *Journal of Postsecondary Education and Disability, 36,* 241-254.

Greenspoon, P. J., & Saklofske, D. H. (2001). Toward an integration of subjective well-being and psychopathology. *Social Indicators Research, 54*, 81–108.

Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International journal of educational research*, *102*, 101586.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, *77*(1), 81-112.

Hellemans, K., Abizaid, A., Gabrys, R., McQuaid, R., & Patterson, Z. (2020). For university students, COVID-19 stress creates perfect conditions for mental health crises. *The Conversation.* Available from: https://theconversation.com/for-university-students-covid-19-stress-creates-perfect-conditions-for-mental-health-crises-149127.

Herrera, D., Matos, L., Gargurevich, R., Lira, B., & Valenzuela, R. (2021). Context matters: Teaching styles and basic psychological needs predicting flourishing and perfectionism in university music students. *Frontiers in Psychology, 12.*

Hossain, S., O'Neill, S., & Strnadová, I. (2023). What constitutes student well-being: A scoping review of students' perspectives. *Child Indicators Research, 16*(2), 447-483.

Howell, J. L., & Sweeny K. (2019). Fulfilling psychological needs predicts less sleep disruption and worry while awaiting uncertain news. *Stress Health, 35*(3), 277–288.

Jones, E., Priestley, M., Brewster, L., Wilbraham, S. J., Hughes, G., & Spanner, L. (2021). Student wellbeing and assessment in higher education: The balancing act. *Assessment & Evaluation in Higher Education*, *46*(3), 438-450.

Kan, A., & Bulut, O. (2014). Crossed random-effect modeling: examining the effects of teacher experience and rubric use in performance assessments. *Eurasian Journal of Educational Research, 57,* 1-28.

Kaya, M., & Erdem, C. (2021). Students' well-being and academic achievement: A meta-analysis study. *Child Indicators Research, 14*(5), 1743-1767.

Kingston, N., & Nash, B. (2015). Formative assessment: A meta‐analysis and a call for research. *Educational Measurement: Issues and Practice, 34*(2).

Klein-Collins, B., & Hain, P. (2009). Prior learning assessment: How institutions use portfolio assessments. *The Journal of Continuing Higher Education*, *57*(3), 187-189.

Lewis, J., & Bolton, P. (2023). *Student mental health in England: Statistics, policy, and guidance.* House of Commons Library, UK Parliament.

Lifelong Learning Platform. (2021). Rethinking assessments: Prioritising students' wellbeing. https://lllplatform.eu/lll/wp-content/uploads/2021/12/PP21-scaled.jpg

Linden, B., Stuart, H., & Ecclestone, A. (2022). Trends in post-secondary student stress: A pan-Canadian study. *The Canadian Journal of Psychiatry*.

Lipnevich, A. A., Guskey, T. R., Murano, D. M., & Smith, J. K. (2020). What do grades mean? Variation in grading criteria in American college and university courses. *Assessment in education: Principles, policy & practice*, *27*(5), 480-500.

Marsh, H. W., Pekrun, R., Parker, P. D., Murayama, K., Guo, J., Dicke, T., & Arens, A. K. (2019). The murky distinction between self-concept and self-efficacy: Beware of lurking jingle-jangle fallacies. *Journal of Educational Psychology, 111*(2).

Martela, F., & Sheldon, K. M. (2019). Clarifying the concept of well-being: Psychological need satisfaction as the common core connecting eudaimonic and subjective well-being. *Review of General Psychology, 23*(4), 458–474.

Martela, F. (2023). Self-Determination Theory as the science of eudaimonia and good living: Promoting the better side of human nature. *The Oxford Handbook of Self-Determination Theory*, 309.

McDonald, A., & Holttum, S. (2020). Primary-school-based art therapy: A mixed methods comparison study on children's classroom learning. *International Journal of Art Therapy: Inscape, 25*(3), 119–131.

McManus, S., & Gunnell, D. (2020). Trends in mental health, non-suicidal self-harm and suicide attempts in 16–24-year old students and non-students in England, 2000–2014. *Social Psychiatry and Psychiatric Epidemiology, 55*(1).

Messick, S. (1984). The psychology of educational measurement. *Journal of Educational Measurement, 21*(3), 215–237.

Myyry, L., Karaharju-Suvanto, T., Virtala, A. M. K., R Raekallio, M., Salminen, O., Vesalainen, M., & Nevgi, A. (2022). How self-efficacy beliefs are related to assessment practices: A study of experienced university teachers. *Assessment & Evaluation in Higher Education*, *47*(1), 155-168.

National College Health Assessment. (2019). *NCHA Spring 2019 press release and executive summary.* Healthy Campus Alberta.

Oram, R., & Rogers, M. (2022). Academic procrastination in undergraduate students: Understanding the role of basic psychological need satisfaction and frustration and academic motivation. *Canadian Journal of Education, 45*(3), 619–645.

Othman, N., Ahmad, F., El Morr, C., & Rivto, P. (2019). Perceived impact of contextual determinants on depression, anxiety and stress: A survey with university students. *International Journal of Mental Health Systems 13*(17).

Pekrun, R., Goetz, T., Perry, R. P., Kramer, K., Hochstadt, M., & Molfenter, S. (2004). Beyond test anxiety: Development and validation of the Test Emotions Questionnaire (TEQ). *Anxiety, Stress & Coping*, *17*(3), 287-316.

Raymond, M. R., & Grande, J. P. (2019). A practical guide to test blueprinting. *Medical Teacher, 41*(8), 854–861.

Reeve, J., & Cheon, S. H. (2021). Autonomy-supportive teaching: Its malleability, benefits, and potential to improve educational practice. *Educational Psychologist*, *56*(1), 54-77

Reynolds, H. L., & Kearns, K. D. (2017). A planning tool for incorporating backward design, active learning, and authentic assessment in the college classroom. *College Teaching*, *65*(1), 17-27.

Russell, M. A., Reavley, N., Williams, I., Li, W., Tarzia, L., Chondros, P., & Sanci, L. (2023). Changes in mental health across the COVID-19 pandemic for local and international university students in Australia: A cohort study. *BMC Psychology, 11*(55).

Ryan, R. M., Reeve, J., Kaplan, H., Matos, L., & Cheon, S. H. (2023). Education as flourishing: Self-Determination Theory in schools as they are and as they might be. *The Oxford handbook of self-determination theory,* 591-618.

Ryan, R. M. (Ed.). (2023). *The Oxford handbook of Self-Determination Theory.* Oxford University Press.

SCSC. (2020). *Canadians' mental health during the COVID-19 pandemic.* Statistics Canada.

Searle, M., & Poth, C. (2021). Collaborative evaluation designs as an authentic course assessment. *Canadian Journal of Program Evaluation*, *35*(3), 422-436.

Sokhanvar, Z., Salehi, K., & Sokhanvar, F. (2021). Advantages of authentic assessment for improving the learning experience and employability skills of higher education students: A systematic literature review. *Studies in Educational Evaluation*, *70*, 101030.

Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of psychotherapy integration*, *23*(3), 263.

Vansteenkiste, M., Soenens, B., & Ryan, R. M. (2023). Basic psychological needs theory: A conceptual and empirical review of key criteria. *The Oxford handbook of self-determination theory*, 84-123.

Von der Embse, N., Jester, D., Roy, D., & Post, J. (2018). Test anxiety effects, predictors, and correlates: A 30-year meta-analytic review. *Journal of affective disorders*, *227*, 483-493.

Wass, R., Timmermans, J., Harland, T., & McLean, A. (2020). Annoyance and frustration: Emotional responses to being assessed in higher education. *Active Learning in Higher Education, 21*(3), 189-201.

Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Ascd.

Wise, S. L., & Smith, L. F. (2016). The validity of assessment when students don't give good effort. In *Handbook of human and social conditions in assessment* (pp. 204-220). Routledge.

Young, K. J., Lashley, S., & Murray, S. (2019). Influence of exam blueprint distribution on student perceptions and performance in an inorganic chemistry course. *Journal of Chemical Education, 96*(10), 2141–2148.

Yu, S., Zhang, F., Nunes, L. D., Deng, Y., & Levesque-Bristol, C. (2020). Basic psychological needs as a predictor of positive affects: A look at peace of mind and vitality in Chinese and American college students. *The Journal of Positive Psychology, 15*(4), 488–499.

Zhao, A., Brown, G. T. L., & Meissel, K. (2022). New Zealand students' test-taking motivation: an experimental study examining the effects of stakes. *Assessment in Education: Principles, Policy & Practice, 29*(4), 397–421.