Student Engagement Project

Prepared for the Upper Grand District School Board (UGDSB) by
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Executive Summary

This report presents key findings from a comprehensive Engagement Research Project conducted to explore evidence-based measures and methodologies to assess student engagement and attitudes toward lifelong learning. It is part of the development and implementation of Upper Grand District School Board's (UGDSB) multi-year plan (2022-2026). One of the key pillars focuses on fostering a love for lifelong learning among K-12 students. Amid evolving educational priorities, the UGDSB sought assistance to evaluate current measures of student engagement and provide recommendations to improve these measurement tools, ensuring their data collection practices align with current school board initiatives and opportunities.

Our study began with a thorough scoping review of the different types of student engagement used in the education literature. After identifying the different types of engagement, we examined the existing WHY survey instrument used by UGDSB. We analyzed 44 variables from the WHY survey, focusing on student engagement in grades 7-12. Because of differing response categories between grades 7/8 and 9-12, the data were analyzed separately for these groups. The analysis employed exploratory factor analysis and Cronbach's alpha to determine the internal consistency of different engagement scales.

We found that relational engagement, while having many items, could be reduced to three factors: friendships, feelings of belonging/inclusion, and relationships with adults. Affective learning engagement (enjoyment of learning, importance of education, support received, interest in learning, and feeling safe at school) showed good internal consistency but could benefit from more targeted items. The researchers noted that the items related to relationships with adults were particularly weak, especially for younger students, suggesting the need for clearer wording (e.g., focusing on teachers rather than the broad term "adults"). Furthermore, participational engagement, affective engagement, and cognitive engagement were underrepresented in the survey, highlighting the need for additional items to capture these concepts.

Referring to the literature, we developed the suggested items and brought these and other retained items from the survey to two focus groups with UGDSB students. Students gave feedback on question wording and perceived meaning. Their insights helped us to further refine the items for the pilot survey that was then administered to a sample of students.

The pilot study of student engagement surveyed 271 students (grades 4-12) was undertaken by select classes at UGDSB. Some items were found to be weak and were recommended for removal, while others demonstrated strong internal consistency and were retained. We successfully refined several engagement survey questions, identifying strong and weak items based on internal consistency (Cronbach's alpha) and factor loadings. The weakest area was self-regulatory engagement, where the alpha was only 0.47 overall, indicating poor internal consistency. This suggested the need for future surveys to explore additional self-regulatory items drawn from established psychological scales. In contrast, relational engagement showed strong internal consistency (alpha = 0.78 overall), and the items measuring affective school engagement (after removing a poorly fitting item) had an alpha of 0.88. Our findings also suggested removing items relating to “outside of school" from affective learning and motivational engagement scales, as they lowered the internal consistency. Finally, participatory engagement (activities) and participatory engagement (rules) showed acceptable internal consistency.

Actionable Steps for Improving Engagement Surveys

- Refine Self-Regulatory items: Explore established psychological indices of self-regulation (like those by Buris et al., 2016) to find items with better internal consistency.
- Remove weak items: Remove the identified weak items (those related to personal safety and learning outside of school) from the survey instrument.
- Standardize response scales: Use consistent Likert scales (1-5) across all items and age groups for simplified and consistent analyses.
- Consider age differences: While the overall results were good, consider analyzing data separately for elementary and high school to ensure responsiveness across age groups.

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Systematic Review of Literature

Introduction

In the dynamic landscape of K-12 education, fostering student engagement is a cornerstone for promoting academic achievement and lifelong learning; it not only enhances school experiences but cultivates a deeper connection to learning that transcends traditional academic boundaries[1], in that it can bridge the gap between theoretical knowledge taught in schools and real-world application while nurturing a passion for lifelong learning.

Research shows that students become more disengaged as they progress from elementary to high-school (Audas & Willms, 2002; Christenson et al., 2012; Klem & Connell, 2004; Willms, 2003). K-12 schools are investigating ways to promote student success and encourage student engagement in formal and informal educational settings. As a starting point for the Upper Grand District School Board's engagement research project we ask, "*What is the current landscape of K-12 engagement and lifelong learning in the literature, and what are the best practices for studying student engagement?"* In conducting this systematic literature review, we analyze the study of student engagement as it is defined and studied in K-12 education settings. We briefly present the key theories and concepts identified in the literature including self-determination theory, self-systems process model, bioecological systems theory, and social capital theory. We then present a breakdown of our systematic review process which includes how we analyzed the literature. Our findings explain how previous literature conceptualized and studied student engagement and lifelong learning, the relationship between the two concepts, and the effective research practices gleaned from the literature that we can incorporate into the UGDSB research project. Our review concludes with a glimpse into current student engagement practices and strategies of several Ontario School Boards.

Key Theories and Concepts in the Literature

The overall theme identified in the literature on student engagement and lifelong learning is the notion that environment perceptions and interactions impact students' patterns of learning, actions, and behaviours in school, which then influence their academic performance (Audas &

[1] By "traditional academic boundaries," we are referring to the traditional confines often associated with structural classroom learning, such as standardized curriculum, assessment methods, and teacher-led instruction.

Willms, 2002; Tao et al., 2022; Wong et al., 2024). We have chosen to highlight several theories cited in the literature that match the overall theme and sentiment of engagement research: self-determination theory, bioecological systems theory, and social capital theory.

Self-Determination Theory

Tao et al. (2022) used self-determination theory (SDT) in their meta-analyses of the relationship between students' received teacher support engagement, and academic achievement. According to SDT, students have an innate need to control their learning, make their own decisions, achieve desired competencies, and maintain caring relationships with teachers (Tao et al., 2022). In other words, social contexts fuel engagement by fulfilling students' basic needs for relatedness, autonomy, and competence (Rickert & Skinner, 2022). According to Rickert and Skinner (2022), *relatedness* includes sense of belonging and connection and refers to the desire to feel securely connected to one's social environment and to be worthy and capable of respect and love. *Autonomy* includes sense of willingness and ownership in one's actions, and refers to the connectedness between one's actions, values, and personal goals, and the desire to have control over the initiation, maintenance, and regulation of activity. *Competence* is the mastery of effectiveness, which refers to the need to feel capable of producing desired outcomes and avoid negative/unwanted outcomes. So, when students perceive that the learning environment can fulfill the desires for relatedness, autonomy, and competence, they become motivated to improve their academic performance. Parents and teachers play an important role in academic engagement and achievement (Klem & Connell, 2004; Rickert & Skinner, 2022; Tao et al., 2022); notably, when parents and teachers provide affection and involvement in a student's education, the student is more likely to adopt social goals and values they project and are more motivated to participate in learning activities parents and teachers endorse (Rickert & Skinner, 2022).

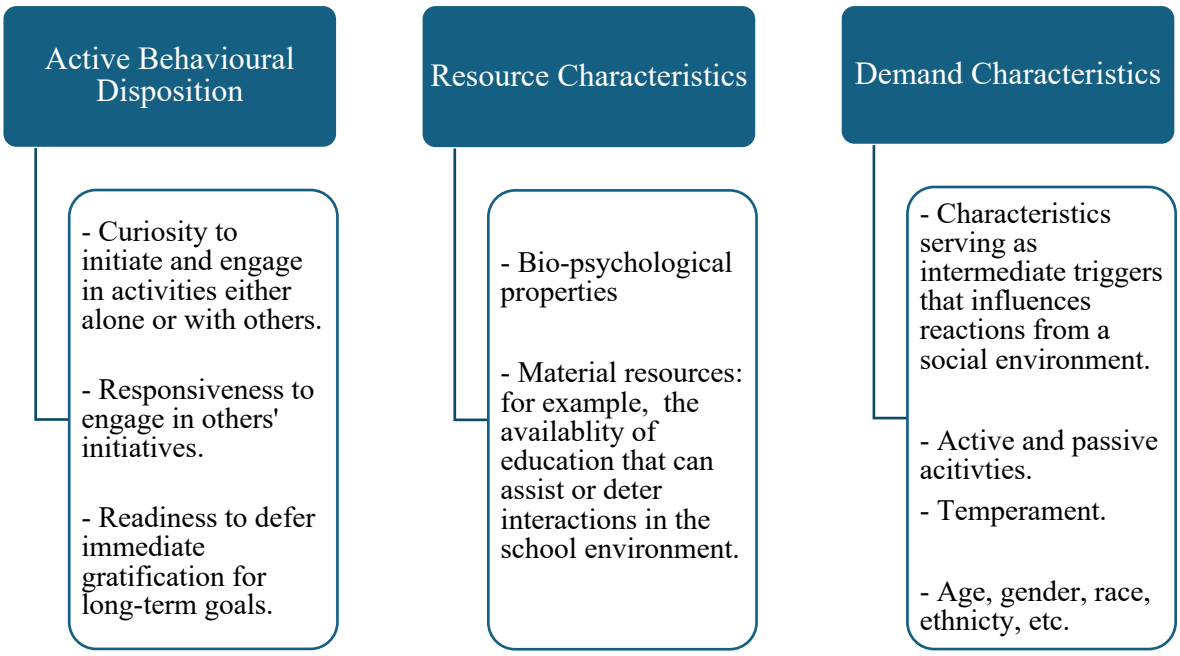
Self-Systems Process Model is considered a micro theory under the umbrella of self-determination theory (Rickert & Skinner, 2022). It is a motivational model that aims to explain linkages between individual experiences within a social context, patterns of action, self-system processes, and outcomes of performance (Klem & Connell, 2004; Tao et al., 2022). Appraisals of the self in relation to ongoing activities are generated to evaluate whether the individual's basic needs are being met. If they are not, internalized adjustments to the individual's needs are made (Finn & Zimmer, 2012). The actions resulting from this process may take positive or negative

forms, which are reflected in student engagement and behaviour/emotions (Finn & Zimmer, 2012). According to this model, schools that support competence, relatedness, and autonomy have higher levels of student engagement and academic success (Connell et al., 1994; Finn & Zimmer, 2012).

Bioecological Systems Theory

Coined by Urie Bronfenbrenner as an extension of ecological systems theory, bioecological systems theory maintains that process-, person-, context-, and time-related factors interact to form how students function in the academic setting; the experiences students actively participate in that capture student-environment interactions (teacher-student, peer-peer interactions, etc.) are the key drivers of student development (El Zaatari & Maalouf, 2022; Hayes et al., 2017; Wong et al., 2024). *Process-related factors* include all interactions that occur between developing individuals and their environment, and Bronfenbrenner emphasized the importance of positive relationships in overcoming potential damages caused by negative interactions and environment. *Person-related factors* focus on the influence of biological characteristics on one's development. Hayes et al. (2017) identified three characteristics of a developing individual that shape and are shaped by experiences in a particular context: (1) active behavioural disposition, (2) resource characteristics, and (3) demand characteristics. These are outlined with examples in Figure 1. *Context-related factors* cover all the ecological systems identified in Bronfenbrenner's ecological systems theory and are believed to be the most critical components in understanding an individual's development (El Zaatari & Maalouf, 2022). Finally, *time-related factors* include both chronological time and events; these include changes that occur in the environment, family life, socioeconomic structures, stages of biological development, etc. For example, Wong et al. (2024) used bioecological systems theory to explore whether a student's geographical region of residence (context), age (time), and gender (person) moderated engagement-outcome associations.

Figure 1. Hayes et al.'s (2017) Characteristics of a Developing Individual.



Social Capital Theory

Social capital refers to actual or potential resources accumulated from social relationships among individuals, families, community groups, social networks, etc. (Bourdieu, 1986). Within the social environment, an individual's actions depend on the expectations, demands, norms, and values of others within that environment (Dewey 1966). This is particularly pertinent within the school setting as students are expected to respond to the expectations, demands, and norms established by the governing educational bodies. Audas and Willms (2002) suggest that engagement is closely related to social capital in its functional process through the latter's emphasis of networks and norms that build toward future success. Coleman (Audas & Willms, 2002; Coleman, 1988) suggested that high levels of social capital can contribute to encouraging young people to remain in school and partially equalize some socioeconomic disadvantages of students' experiences.

Methods

We used a variety of search techniques to identify the literature on K-12 engagement within the last decade. Notably, we organized this literature review in the format of a systematic review. Nguyen et al. (2019) note that in contrast to a literature review, a systematic review sets a defined research question(s) and finds an answer through summarizing all relevant empirical

evidence that meets pre-defined parameters and criteria. As such, we asked, "*What is the current landscape of K-12 engagement and lifelong learning in the literature, and what are the best practices for improving and maintaining student engagement?"* To answer this question, we used the search terms "student engage[2]," and "primary" or "K-12" or "elementary" or "secondary." Our systematic review followed the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)" protocol (Moher et al., 2015), a 17-item checklist intended to facilitate effective systematic reviews.

Following the PRISMA protocol items 6-17, we used several search strategies:

1. Searching of the ERIC (Institute of Education Science) database;
2. Searching of Google Scholar on the set of key words;
3. Searching the provincial ministry websites across Canada for any environmental scans or similar exercises in other jurisdictions; and
4. Searching Google for the "grey literature" from education policy organizations like People for Education and other similar organizations across Canada.

Data Analysis

We used reflective thematic analysis (Braun & Clarke, 2019) to conduct our systematic review. In using reflective thematic analysis, every decision made during data analysis and reporting is thoughtful in that the researcher remains mindful of any pre-existing understandings and theoretical assumptions informing their use of thematic analysis to study the topic at hand (Braun & Clarke, 2019). Braun and Clarke (Clarke et al., 2015) identified six phases of thematic analysis: (1) *Familiarization*, or data analysis through in-depth understanding of, and engagement with, a data set. This first stage assists the researcher in developing their analysis beyond a base-level meaning; (2) *Coding*, or the systematic identification and labelling of relevant features and patterns in the data; (3) In '*Searching' for themes,* one does not simply 'discover' themes that are waiting to be uncovered; rather, the researcher uses their codes to develop conceivable key patterns in the data; (4) In *reviewing themes*, the researcher checks their themes to ensure they are a good fit with the coded data and the data set as a whole, ensuring each has a central concept. (5) *Defining and naming themes* ensures the essence of the theme is understood and provides a road map for the final paper; (6) The final stage is *writing the report*,

[2] Wildcard to account for "engagement" or "engage" or "engaging" or similar variations.

where the researcher pulls together all themes and coded data to create a compelling analysis with conclusions drawn across all themes.

Findings

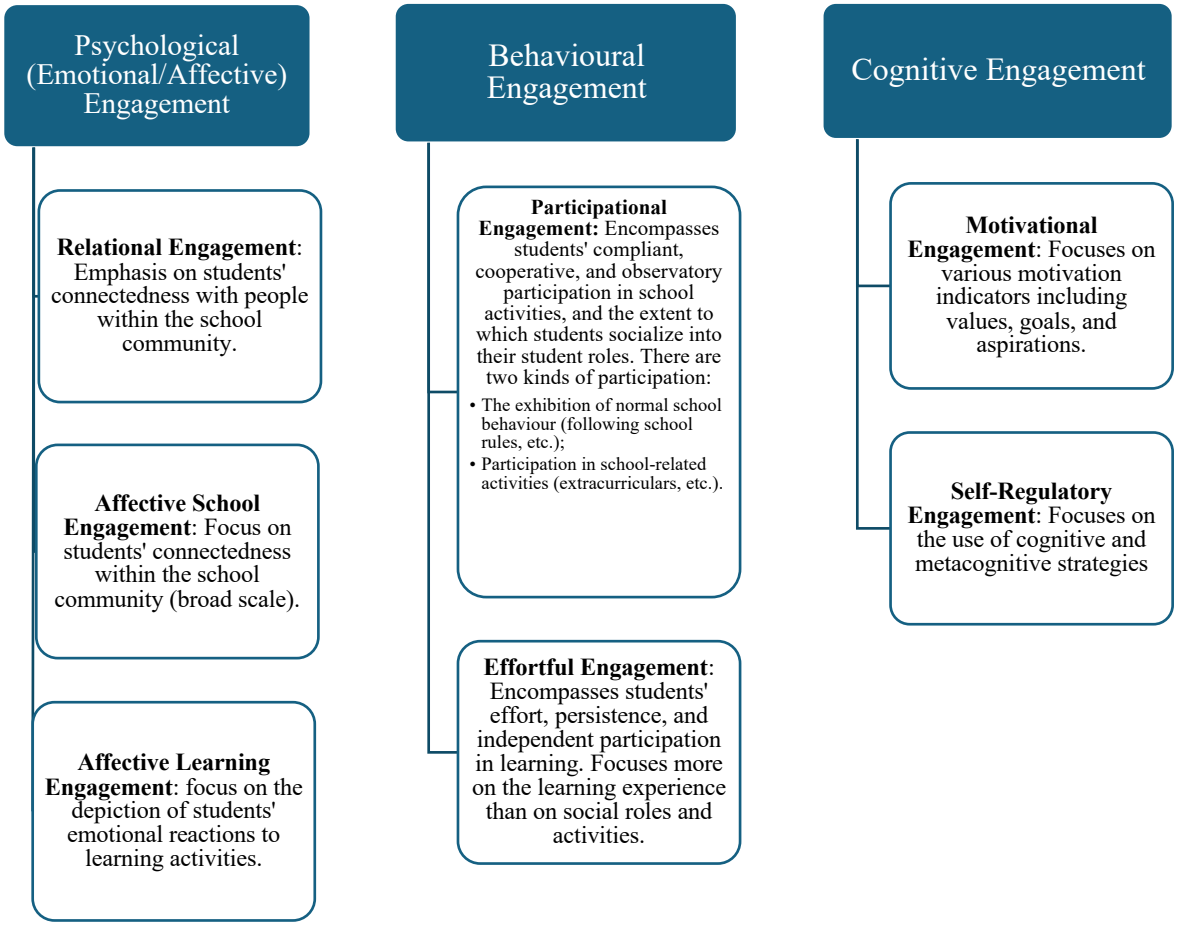
Studying K-12 Engagement

There are many definitions of engagement that could apply to the study of K-12 engagement. For example, Willms defines engagement as the disposition toward learning, working with others, etc. which is expressed through belonging and participation (2003). More specifically, Addis et al., note that *K-12 engagement* is best defined as one's interest in and satisfaction with school that produces voluntary attendance, willing cooperation, active participation, and learning progress (Addis et al., 2024). Engagement requires partnership with and between students and teachers so learning is co-constructed, which requires supportive relationships, enabling resources, stimulating opportunities and useful/impactful guidance (Beairsto, n.d.).

Li and Xue (2023) describe two dimensions of student engagement: (1) campus, or school engagement which includes values, sense of belonging, and participation, and (2) classroom engagement which includes cognitive, emotional, and behavioural engagement. Other literature in this review break down student engagement even further into three categories: *psychological* (*emotional/affective)* (emotional reactions to academic work, peers, teachers, and school), *behavioural* (participation in school-related academic, social, and extracurricular activities), and *cognitive* (inner psychological quality and investment in learning, and mental effort and motivation) (Li & Xue, 2023; Willms, 2003; Wong et al., 2024). Wong et al. (2024) breakdown these categories even further into subtypes, which are presented in Figure 2. It is important to note that student engagement ebbs and flows in that students are not fully engaged in all areas all the time – for example, a student may exhibit strong emotional engagement but weak behavioural engagement, which may negatively impact their cognitive engagement.

Studying engagement is a complex endeavour as there are various factors influencing and impacting student engagement, which subsequently places student engagement in a multifaceted position for analyzing its impact on student achievement. Willms (2003) notes that engagement should not be viewed simply as a precursor to academic achievement and treated as a control variable in monitoring activities and in educational research; rather, it is an important part of the student learning experience that needs to be studied as a focal variable.

Figure 2. Engagement Category Sub-Types and Characteristics.



Given the various definitions of engagement and its various components, we believe *sense of belonging* is a crucial element that is found in both emotional and behavioural engagement. Sense of belonging is used to describe individuals' innate need for social belonging through interaction and long-term interpersonal relationships with others (Ahmadi et al., 2020; Baumeister & Leary, 1995). When individuals lack positive social attachments, they are more likely to experience both psychological and physical health issues (Baumeister & Leary, 1995). Developing social belonging is particularly important for youth, which makes the school environment a crucial site in this process. Students develop their social belonging, or "school belonging" through interactions and relationships with teachers, administration, and peers, and is strengthened through positive interactions and support. Considering that engagement requires a partnership between teachers and students to co-construct an impactful learning environment

(Beairsto, n.d.), students' ability to develop and maintain school belonging is crucial for this process.

In his study of PISA and OECD data, Willms (2003) found moderately strong relationships between sense of belonging and participation at the school level, in that schools with high average of sense of belonging also tend to have high levels of participation on average. Interestingly, he found weak correlations between sense of belonging and participation at the student level, suggesting that teachers and guidance counselors could encounter students who have a very low level of sense of belonging, even though they participate in school activities and have strong literacy skills. In other words, high levels of engagement do not always mean that students feel like they belong, nor that they are completely satisfied with their schooling.

Resilience in Students. Academic resilience is an important concept to address in the study of student engagement. Resilient students are characterized as being able to overcome barriers posed by status or academic risk factors to achieve satisfactory outcomes (Finn & Zimmer, 2012; Irvin, 2012; Romano et al., 2021). Irvin (2012) notes that resilience is not usually measured directly, but is rather inferred when better developmental outcomes are apparent after a student experience some form of risk (like poverty, for example). Studying resilience helps to identify factors that set resilient students apart from their less resilient peers and apply necessary principles and remedies to other at-risk students (Finn & Zimmer, 2012). The various changes that occur during early adolescence (including grade-level transitions, increasing importance of peer relationships, increasing independence, school involvement, etc.) provide significant opportunities for resilience (Irvin, 2012). Finn and Zimmer (2012) note that students who are academically and socially engaged in school are likely to have higher achievement levels and are more likely to receive positive responses from teachers for their behaviour and work in the classroom, thus building their resilience. Therefore, teachers play an important role in building resilience and maintaining engagement in students.

Irvin (2012) sought to identify protective (variables that interact with and weaken the relation of a risk factor to an outcome) and promotive (variables that have key effect relations with a desired outcome) factors that create the foundation for building resilience among African American high school students from low-income rural backgrounds. He found that behavioural engagement (i.e. participation) served a promotive function by predicting higher achievement among girls and lower aggression among boys. Similarly, psychological engagement (i.e.

emotional/affective engagement) served as a promotive function in that it predicted higher achievement for girls and boys, but only lower aggression among girls. Thus, behavioural psychological engagement both have positive effects on student outcomes and resilience.

Irvin (2012) also notes that extracurriculars (within and outside of school) consistently relate to better educational outcomes, which may be especially important for at-risk youth because alternative means to maintaining involvement and interest in school may not be readily available or easy to access. Further, Irvin (2012) believes it is important for education practitioners to consider various issues that can lead to inequities in students' opportunities to participate in school activities which include the skills, expectations, and policies set by extracurricular organizers and/or school administration that might inhibit diverse student participation, and family socioeconomic conditions that influence the activities students choose, or their hesitancy to participate in the various opportunities available to them.

Lifelong Learning

It is important to identify where lifelong learning fits into the study of student engagement. According to Ng (2023), *lifelong learning* is difficult to operationalize for K-12 education because the concept originated from adult education with the notion that adult learners have the agency to learn throughout life and maintain their employability; however, in the K-12 setting, it refers to continuous and self-directed learning that occurs throughout life in an intentional manner (Ng, 2023). Ng (2023) highlights two dimensions of lifelong learning: (1) the *individual*, which includes learning that takes place throughout one's life (i.e. personal growth), self-directed and continuous learning, and learning that is influenced by individual characteristics (one's disposition, judgement, attitudes, aptitudes, and competencies); and (2) the *system*, which includes learning that is socially constructed, takes place in formal, non-formal, and informal settings, involves technology, improves one's quality of life, and is influenced by social relationships (peer-peer, student-teacher, etc.) Thus, as highlighted in our theoretical foundation, one's environment (within and outside of school) and social relationships are important factors to consider in developing strategies to improve engagement and lifelong learning in schools. The following section outlines the connections between student engagement and lifelong.

Strategies for Improving Engagement and Lifelong Learning. The literature identifies various characteristics of and strategies engagement in schools and characteristics of lifelong

learning schools. As such, we have provided a summary in Table 1 that outlines strategies for student engagement and characteristics of schools that focus on developing lifelong learners.

Table 1. Strategies for student engagement and characteristics of lifelong learning schools.

Engagement Strategies	Characteristics of Lifelong Learning Schools
Encourage parent engagement in their child's schooling through (but not limited to): - Regular, open communication channels (emails, newsletters, meetings, etc.). - Parent workshops on topics including at-home learning practices, understanding curriculum, and effective communication with teachers. - Family engagement events (family nights, open houses, cultural celebrations, etc.). - Community partnerships.	Involve the family in the life and work of the school. When families are encouraged and supported to actively participate in their child's schooling, the educational experience becomes more supportive, enriched, and impactful.
Promote self-directed learning.	Continuous, self-directed learning.
Co-constructed learning between teachers and students so the learning activities are meaningful.	Co-constructed learning strategies.
Focus on learning activities that require and instill critical thinking, inquiry, involve collaboration/substantive discussion, and that occur outside of the classroom confines.	Acknowledgement of diverse values, attitudes with subject fluidity (i.e. subjects are diverse and aim to keep all students engaged).
Use assessment not just to gather achievement data but to help students learn how to collect their thoughts, articulate what they have learned, and consider where this new information can be useful in their own lives/the future.	Teach information literacy, or the ability to collect, sort, analyze, combine, and use information (see Bryce et al., 2000, p. 12).
Keep teachers engaged and motivated.	Educators as life-long learners.
Experiential learning opportunities that are relevant to students' lives, cultures, and interests, and that promote persistence in learning.	Learners are encouraged to change personal direction when new and interesting topics for learning materialize from their curiosities.
The teaching and learning environment are inclusive, promotes the intellectual engagement and reflects	Increases the teaching/learning resources available to the school by employing the skills and knowledge of administrators, parents, business

student strengths, needs, learning preferences and cultural perspectives.	leaders and other members of the community to create and implement new learning opportunities/strategies.

According to Klem and Connell (2004), there are four key conditions that contribute to student success and engagement: (1) high standards for academic learning and conduct that are clearly outlined and reasonable; (2) meaningful and engaging pedagogy and curriculum; (3) personalized learning environments; and (4) professional learning communities among staff. Addis et al. (2024) outline three central domains required to increase student engagement: (1) *people* (educators and peers); (2) *activities*, or norms and assumptions around activities; and (3) *instruction*, which includes content delivery and methods.

People. Teachers play a crucial role in maintaining student engagement and promoting a lifelong love of learning not only as strong support systems of students; for students to take advantage of clear and concise standards for academic learning, engaging pedagogy and curriculum, and personalized learning environments, they need support from teachers who are prepared, engaged, and make them feel included in decision-making (Klem & Connell, 2004), which means they must also be encouraged to embrace life-long learning. Thus, while we investigate methods for studying student engagement and develop impactful intervention strategies for the UGDSB, we must also consider how we can support educators in this process.

As mentioned throughout this literature review, peer relationships also play an important role in student engagement (Addis et al., 2024; Beairsto, n.d.; Li & Xue, 2023; Wong et al., 2024). Peer relationships can be both positive and negative, and the size/quantity of peer groups and connections vary. Some students may require targeted counselling, peer mediation, or restructuring of peer groups to feel they belong in school and thus be more engaged; Accordingly, Addis et al. (2024) recommend that educators assess the nature and distributions of peer relationships within the wider school environment, their student groups, and within classrooms to effectively identify tensions, bullying, and exclusion amongst students.

Activities. Activities that encourage student engagement include organized sports, student organizations, and classes that involve group activities such as drama, music, and art. Students also engage in less structured activities including lunch groups, peer/friend groups, and engagement with peers on the bus. Addis et al. (2024) note that the more a student is positively engaged with a school activity, the more likely they are to engage and achieve in their academics.

That said, schools, and their various activities available to students, have informal norms, formal rules, and reputations. The informal norms of school groups and clubs may be tied to perceived social or economic status, academic reputation, sex, race and ethnicity, etc.; likewise, formal processes including admission/acceptance to groups and clubs may include limitations and standards for grades, attendance, and behaviour. As such, some students may be hesitant to join groups and activities that they do not feel welcome participating in or do not feel they meet the standards (Addis et al., 2024). Addis et al. (2024) encouraged educators to assess the norms and assumptions around various school organizations to identify and reduce (or eliminate) actual and perceived barriers to encourage participation from all interested students, particularly those who may be at-risk and/or disengaged (see Addis et al., 2024 for strategies and recommendations for expanding activity offerings in schools).

Instruction. Instructional engagement is often a challenging domain to address and is one of the most important aspects of student engagement. Addis et al. (2024) break it down into two concepts: instructional *content* and *delivery method*. First, curriculum *content* has varying levels of interest depending on student perceptions and values, which varies across grade levels; as such, the most effective methods for improving engagement with instructional content is to make content relevant to students and to identify and highlight the most exciting elements, which requires that teachers be thoroughly familiar with the content they teach, and find things they are also excited about and interested in. Second, engagement with *delivery method* can be expected to increase when teachers use methods that are relevant, interesting, and active.

Conclusion

This systematic review explored K-12 engagement and attitudes toward lifelong learning as identified in the literature through the lenses of self-determination theory, bioecological systems theory, and social capital theory. We highlight the critical roles of student autonomy, competence, and relatedness in fostering motivation and persistent engagement. Bioecological systems theory highlighted the multifaceted influences of teachers and peers on shaping students' attitudes and behaviours toward their education. Additionally, the concept of social capital underscored the relationship between social networks and supportive relationships in developing school belonging, engagement, and academic persistence. Our findings help to construct a path forward for the UGDSB's study of student engagement and attitudes toward lifelong learning in their schools.

Studying Student Engagement and Attitudes Toward Lifelong Learning

Student engagement is typically studied using self-reports, observations and interviews, but is most often measured using quantitative methods (surveys/questionnaires, grades, etc.); some studies have studied online data gathered from classroom management systems, including uploaded class assignments, responses in asynchronous discussion forums, and presence and engagement in synchronous discussion groups (Bond et al., 2023). Based on the breakdown of student engagement categories and subtypes in Figure 2, we have identified an effective way to quantitatively study student engagement within the UGDSB, which reflects the work of Talbert et al. (2019) in their study of the relationship between student-centered mathematic instruction and students' behavioural, cognitive, emotional, and social engagement in mathematics and whether the relationship differed by ethnicity. Talbert et al. (2019) categorized their measures into several groups: (1) student-centered instruction, (2) teacher-centered instruction, (3) student engagement (sub-categorized under behavioural, cognitive, emotional, and social engagement) and (4) demographics (gender, socioeconomic status, ethnicity, etc.). Categories one to three were assessed using 5-10 Likert-type scale survey items, whereas demographics were collected from school records and used as control variables in the analysis. While this is an effective model of analysis to follow in our own study, Talbert et al. (2019) identify the benefit of incorporating qualitative assessment into the study of student engagement to complement the quantitative analysis, with specific interest in conducting classroom observations. While classroom observations would be beneficial to this area of research, semi-structured interviews were identified as popular practice in our systematic review (Gaxiola Serrano, 2017; Thomas, 2015).

Using a similar methodological approach, we recommend a mixed-methods approach involving an engagement survey with various questions on engagement, school belonging, and attitudes toward lifelong learning, accompanied by focus groups to capture a diverse and representative sample of the UGDSB student population. Focus groups will allow us to collect rich details of students' experiences, attitudes, and perspectives. Further, we recommend that the survey collects information on students' sociodemographic identities (race, ethnicity, gender, sex, age/grade, etc.) to help identify the student groups who may require additional support and attention in improving their school engagement and love for lifelong learning. While conducting focus groups with students is the top priority, it would also be valuable to engage with teachers in a focus group setting to develop an understanding of their experiences with, attitudes towards,

and perspectives on student engagement and lifelong learning. This would help us effectively tailor student engagement strategies to the schools' student populations and develop methods for improving teacher engagement where necessary.

Current Practices and Strategies of Several Ontario School Boards

Table 2 outlines current engagement practices and strategies of several Ontario school boards.

Table 2. Ontario School Board Strategies for Engagement.

School board	Strategic Plan (if applicable)	Year	Notable Strategies/Goals
Thames Valley District School Board (TVDSB)	Student Achievement Plan	2023-2024	Improve students' participation in class time and learning: - Supportive and corrective responses to incidents to reduce suspensions. - Created an Attendance Taskforce. - Developed Attendance Matters Campaign, partnered with public health units to support its strategies. Improve student well-being - Developed Safe and Inclusive School Plans. - Created online Family Well-Being Community Workshop Series. - Created Mental Health Awareness Taskforce. - Developed Anti-Sex Trafficking Protocol in collaboration with community agencies.
Toronto District School Board (TDSB)	Student Achievement Plan	2024-2028	Supporting participation in class and learning: - Launching targeted attendance improvement programs tailored to grades 1-8 through school social workers and attendance counsellors. - Weekly check-ins with administration and school staff, in-school support team (IST) and student support team (SST) to explore patterns of at-risk attendance and support engagement strategies.

			- Ongoing professional development offered by attendance counsellors. Support for parents/guardians/caregivers: - Collaboration with identity-affirming community organizations. - Social Workers and attendance counsellors collaborate with school staff to address underlying factors contributing to absenteeism through targeted interventions. Direct student supports: - Reduce suspensions and expulsions where appropriate through application of more equitable student discipline strategies. - Improve student engagement, well-being, and achievement through programming in partnership with community organizations. - Working with educators to develop and implement restorative practices. - Create and deliver programming for students engaging in or at-risk of involvement in illegal activities.
Waterloo Region District School Board (WRDSB)	Strategy for student agency and voice.	2023	Let students lead: - Centre students' voices. - Increased participation and democratization of decision-making. Connect with students outside of school: - Increase engagement with organizations who can provide support to students in non-traditional learning environments. Consistent board presence in schools: - Increase familiarity and build trust within the schools. - Attend student events, participate in virtual town halls.

			Invest in student-led initiatives: - Promote their efforts in schools. - Connect them with partners who align with their work. - Provide a platform to share their initiatives and offer input about their education. Improve students' leadership and communication skills: - Student Communication Team. - Student media pool.

In the next section, we examine a data set using the findings from the systematic review of the engagement literature to guide our exploratory analyses. We now turn to the data and methods employed in the analyses which follow.

Survey Analyses

Data and Methods

The data used in the forthcoming analyses are from the Well-being Health and Youth Surveys conducted by Upper Grand District School Board in 2023. The data focus on results obtained from students in grades 7 through 12. Because the data file had different response categories for students in grades 7/8 and 9-12, we analyze data separately for students in grades 7/8 and high school students. In general, there were fewer response categories for attitudinal/Likert-type questions for grade 7/8 students compare to high school students. For example, for the statement “I feel safe at my school”, grade 7/8 student had the response categories of No, Sometimes/Sort of and Yes, while high school students had Strongly Agree, Somewhat Agree, Somewhat Disagree, and Strongly Disagree. As these are not statistically comparable variables, we must analyze the subpopulations separately.

A total of 44 variables were extracted from the WHY database based on the researchers’ requests. These variables were selected after careful review of the survey instrument to explore which items appeared to assess aspects of engagement that were identified in the systematic review of the literature. Table 3 lists each item in the survey that was used in our analyses, including the variable name, question number in the survey, question wording, response categories, notes on how we recoded the response categories, and how we categorized the variable according to the systematic review, particularly the engagement types identified in Table 1.

Table 3. Overview of Variables Used in the Analyses.

1	Variable name	Question wording	Corresponding WHY survey	Target sample	Response categories	Valid responses	Coding issues	Conceptual match
2	participatelearning	I participate in my learning	26 a	All	Strongly agree Agree Disagree Strongly disagree	15,159	Recoded Likert order	Effortful engagement
3	enjoylearning	I enjoy learning	26 b	All	Strongly agree Agree Disagree Strongly disagree	15,123	Recoded Likert order	Affective learning engagement
4	strategieslearning	I use strategies to help myself learn (e.g. make a word web, make notes)	26 c	All	Strongly agree Agree Disagree Strongly disagree	15,065	Recoded Likert order	Effortful engagement

5	contributelearning	I contribute ideas in the classroom	26 d	All	Strongly agree Agree Disagree Strongly disagree	15,077	Recoded Likert order	Effortful engagement
6	havemanyfriends	I have many friends	36 a	7/8	No Sometimes/Sort Of Yes	5,413		Relational engagement
7	getalongwithothers	I get along easily with others my age	36 b	7/8	No Sometimes/Sort Of Yes	5,393		Relational engagement
8	otherswanttobefriend	Others my age want me to be their friend	36 c	7/8	No Sometimes/Sort Of Yes	5,336		Relational engagement
9	otherslikeme	Most others my age like me	36 d	7/8	No Sometimes/Sort Of Yes	5,341		Relational engagement

10	onegoodfriend	I have at least one good friend who cares about me	36 e	7/8	No Sometimes/Sort Of Yes	5,400		Relational engagement
11	feelibelong	I feel like I belong	36 f	7/8	No Sometimes/Sort Of Yes	5,361		Relational engagement
12	havemanyfriendssr	I have many friends	36 a	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,497	Recoded so ordinal	Relational engagement
13	getalongwithotherssr	I get along easily with others my age	36 b	9/12	False Mostly False Sometimes True/Sometimes False Mostly True	9,457	Recoded so ordinal	Relational engagement

					True			
14	otherswanttobefriendsr	Others my age want me to be their friend	36 c	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,412	Recoded to ordinal	Relational engagement
15	otherslikemesr	Most others my age like me	36 d	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,425	Recoded to ordinal	Relational engagement
16	onegoodfriendsr	I have at least one good friend who cares about me	36 e	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,460	Recoded to ordinal	Relational engagement

17	feelibelongsr	I feel like I belong	36 f	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,428	Recoded to ordinal	Relational engagement
18	outsider	I feel like an outsider	37 a	7/8	No Sometimes/Sort of Yes	5,323		Relational engagement
19	awkward	I feel awkward and out of place	37 d	7/8	No Sometimes/Sort of Yes	5,273		Relational engagement
20	outsidersr	I feel like an outsider	37 a	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,448	Recoded to ordinal	Relational engagement

21	awkwardsr	I feel awkward and out of place	37 d	9/12	False Mostly False Sometimes True/Sometimes False Mostly True True	9,437	Recoded to ordinal	Relational engagement
22	lonely	In general, how often do you feel lonely	53 b	7/8	Rarely/never Sometimes Often/always	5,033	Recode to ordinal	Relational engagement
23	lonelysr	In general, how often do you feel lonely	53 b	9/12	Never Rarely Sometimes Often Always	8,818	Recoded to ordinal	Relational engagement
24	valued	I am a valued part of the school community	21 a	7/8	No Sometimes/sort of Yes	5,504		Affective school engagement

25	education	My education is important to me	21b	7/8	No Sometimes/sort of Yes	5,531		Affective learning engagement
26	support	I get the support I need to learn at school	21c	7/8	No Sometimes/sort of Yes	5,536		Affective learning engagement
27	interested	I am interested in what I am learning at school	21d	7/8	No Sometimes/sort of Yes	5,541		Affective learning engagement
28	activities	I participate in school activities like clubs or sports	21e	7/8	No Sometimes/sort of Yes	5,541		Participational engagement
29	valuedsr	I am a valued part of the school community	21a	9/12	Not at all or Rarely Somewhat or sometimes Very or often	9,536	Recoded to ordinal (note that reverse scored)	Affective school engagement

					Extremely or Almost Always			
30	educationsr	My education is important to me	21b	9/12	Not at all or Rarely Somewhat or sometimes Very or often Extremely or Almost Always	9603	Recoded to ordinal (note that reverse scored)	Affective learning engagement
31	supportsr	I get the support I need to learn at school	21c	9/12	Not at all or Rarely Somewhat or sometimes Very or often Extremely or Almost Always	9565	Recoded to ordinal (note that reverse scored)	Affective learning engagement
32	interestedsr	I am interested in what I am learning at school	21d	9/12	Not at all or Rarely	9607	Recoded to ordinal (note that	Affective learning engagement

					Somewhat or sometimes Very or often Extremely or Almost Always		reverse scored)	
33	activitiessr	I participate in school activities like clubs or sports	21e	9/12	Not at all or Rarely Somewhat or sometimes Very or often Extremely or Almost Always	9,605	Recoded to ordinal (note that reverse scored)	Participational engagement
34	feelaboutschool	How do you feel about school	22	All	I love school I like school I do not really care either way I do not like school very much	15233	Recode to ordinal	Relational engagement

					I hate school			
35	safeatschool	I feel safe at my school	23a	7/8	No Sometimes/Sort of Yes	5541		Affective Learning Engagement
36	safeatschoolsr	I feel safe at my school	23a	9/12	Strongly disagree Somewhat disagree Somewhat agree Strongly agree	9621	Recoded to ordinal	Affective Learning Engagement
37	includedatschool	I feel included at my school	23b	7/8	No Sometimes/Sort of Yes	5437		Relational Engagement
38	includedatschoolsr	I feel included at my school	23b	9/12	Strongly disagree Somewhat disagree Somewhat agree	9556	Recoded to ordinal	Relational Engagement

					Strongly agree			
39	adultexpectations	Adults at my school have high expectations of me	24a	7/8	No Sometimes/Sort of Yes	5,443		Relational Engagement
40	adultsinterested	Adults at my school are interested in me	24b	7/8	No Sometimes/Sort of Yes	5402		Relational Engagement
41	adultsnotice	Adults at school notice when I am doing a good job and let me know about it	24c	7/8	No Sometimes/Sort of Yes	5492		Relational Engagement
42	adultexpectationssr	Adults at my school have high expectations of me	24a	9/12	Strongly disagree Somewhat disagree Somewhat agree Strongly agree	10148	Recoded to ordinal	Relational Engagement
43	adultsinterestedsr	Adults at my school are interested in me	24b	9/12	Strongly disagree	9,450	Recoded to ordinal	Relational Engagement

					Somewhat disagree Somewhat agree Strongly agree			
44	adultsnoticesr *NOTE: question wording is about adults, not teachers specifically	Adults at school notice when I am doing a good job and let me know about it	24c	9/12	Strongly disagree Somewhat disagree Somewhat agree Strongly agree	9545	Recoded to ordinal	Relational Engagement

Analytic Strategy

In the following sections, we examine the various concepts associated with student engagement, as identified in Table 2. To briefly review, the systematic review indicated that there were three broad types of engagement: psychological, behavioural, and cognitive. Within these broad types, there exist subtypes, which we shall consider below. First, we will examine each subtype, review its conceptual definition, and then identify the variables from the WHY survey that we categorized into this subtype, followed by rationale and statistical analysis.

The statistical analyses we perform begin with an overall examination of the patterns of correlation between the variables using simple zero-order correlation matrices for each subsample. We then move on to exploring how the individual variables in the dataset can be combined to form factors or scales that represent the general categories of engagement that were identified in the systematic review. Our statistical analyses involve exploratory factor analysis, followed by confirmation of the factors using a test of internal consistency (Cronbach's alpha). Exploratory factor analysis is used to reduce data into a more manageable set of summary variables and investigate the phenomena' underlying theoretical framework. Factor analysis is part of a family of statistical data reduction techniques. It is employed to determine the nature of the relationship's structure between the respondent and the variable. We then examine the proposed factors for their inter-item correlations to ensure they exhibit patterns of being associated with one other. In layman's terms, we are using two types of statistical tests to examine if a larger number of items can be reduced to a single broader concept index for each engagement type we are measuring. In other words, are the several items that appear to be measuring relational engagement (for example) statistically cohesive or are they not really that strongly associated?

Psychological (Emotional/Affective) Engagement

The broad umbrella term for psychological engagement includes three subtypes: relational engagement, affective school engagement, and affective learning engagement.

Relational engagement. Relational engagement focuses on pupils' relationships with individuals in the school community. In the WHY survey data, the vast majority of student engagement variables were classified by us as conceptualizing relational engagement. A total of 14 variables extracted from the WHY survey tapped into the general concept of student relationships at school.

- I have many friends.
    - Variable examines student's opinion of having social relationships
- I get along easily with others my age.
    - Variable examines student's opinion of ability to engage socially.
- Others my age want me to be their friend.
    - Variable examines student's external perception of their social desirability.
- Most others my age like me.
    - Similar to above item, variable examines student's external perception of their social desirability.
- I have at least one good friend who cares about me.
    - Measures if student has network of at least one peer.
- I feel like I belong.
    - Measures if student feels part of the larger community.
- I feel like an outsider.
    - Similar to above item, but "reverse scored."
- I feel awkward and out of place.
    - Reverse scored item of how integrated student feels into school community.
- In general, how often do you feel lonely.
    - Measures frequency of feeling isolated. This question does not specifically indicate that the loneliness is school specific, so item may be better conceptualized as one measuring depressive mood in general.
- How do you feel about school?
    - This item is a broad attitudinal statement about feeling towards school in general.
- I feel included at my school.
    - Very much like item number six above, but specifies "at my school".
- Adults at my school have high expectations of me.
    - One of three items that measures perceptions of adults at the school. It should be noted that these three items specify "adults" and not specific adults in roles, such as teachers.
- Adults at my school are interested in me.

    - Second of three items that measures perceptions of adults at the school. It should be noted that these three items specify "adults" and not specific adults in roles, such as teachers.
- Adults at school notice when I am doing a good job and let me know about it.
    - Third of three items that measures perceptions of adults at the school. It should be noted that these three items specify "adults" and not specific adults in roles, such as teachers.

The first assessment of these items is "face validity", which methodologically refers to if the items appear to be measuring what we intended them to measure – in this case relational engagement. While many items specifically indicate "at school" in the wording, others do not, and it might be the case that they are measuring symptoms of depressive mood or the ability of the respondent to feel socially included more generally than just at school. However, because school generally entails a large proportion of students' time at this age, it is likely the case that there are spillover effects from general psychological well-being and those that are specifically related to school.

Exploratory correlation matrices

Zero order correlation matrices for all 14 relational engagement items are presented in Tables 4 and 5. These preliminary analyses are presented in order to introduce the reader to the general associations among the numerous indicators of relational engagement variables examined in this report before data reduction techniques are employed. In Table 4, the results are presented for students in grades 7 and 8 (the grades in which students had slightly different response categories for several items) while in Table 5 the results are presented for students in high school.

Table 4. Correlation Matrix of Relational Engagement Items for Grade 7/8 students.

	havema~s	getalo~s	others~d	others~e	onegoo~d	feelib~g	outsider	awkward	feltlo~y	feelab~l	includ~l	adulte~s	adults~d	adults~e
havemanyfr~s	1.0000													
getalongwi~s	0.3904	1.0000												
otherswant~d	0.4164	0.4321	1.0000											
otherslikeme	0.4263	0.4559	0.5147	1.0000										
onegoodfri~d	0.2701	0.2129	0.1720	0.2031	1.0000									
feelibelong	0.4003	0.4041	0.3587	0.4051	0.2986	1.0000								
outsider	-0.2376	-0.2355	-0.1942	-0.2260	-0.1774	-0.3761	1.0000							
awkward	-0.2957	-0.2572	-0.2181	-0.2675	-0.1994	-0.4319	0.4869	1.0000						
feltlonely	-0.3259	-0.2767	-0.2710	-0.2838	-0.1859	-0.4387	0.3428	0.3832	1.0000					
feelabouts~l	0.1782	0.2507	0.2106	0.2496	0.1057	0.2751	-0.1011	-0.1695	-0.1710	1.0000				
includedat~l	0.3812	0.3542	0.3320	0.3745	0.2491	0.5257	-0.2914	-0.3304	-0.3800	0.3000	1.0000			
adultexpec~s	0.1548	0.1373	0.1752	0.1647	0.1042	0.1427	-0.0517	-0.0743	-0.0831	0.1541	0.1702	1.0000		
adultsinte~d	0.1887	0.2195	0.2700	0.3170	0.1420	0.2200	-0.1249	-0.1612	-0.1737	0.2468	0.2809	0.2995	1.0000	
adultsnotice	0.1761	0.2268	0.2448	0.2626	0.1288	0.2806	-0.1469	-0.1505	-0.1814	0.2300	0.2979	0.1671	0.3191	1.0000

In Table 4, moderately strong correlations are found between several items. Correlations range from -1.0 to +1.0, with values closer to -1 and +1 indicating stronger linear relationships. The strongest correlation is between the items that asks about the extent to which the student feels they are included at school and the extent to which they feel they belong in school (corr=0.5257). The next strongest is between the statement about others liking the student and others wanting to be friends with the student (corr=0.5147). In general, the associations between all items are moderate, although some associations with the items measuring the extent to which the student feels they are an outsider are notably weak.

Table 5. Correlation Matrix of Relational Engagement Items for Grade 9/12 students.

	havema~r	getalo~r	othe~dsr	othe~esr	onegoo~r	feelib~r	outsi~sr	awkwar~r	feltlo~r	feelab~l	includ~r	adul~esr	adulte~r	adul~dsr
havemanyfr~r	1.0000													
getalongwi~r	0.6584	1.0000												
otherswant~r	0.6364	0.7012	1.0000											
otherslike~r	0.6066	0.7017	0.7902	1.0000										
onegoodfri~r	0.4202	0.3361	0.3149	0.3231	1.0000									
feelibelon~r	0.5788	0.5873	0.5861	0.5998	0.3939	1.0000								
outsidersr	-0.4055	-0.3634	-0.3366	-0.3476	-0.3262	-0.5399	1.0000							
awkwardsr	-0.4286	-0.3935	-0.3725	-0.3661	-0.3157	-0.5456	0.7742	1.0000						
feltlonelysr	-0.3949	-0.3647	-0.3418	-0.3522	-0.2225	-0.5130	0.4361	0.4635	1.0000					
feelabouts~l	0.2034	0.2410	0.2149	0.2336	0.1410	0.3034	-0.1668	-0.1612	-0.1898	1.0000				
includedat~r	0.4172	0.4449	0.4374	0.4634	0.2534	0.5734	-0.3877	-0.3895	-0.3883	0.3495	1.0000			
adultsnoti~r	0.1979	0.2246	0.2359	0.2474	0.1895	0.3083	-0.1933	-0.1892	-0.1889	0.2958	0.3651	1.0000		
adultexpec~r	0.1883	0.1866	0.2091	0.2055	0.1458	0.1925	-0.1088	-0.1137	-0.0905	0.2031	0.2446	0.2771	1.0000	
adultsinte~r	0.2368	0.2664	0.3090	0.3129	0.1817	0.3234	-0.1879	-0.1905	-0.1809	0.3217	0.3811	0.4997	0.4252	1.0000

In Table 5, there are stronger associations between some variables for the high school students compared to the younger students. This may be partly due to the differences in the response item scale structure for the high school students and the grade 7/8 students. The association between the statement that others like the student and others want to be friends with the student is 0.7902, which is strong and suggests the items are measuring similar ideas. The statement about feeling like an outsider and feeling awkward was also strong at corr= 0.7742. There are also several other correlations in the 0.5 to 0.7 range.

Exploratory factor analysis

Because we have 14 potential indicators of relational engagement, this approach will assist in creating one or more scales that will condense the information into fewer items. Below exploratory factor analysis was undertaken with a varimax rotation, which is a specification that is used to identify variables to create indices (i.e. a single variable that is made up of multiple items).

Factor analysis for the grade 7 and 8 students along the relational engagement items indicated that there was a three-factor solution in the data. This means that instead of one factor encompassing all relational engagement, three factors were found. The factor loadings in the above output are highlighted below.

Table 6. Factor Analysis Loadings for Relational Engagement Items, Grades 7 and 8.

Variable	Factor1	Factor2	Factor3
havemanyfriends	0.6813	0.2698	0.0204
getalongwithothers	0.6998	0.1886	0.1111
otherswanttobefriend	0.7619	0.0723	0.1598
otherslikeme	0.7369	0.1483	0.2074
onegoodfriend	0.2996	0.3061	0.0634
feelibelong	0.4266	0.6047	0.1958
outsider	-0.0632	-0.7663	-0.0123
awkward	-0.1216	-0.7728	-0.0578
feltlonely	-0.2578	-0.628	-0.08
feelaboutschool	0.2013	0.1546	0.51
includedatschool	0.3915	0.4794	0.3296
adultexpectations	0.0851	-0.0232	0.6409
adultsinterested	0.1902	0.0829	0.7161
adultsnotice	0.161	0.1737	0.6035

Table 7. Factor Analysis Variables for Relational Engagement Items, Grades 7 and 8.

Factor	Factor 1	Factor 2	Factor 3

Variables	I have many friends. I get along easily with others my age. Others my age want me to be their friend. Most others my age like me.	I have at least one good friend who cares about me.* I feel like I belong. I feel like an outsider. I feel awkward and out of place. In general, how often do you feel lonely. I feel included at my school.	How do you feel about school? Adults at my school have high expectations of me. Adults at my school are interested in me. Adults at school notice when I am doing a good job and let me know about it.
General concept	Friends	Feeling included, belonging	Relationships with adults and general feeling about school
Cronbach's alpha	0.7571	0.7475	0.5400

A closer look at the groupings suggests that within the three retained factors, there exists conceptual cohesiveness. The first factor is associated with items that ask about friends, while the second item asks about feelings of belonging and inclusion. The third factor focuses on relationships with adults and a single item about general feelings towards school.

To further validate these factors, we employed analyses of inter-item correlation using the techniques associated with Cronbach's alpha. This technique examines how closely associated items are to each other in a correlation matrix and produces the Cronbach's alpha statistic, which ranges from 0 to +1. It is generally accepted that "good" scales should achieve a Cronbach's alpha of 0.70 or higher in order to demonstrate reasonable internal consistency. The statistical program Stata also indicates what the alpha statistic would be if individual items were removed from the proposed scale/factor.

The analyses of Cronbach's alpha on the previous factors indicated that Factors 1 and 2 had alpha values of 0.7571 and 0.7475, respectively, supporting the reduction of these items into scales. The third factor had a low alpha of 0.54, indicating it is a weak scale.

Table 8. Factor Analysis Solution for Relational Engagement Items, Grades 9-12.

Variable	Factor1	Factor2	Factor3
havemanyfriendssr	0.7624	0.3058	0.071
getalongwithotherssr	0.8354	0.2071	0.1122
otherswanttobefriendsr	0.8722	0.1447	0.1381
otherslikemesr	0.8602	0.1582	0.1572
onegoodfriendsr	0.3807	0.336	0.1085
feelibelongsr	0.5827	0.5487	0.2396
outsidersr	-0.1877	-0.8649	-0.0707
awkwardsr	-0.2247	-0.8562	-0.0594
feltlonelysr	-0.2775	-0.627	-0.0998
feelaboutschoolsr	0.1459	0.15	0.5612
includedatschoolsr	0.3998	0.4002	0.4518
adultexpectationssr	0.1045	0.1598	0.726
adultsinterestedsr	0.1575	-0.0397	0.6395
adultsnoticesr	0.2005	0.0759	0.7833

The exploratory factor analysis of the grade 9/12 students also revealed a three-factor solution (Table 8), with slightly different factor loadings. The first factor is associated with items that ask about friends but also includes an item on belonging, while the second item asks about feelings of alienation. Similar to the grade 7/8 results, the third factor focuses on relationships with adults but also includes two other items on feelings towards school.

Table 9. Factor Analysis Variables for Relational Engagement Items, Grades 9 - 12.

Factor	Factor 1	Factor 2	Factor 3
Variables	I have many friends.	I feel like an outsider.	How do you feel about school?

	I get along easily with others my age. Others my age want me to be their friend. Most others my age like me. I have at least one good friend who cares about me. I feel like I belong.	I feel awkward and out of place. In general, how often do you feel lonely.	I feel included at my school. Adults at my school have high expectations of me. Adults at my school are interested in me. Adults at school notice when I am doing a good job and let me know about it.
General concept	Friendships and belonging	Alienation	Wider relationships within the school.
Cronbach's alpha	0.8840	0.7997 0.8700 if lonely removed	0.7133

The analyses of Cronbach's alpha (Table 9) on the previous factors indicated that Factors 1 and 2 had alpha values of 0.8840 and 0.7991, respectively, supporting the reduction of these items into scales. The sector factor's internal consistency increases to 0.87 if the variable about feeling lonely is removed. The third factor had a lower alpha of 0.7133, which is still within the parameters of a good scale.

Affective school engagement. Affective school engagement refers to students' connectedness within the school community, on a wide scale. In our examination of variables in the WHY data set, we identified one that measured this concept generally. This variable was the extent to which the respondent agreed with the statement

- "I am a valued part of the school community"

Because this is a single item, no data reduction techniques are required to analyze this concept.

Affective learning engagement. Affective learning engagement refers to the students' emotional reactions to learning activities. The following five items are associated with the expression of this sentiment:

- I enjoy learning

- My education is important to me
- I get the support I need to learn at school
- I am interested in what I am learning at school
- I feel safe at my school

In terms of face validity, the term "enjoy" is a potential emotional reaction to learning that the student is asked about. Feeling like one's education is "important" and that they feel they are getting the support they need to learn and are interested in the topics they are learning about are also getting at that broader idea of emotions associated with learning. We have also included an item that asked about they extent to which a student felt safe at school as feelings of safety/securing are emotions, although they are not directly tied (in the question wording) to experiences of learning.

Exploratory factor analysis

Exploratory factor analysis of these items in both the grade 7/8 and 9-12 students found that they loaded on to one factor (results not shown as a single factor produces a single column with one factor which is unremarkable to present). When Cronbach's alpha analysis was undertaken on the factor components for each subgroup, the values were 0.7133 and 0.7475 with no improvements if items were removed. Thus, there is evidence that theses five items are suitably scaled to measure the underlying concept of affective learning engagement.

Participational engagement. Participational engagement includes how well pupils observe, cooperate, and comply with classroom rules as well as how well they socialize into their pupil roles. Participation can be divided into two categories: engaging in extracurricular activities related to school or exhibiting typical school behaviour, such as adhering to rules. One item expressed this type of student engagement:

- I participate in school activities like clubs or sports.

No statistical analyses on this variable were undertaken as it is a single item. It should be noted that no items in the WHY data addressed the type of participational engagement associated with exhibiting typical school behaviour (i.e. rule following).

Effortful engagement. Effortful engagement refers to the student's effort and persistence in learning.

- I participate in my learning.

- I use strategies to help myself learn.
- I contribute ideas in the classroom.

Exploratory factor analysis on these three items in both the grade 7/8 and 9/12 subsamples indicated for a one factor solution. When the items were tested for internal consistency with the Cronbach's alpha test, it was found that the alpha for the grade 7/8 students was 0.6365 and for the 9/12 students it was 0.7505. Thus, the scale is reliable for high school students, but weak for the younger students.

Cognitive Engagement. Although the literature indicated that cognitive engagement encompassed two spheres: motivational engagement and self-regulatory engagement, there were no measures of either of these concepts in the survey.

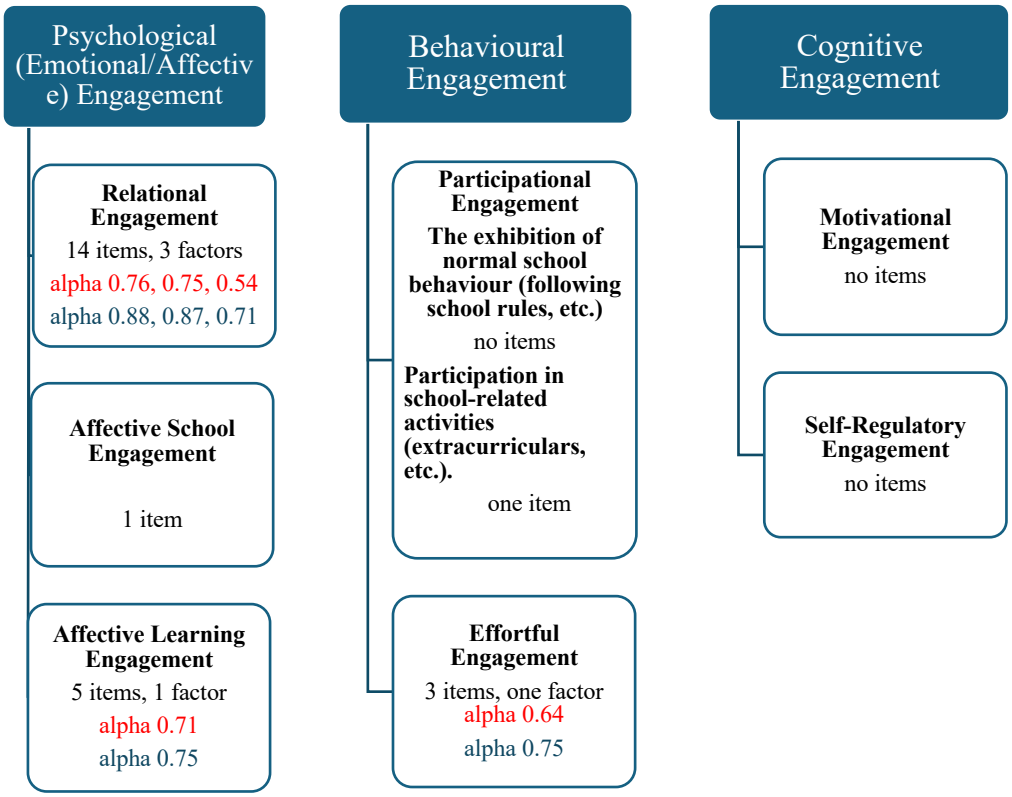
Summary and Discussion

In the previous section, we have analyzed survey items from the WHY survey to explore how different aspects of student engagement were or were not addressed. Figure 3 illustrates a summary of our findings. In Figure 3, the results for the grade 7/8 students are presented in red, while the results for the grade 9/12 students are in blue. In general:

- Items tended to "fit" better for the older students, possibly because the response categories in the data were more detailed or the older students had a better reading comprehension of what was being asked (or both).
- A disproportionate number of items focused on "relational engagement". Within those items, the items relating to interactions with adults were the weakest, particularly for the younger students. The wording of these questions may be too vague to ensure that respondents are all thinking about the same thing when asked to reflect on "adults". Possibly asking about "teachers" instead would make the measurement stronger and more valid/reliable. It is recommended that in the interests of survey space, the focus on relational engagement is reduced to 5 or 6 items.
- Affective school engagement had only one item. It is recommended that an additional item is added.
- Affective learning engagement had a reasonable number of items that performed similarly for both groups of students. No amendments are recommended.

- Participational engagement had only one item (participation in school activities). Additional items should be added here to measure adherence to normative behaviour and more focus on types of activities students are participating in.
- Effortful engagement was measured by three items, but performed much better for the older students than the students in grade 7/8. More exploration around question wording may be useful here, particularly for the younger students.
- Cognitive engagement items were not measured at all. These should be piloted and added to future surveys, particularly because these concepts are strongly associated with future learning and aspirations.

Figure 3. Engagement Items Analysis Grades 7/8 and Grades 9/12.



Next steps

The next phase of the analysis will involve focus groups with students explore question wording. We recommend that:

- relational engagement items be reduced to about 5 and more exploration is done around relationships with teachers;

- the three affective school engagement are retained and two items are added that measure this concept;
- the five affective learning engagement items are retained;
- participational engagement items that ask about activities and rule following are added (three of each);
- the three effortful engagement items are retained;
- three motivational engagement items are added; and
- three self-regulatory engagement items are added.

Proposed items to be added are displayed in Table 10.

Table 10. Proposed Additional Engagement Items.

Engagement Type	**Proposed items**
Affective School	On a scale of 1=strongly disagree to 5=strongly agree, respond to the following: 1. I feel safe at school 2. At my school, teachers care about students 3. I feel like I have a say about what happens to me at school
Participatory (activities)	Are there enough extracurricular activities offered by your school that meet your individual interests?
	Are you currently participating in extracurricular activities? If so, what are they? Are the extracurriculars you are involved in

	offered by your school, or non-school-related programs?
Participatory (rules)	I follow the rules at my school. Following school rules is important to me.
Motivational	Please indicate the extent to which each of the following statement applies to you (1=not at all to 5=very much): 1. I think about how useful the material I'm learning will be in the future. 2. I look forward to learning new things. 3. I'm motivated to learn new things. How important do you believe education is for your future?
Self-Regulatory	On average, how many hours do you dedicate to studying each week? When faced with a difficult task, how likely are you to keep trying until you succeed? How often do you seek help when you're struggling with a subject?

Once the items are decided upon, focus groups will be used to ensure question wording and meaning are consistent among students.

Focus Groups and Pilot Survey

Focus Groups

In February 2025, we conducted two focus groups to validate the survey questions – one with a UGDSB elementary school, and one with a high-school. The focus groups were organized by Blayne Primeau in collaborating with the participating schools. They were approximately 1

hour in length each and conducted over a Teams call. The identities of participating students were kept anonymous to the researchers. Only the researcher had their camera on during the focus group sessions. These sessions were not recorded. Hand-written notes were taken by the researcher.

Students were read the survey questions and asked a series of questions:

- Do you understand the question?
- Do you feel like the response options capture how you feel about the question asked?
- Are there any changes you would make to the question that would help your understanding of it?
- What do you think this question means or is trying to get at?

Students in both focus groups actively engaged in analyzing the survey questions and provided critical, reflective feedback. Table __ provides a breakdown of the survey questions brought to the focus group, key identifying themes, the category of engagement the question falls under, student feedback, and our recommendations. One recommendation for all questions was to change the response categories to a 1-5 “never – always” Likert scale.

Table 11. Breakdown of Survey Questions Discussed in Focus Groups.

Question	Key Identifiers from students	Engagement type	Student suggestions	Our recommendations
1. Do agree to participate in this survey?		N/A	N/A	No Changes
2. What grade are you in?		N/A	N/A	No Changes
3. When I am at school, I feel like I belong.	Inclusion; representation; free to be yourself; community	Relational	Change response categories to "Never, rarely, sometimes, often, always"	Changing this to a 5-point scale of never-always would allow us to identify how often they feel like they belong. Scale: Never, rarely, sometimes, often, always.
4. I have many friends.	Enough friends; do you have a community that you fall back on; quality of friendships	Relational	Too broad – what is "many"? Size of one's group, or what they consider "many" friends differs. Reframe: "I'm comfortable with my	Change question to: I'm comfortable with my friendships at school

			friendships at school" Or Include a blurb that specifies what "many" means	
5. I feel like an outsider.	Lonely; don't fit in; not many friendships; not represented.	Relational	What is an outsider? Maybe include a definition of what this means. Could reframe: "I have positive relationships with my peers"	Change question to: I have positive relationships with my peers
7. My teachers make me feel like I belong.	Make you feel good about yourself; no discrimination; inclusion; social acceptance.	Relational	Change scale to never-always	Changing this to a 5-point scale of never-always may be useful to determine the frequency at which teachers make them feel like they belong. Scale: Never, rarely, sometimes, often, always.

8. I am a valued part of the school community.	School values you and makes you feel important	Affective School	Suggest a "how" or "why" follow-up question	The suggested follow-up questions may be useful to determine what makes students feel valued: 1. I feel valued when I am included in school events or activities. 2. I feel valued when teachers acknowledge my efforts
9. I feel safe at school.	Comfortable to be around others; security; safe environment; don't have to hide who you are.	Affective School	What does safe mean in this context? Change scale to never-always	Break down into a few questions about safety: 1. I feel safe to express who I am at school. 2. I worry about my personal safety at school
10. At my school, teachers care about students.	Pay attention to feelings	Affective School	Too broad/vague, as all teachers are different. Separate into two questions targeting academically vs. socially.	Separate into two questions to identify whether students feel cared for academically and/or socially: 1. At my school, my teachers pay attention to my feelings. 2. At my school, teachers care about the academic success of students.

			Change scale to never-always	Changing this to a 5-point scale of never-always would address the vagueness of the question, allowing students to identify how often they feel cared for. Scale: Never, rarely, sometimes, often, always.
11. I feel like I have a say about what happens to me at school.	Autonomy; control; say in what others do; your voice is being heard	Affective School	Reword question. It's not very clear. Is it academically or socially? "I feel like my school listens to me and values my feedback" "I feel like I have a say in how I am taught"	Separate into two questions: 1. I feel like my school listens to me. 2. I feel like my school values my feedback. Change scale
6. My teachers are supportive of me.	Believe in my abilities; help achieve your goals; support ideas	Affective Learning	Statement is too broad. Consider	Breaking this down into the two suggested questions would help to

			breaking it up into two questions: 1. My teachers are supportive of me academically 2. My teachers are supportive of me socially.	determine the type of support students receive from their teacher: 1. My teachers are supportive of me academically 2. My teachers care about my feelings
12. I enjoy learning.	Variation in likes/dislikes.	Affective Learning	"I enjoy learning at school" "I enjoy learning outside of school" Change response scale to "never-always"	Separate into two questions: 1. I enjoy learning at school 2. I enjoy learning outside of school
13. My education is important to me.	Care about learning and grades	Affective Learning	No Changes	No Changes
14. I get the support I need to learn at school.	Seeking help; help in learning; enough support while learning	Affective Learning	Separate into two questions:	Separate into two questions: 1. I get the support I need from teachers to learn at school

			"I get the support I need from teachers to learn at school" "I get the support I need from my parents/guardians to learn at school." Change response scale to never-always Add a follow-up list if students choose anything from never-sometimes: "In what areas do you not feel supported?"	2. I get the support I need from my parents/ guardians to learn at school. Changing this to a 5-point scale of never-always would allow students to identify how often they receive support.
15. I am interested in what I am learning at school.	You like what you are academically doing at school	Affective Learning	Too broad. Students can be interested in some topics more than others. Change to never-always scale	Remove question and separate question 12 into two questions (see above)

			Too similar to question 12	
16. I feel safe at my school.		Affective Learning		Repeat question - remove
17. I participate in extracurricular sports at school.	Straightforward	Participatory (activities)	Change response scale to "never-always" Change "extracurricular" verbiage	Change scale: Never, rarely, sometimes, often, always.
18. I participate in school clubs.	Straightforward	Participatory (activities)	Change response scale to "never-always"	Change scale: Never, rarely, sometimes, often, always.
19. I enjoy participating in extracurricular activities at school.		Participatory (activities)	Redundant. Change to "I feel like there is an extracurricular for me at school."	Change to "I feel like there is an extracurricular for me at school."
20. I follow the rules at my school.	Cause trouble or not; care about the rules	Participatory (rules)	Change to "I agree with the rules at my school". As is, students think many may not be truthful	Keep as is to align with the proposed engagement items.

21. Following the rules at school is important to me.	Care about the rules	Participatory (rules)	Why is this question important? Change to "I think all students should follow the school rules"	Keep as is to align with the proposed engagement items.
22. I look forward to learning new things.	Like learning; willing to learn new things	Motivational	Change into two questions, school versus outside of school (home). Change scale to never-always.	Separate into two questions: 1. I look forward to learning new things in school. 2. I look forward to learning new things outside of school. Scale: Never, rarely, sometimes, often, always.
23. I'm motivated to learn new things.		Motivational	Too repetitive. Either get rid of it or change to "I'm open to learning new things" Change scale to never-always.	Remove question

24. Education is important for my future.	Importance of school; lifelong learning	Motivational	Change to "Generally, education is important for my future."	Same
25. When faced with a difficult task, I will keep trying until I succeed.	Persevere; never give up.	Self-Regulatory	Change: When faced with a difficult task, I keep trying until I succeed.	Change: When faced with a difficult task, I keep trying until I succeed.
26. I seek help when I am struggling with a subject.	Ask for help	Self-Regulatory	No changes	No changes

Pilot Survey

Based on our recommendations and feedback from UGDSB, the following questions were included in the pilot survey. All questions are on a Likert scale of 1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always.

1. Do agree to participate in this survey?
2. What grade are you in?
3. When I am at school, I feel like I belong.
4. I'm comfortable with my friendships at school.
5. I have positive relationships with my peers.
6. The adults at school are supportive of me academically.*
7. The adults at school care about my feelings.*
8. The adults at school make me feel like I belong.*
9. I am a valued part of the school community.
10. I feel valued when I am included in school events or activities.
11. I feel valued when adults acknowledge my efforts.
12. I feel safe to express who I am at school.
13. I worry about my personal safety at school.
14. At my school, adults pay attention to my feelings.*
15. At my school, adults care about the academic success of students.*
16. I feel like my school listens to me.
17. I feel like my school values my feedback.
18. I enjoy learning at school.
19. I enjoy learning outside of school.
20. My education is important to me.
21. I get the support from the adults in my school I need to learn.*
22. I get the support I need from my parents/ guardians to learn at school.
23. I participate in extracurricular sports at school.
24. I participate in school clubs.
25. I feel like there is an extracurricular for me at school.
26. I follow the rules at my school.
27. Following the rules at school is important to me.

28. I look forward to learning new things at school.
29. I look forward to learning new things outside of school.
30. Education is important for my future.
31. When faced with a difficult task, I will keep trying until I succeed.
32. I seek help when I am struggling with a subject.

In terms of the asterisked questions above, it should be noted that our recommendations -- based upon the focus groups and the literature -- were that the wording should specifically indicated “teachers” rather than the vague term “adults”, which could refer to teachers, administration, and other adults working in a school. However, this suggestion was not adopted in the final vetting of the questionnaire.

It should also be noted that Effortful Engagement was not tested in this pilot analysis as it was determined that the existing questions were adequate.

Results

Data were collected from a total of 271 students in a data collection exercise facilitated by UGDSB. The survey mode of delivery was online. Students from grades 4 to 12 were included in the test sample. Figure 4 illustrates the distribution of students by grade. Just under half (45%) of students were in elementary grades. The questions that were asked around engagement are listed in Table 12.

Figure 4. Histogram of Distribution of Students by Grade.

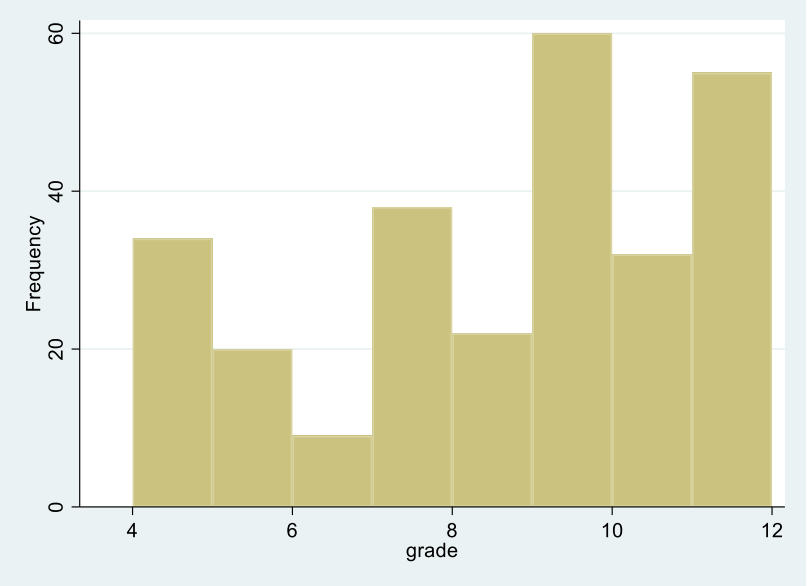


Table 12. Pilot items by Engagement Type.

Item	Type of Engagement
When I am at school, I feel like I belong.	Relational
I'm comfortable with my friendships at school.	Relational
The adults at school make me feel like I belong.*	Relational
I have positive relationships with my peers.	Relational
The adults at school care about my feelings.*	Affective School
I am a valued part of the school community.	Affective School
I feel valued when I am included in school events or activities.	Affective School
I feel valued when adults acknowledge my efforts.	Affective School
I feel safe to express who I am at school.	Affective School
I worry about my personal safety at school.	Affective School *
I feel like my school values my feedback.	Affective School
At my school, adults pay attention to my feelings.*	Affective School
I feel like my school listens to me.	Affective School
At my school, adults care about the academic success of students.*	Affective Learning
The adults at school are supportive of me academically.*	Affective Learning
I enjoy learning at school.	Affective Learning
I get the support from the adults in my school I need to learn.*	Affective Learning
I get the support I need from my parents/ guardians to learn at school.	Affective Learning
I enjoy learning outside of school.	Affective Learning*
My education is important to me.	Motivational
I look forward to learning new things at school.	Motivational
I look forward to learning new things outside of school.	Motivational
Education is important for my future.	Motivational
I participate in extracurricular sports at school.	Participatory Activities
I participate in school clubs.	Participatory Activities
I feel like there is an extracurricular for me at school.	Participatory Activities
I follow the rules at my school.	Participatory Rules
Following the rules at school is important to me.	Participatory Rules
When faced with a difficult task, I will keep trying until I succeed.	Self-Regulatory
I seek help when I am struggling with a subject	Self-Regulatory

Relational Engagement

In the original survey, there were 14 relational engagement items, which we suggested to pare down in order to make room for expansion of other types of engagement items. The four retained and slightly modified questions were tested, and it was revealed that they loaded on 1 factor and had an alpha of 0.78. There was no increase in the alpha score if items were removed.

Because the analysis of the previous data set had the younger and older children presented with slightly different response categories, they were analyzed separately. However, here, all children were asked the same questions and presented with the same response categories, regardless of age.

In order to ensure that we were not missing crucial findings related to age, we separated the analysis into those in grades 8 and lower and those in high school. When we ran the same estimation, we found that the alpha for the younger students was 0.75 and for the older students, it was 0.81. This suggests that the measure is slightly better for the older students, but still a good measure overall.

Affective School Engagement

Affective school engagement was captured by a single item in the original survey. In this pilot, nine items were tested that measured this concept. The factor analysis revealed a two-factor solution. In particular, one item – the item on personal safety – did not fit into the primary factor. Similarly, when an alpha test was conducted on the items, it was found that the overall alpha was 0.82, but when the item "I worry about my personal safety at school" was removed the alpha increased to 0.88.

To ensure that we were not missing an age difference, our separate analysis for elementary and high school revealed alphas of 0.79 and 0.85 respectively. If the personal safety item is removed, they increase to 0.85 and 0.90 respectively. Thus, we believe that this personal safety item is a poor fit for Affective School Engagement.

Affective Learning Engagement

The original survey measured affective learning engagement with 5 items. Here we use six with some wording differences. Factor analysis revealed a two-factor solution, with all items except 1 loading on the first factor. The second factor was comprised solely of the item that measured if the student enjoyed learning outside of school. The internal consistency analysis revealed an alpha of 0.75 with all six items that rose to 0.79 if the "learning outside of school" item was removed. For the younger students, the alpha was 0.71 overall but rose to 0.76 if the single item was removed. Similarly in the high school students, the alpha rose from 0.77 to 0.82 when the item about learning outside of school was removed. Thus, we recommend removal of this item to assess affective learning engagement better.

Motivational Engagement

In the original data, motivational engagement was not measured. In the pilot, 4 items were tested. The items loaded on a single factor. Internal consistency tests revealed an overall alpha of 0.67 with the alpha rising a bit to 0.69 if the item about learning outside of school was removed. For elementary students, the alpha, however, was 0.70 and increased to 0.72 with the removal of the item pertaining to learning outside of school. For the high school students, the alpha was 0.64 and rose to 0.66 with the removal of the learning outside of school item. Although not a tremendous difference for the older students, we do recommend taking out the item about learning outside of school as it does not add to the cohesiveness of the concept.

Participatory Engagement (Activities)

The original survey instrument carried no items of participatory engagement in terms of activities that students took part in. We piloted three items around participation sports, school clubs, and extracurriculars. Factor analysis revealed a one factor solution. The alpha for this concept was 0.69 with no improvement if items were removed. When examining by age groups, it was found that the alpha for high school students was 0.69 and for elementary students it was 0.71. There was little advantage to removing items to improve interitem consistency. We recommend these items to be kept as-is.

Participatory Engagement (Rules)

The original survey we analyzed contained no participatory engagement items that pertained to rule following. We suggested that two were added. Our analysis of the pilot survey

of these two items revealed a one-factor loading and an internal consistency of 0.76. Our analysis by age-groups indicated that the concept was strong among elementary school children (alpha=0.84) than among high school students (alpha=0.67).

Self-Regulatory

Because the original survey carried no items on self-regulation, we tested two in the pilot. While both items loaded on a single factor, their internal consistency was not ideal, having an alpha of 0.47 overall. When examined by age groups, the alpha was 0.50 for elementary school students and 0.43 for high school students. Because these are very low, we cannot recommend retention of both to measure this concept. In terms of "face validity", the item "When faced with a difficult task, I will keep trying until I succeed" appears to more closely align with the concept of cognitive tools used to self-regulate.

Table 13 summarizes these findings.

Table 13. Summary of findings Pilot items by Engagement Type (items in red are suggested deletions).

Item	Type of Engagement	Overall alpha*	Elementary Alpha*	High School Alpha*
When I am at school, I feel like I belong.	Relational	0.78	0.75	0.81
I'm comfortable with my friendships at school.	Relational			
The adults at school make me feel like I belong.*	Relational			
I have positive relationships with my peers.	Relational			
The adults at school care about my feelings.*	Affective School	0.88	0.79	0.85
I am a valued part of the school community.	Affective School			
I feel valued when I am included in school events or activities.	Affective School			
I feel valued when adults acknowledge my efforts.	Affective School			
I feel safe to express who I am at school.	Affective School			
I worry about my personal safety at school.	Affective School *			
I feel like my school values my feedback.	Affective School			
At my school, adults pay attention to my feelings.*	Affective School			
I feel like my school listens to me.	Affective School			
At my school, adults care about the academic success of students.*	Affective Learning	0.79	0.76	0.82
The adults at school are supportive of me academically.*	Affective Learning			
I enjoy learning at school.	Affective Learning			
I get the support from the adults in my school I need to learn.*	Affective Learning			
I get the support I need from my parents/ guardians to learn at school.	Affective Learning			
I enjoy learning outside of school.	Affective Learning*			

My education is important to me.	Motivational	0.69	0.72	0.66
I look forward to learning new things at school.	Motivational			
I look forward to learning new things outside of school.	Motivational			
Education is important for my future.	Motivational			
I participate in extracurricular sports at school.	Participatory Activities	0.69	0.71	0.69
I participate in school clubs.	Participatory Activities			
I feel like there is an extracurricular for me at school.	Participatory Activities			
I follow the rules at my school.	Participatory Rules	0.76	0.84	0.67
Following the rules at school is important to me.	Participatory Rules			
When faced with a difficult task, I will keep trying until I succeed.	Self-Regulatory	0.47	0.50	0.43
I seek help when I am struggling with a subject	Self-Regulatory			

*alphas are reported after weak items were removed

Conclusions and Recommendations

Based on the analysis of the pilot survey, we have found that several of the tested engagement items were successful at measuring the larger overall concepts that we had aimed to. The weakest concept was self-regulatory engagement, suggesting that other items might be tested in future surveys. In particular, items from established psychological indices of self-regulation (e.g. Buris et al, 2016) might be useful for selecting future items as the two we tested do not have good internal consistency (i.e. they seem to be measuring different things). Because psychological traits like self-regulation are important to future learning, it should be considered a priority to develop and test such items (Schunk and Zimmerman, 2023).

We are, however, confident going forward that the following items be used to measure the remaining components of engagement (Table 14). We also recommend that the same response categories are used for all items and for all students (regardless of age) as it allows for easier analysis and comparison. The responses used in the pilot were Likert scale items of of 1=Never, 2=Rarely, 3=Sometimes, 4=Often, and 5=Always. There did not appear to be any difficulty with this approach in the responses given by younger children.

Table 14. Summary of Recommended Engagement Survey Items Going Forward.

Item
Relational Engagement
When I am at school, I feel like I belong.
I'm comfortable with my friendships at school.
The adults at school make me feel like I belong.
I have positive relationships with my peers.
Affective School Engagement
The adults at school care about my feelings.
I am a valued part of the school community.
I feel valued when I am included in school events or activities.
I feel valued when adults acknowledge my efforts.
I feel safe to express who I am at school.
I feel like my school values my feedback.
At my school, adults pay attention to my feelings.
I feel like my school listens to me.
Affective Learning Engagement
At my school, adults care about the academic success of students.
The adults at school are supportive of me academically.
I enjoy learning at school.
I get the support from the adults in my school I need to learn.
I get the support I need from my parents/ guardians to learn at school.
Effortful Engagement
I participate in my learning.
I use strategies to help myself learn.
I contribute ideas in the classroom.
Participatory (Activities)
I participate in extracurricular sports at school.
I participate in school clubs.
I feel like there is an extracurricular for me at school.
Participatory (Rules)
I follow the rules at my school.
Following the rules at school is important to me.
Self-Regulatory
When faced with a difficult task, I will keep trying until I succeed.
I seek help when I am struggling with a subject
Motivational
My education is important to me.
I look forward to learning new things at school.
Education is important for my future.
Self Regulatory
When faced with a difficult task, I will keep trying until I succeed. (other items to be tested from established measures of academic self-regulation)

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