



CASS

College of
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Superintendents



Continuing
Education
Program



Research Report



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Classroom Complexity Grant: Supporting and Strengthening the Strategic Purpose

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1. Introduction

This research will provide current, relevant, and research-based information that supports and strengthens the strategic purpose of the Classroom Complexity Grant. It is intended to support system education leaders in their work to address the complexity of the classroom.

The project included a survey of superintendents designed to access their professional knowledge and experience with strategic planning for the resource allocation to address classroom complexity in their school authorities. The survey responses provided information about the current state of classroom complexity across Alberta, with specific attention paid to classroom complexity with potential ties to learning loss, the use of learning loss funding to address classroom complexity, and the superintendent's vision of a preferred future for addressing the complexities in classrooms.

This research also included a literature review. The review highlights literature in several areas related to classroom complexity: classroom complexity tied to learning loss, complex adaptive systems and educational leadership, leadership for inclusive education systems, and building professional capacity in the system.

Finally, the report includes short- and long-term strategies and recommendations to address classroom complexity.

1.1 Connection to *CASS Act*

The purpose of CASS, through professional learning, is to support members to be visionary leaders of education by representing collective wisdom and interests. Superintendents and system education leaders establish and sustain a culture that promotes shared responsibility for student success and system improvement. (College of Alberta School Superintendents, 2022, p. 1)

This research report supports CASS with its purpose and mandate as a legislated professional organization. The *CASS Act*, Section 5 (College of Alberta School Superintendents, 2021) outlines the specific objective associated with this work:

(b) to improve the teaching profession and leadership of the education system by

(ii) carrying out research and publishing materials designed to maintain and improve the competence of members.

1.2 Funding

A conditional grant from Alberta Education made this research project possible. The funding allowed CASS to survey school authorities, conduct a literature review, and provide short- and long-term recommendations to address the complexities in classrooms and to support and strengthen the strategic purpose of the Classroom Complexity Grant.

2. Review of Literature

Classroom complexity is a broad term, increasingly being used to describe diversity in classrooms. While the term is gaining popularity and frequency, the concept of diversity and complexity in classrooms is not new. As Leithwood et al. suggested in their 1999 book *Changing Leadership for Changing Times*, schools and school systems need to thrive in uncertainty, adopt a flexible approach and focus on problem solving, and be prepared to respond to a wider range of students (Leithwood et al., 1999).

This literature review focuses on the system education leader's role in addressing and responding to classroom complexity. Themes that emerged in the literature include classroom complexity tied to learning disruption, complex adaptive systems theory and its implications for educational leadership, leadership for inclusive education systems, and building professional capacity in the system.

2.3 Classroom Complexity Tied to Learning Disruption

While classrooms have always had some level of complexity, the COVID-19 pandemic and related disruptions to in-person learning have undoubtedly had a significant impact on students, families, and staff in our education system. A growing body of research acknowledges this increasing complexity and seeks to measure the impact of learning disruptions on academic performance, social/emotional well-being, and the mental health of students, families, and staff (Donnelly & Patrons, 2021; Engzell et al., 2021; Government of Alberta, 2021; Hargreaves, 2021; Harmey & Moss, 2021; Page et al., 2021; Patrons et al., 2022; Storey & Zhang, 2021; Whitley et al., 2021).

Attempts to quantify the academic impact of the COVID-19 learning disruptions have produced varied results across the literature. One study shows that students lost 0.3-0.9 school years' worth of learning during COVID school closures (Page et al., 2021, p. 19). According to Patrinos et al. (2022), "As a result of the first wave of COVID-19-induced lockdowns and school closures beginning in March 2020, a student has lost on average about one-third to one-half year's

worth of learning” (p. 13). Storey and Zhang (2021) stated that, “on average, students lost 0.15 standard deviations of learning during the pandemic school closures” (p. 3). Engzell et al. (2021) reported that “losses are evident throughout the age range we studied and across all of the three subject areas: math, spelling, and reading” and measure these losses at as much as 3 percentile points (p. 4).

The social/emotional and mental health impacts of the COVID-19 pandemic and learning disruptions are also well documented in the research. The *Child and Youth Well-Being Review* (Government of Alberta, 2021) highlights many of the impacts of the COVID-19 pandemic on mental health and child development, stating that the “experience of social isolation has been linked to a number of potential short-term and long-term impacts, including impacts on mental health, quality of life, and development” (p. 13). Page et al. (2021) found that:

Learning from previous crises suggests that there will be a short-term impact of learning loss due to school absence, but for some pupils there will be a longer-term impact due to the residual psychological or socio-emotional effects due to exposure to trauma. (p. 24)

Aukerman and Aiello (2023) noted that “children are navigating complex emotional landscapes as COVID-19 moves from pandemic to endemic” (p. 14). The research also notes that staff members may also be struggling with the mental health impacts of the COVID-19 pandemic, which may impact their ability to address student mental health needs (Government of Alberta, 2021; Harmey & Moss, 2021; Page et al., 2021).

Several researchers posit that the COVID-19 pandemic and related learning disruptions have had a more significant impact on vulnerable students (Engzell et al., 2021; Government of Alberta, 2021; Patrinos et al., 2022; Whitley et al., 2021). Whitley et al. (2021) studied the impact of the COVID-19 pandemic on the achievement of vulnerable Canadian children and found that “existing inequities in educational outcomes experienced by vulnerable children prior to the pandemic have been greatly exacerbated as cracks in our support structures are revealed” (Abstract section). The *Child and Youth Well-Being Review* (Government of Alberta, 2021) reported that “this disruption has been linked to general disengagement and declining academic performance among students, with deeper impacts for those already requiring education supports before the pandemic” (p. 15). Engzell et al. (2021) found that, “among less-educated households, the size of the learning slide is up to 60% larger than in the general population” (p. 4).

This impact on vulnerable students, and all students in general, can be attributed to the transition to at-home learning and the change in the role of the teacher in the learning process. During learning disruptions, teachers became facilitators of learning activities, and direct teaching and access to teachers and support staff was limited compared to the traditional in-class experience with which students were familiar. The importance that teachers play in the success of students is well-known (Carey, 2004; Hargreaves, 2021; Hattie, 2009; Rivkin et al., 1998). As Hargreaves (2021) stated:

The COVID-19 pandemic has demonstrated that, although learning can and sometimes does occur without teaching, on any significant scale, and especially among the most marginalized and vulnerable children, a lot of learning does not occur when children are deprived of teachers and teaching.

While there is not a large body of research in this area, some researchers have highlighted the importance of leadership in responding to crises such as the COVID-19 pandemic (Hargreaves, 2021; Harmey & Moss, 2021; OECD, 2020). In particular, Harmey and Moss (2021) found that “the local knowledge of school leaders was essential in coping with the crisis” (p. 647). The role of school leadership in supporting their staff and community, understanding and responding to local context, and making decisions to support the safe return to school of staff and students was pivotal (Harmey & Moss, 2021). Ensuring that leaders are well so that they can effectively lead and care for their staff and students was critical in successful systematic responses to the COVID-19 pandemic (Hargreaves, 2021).

The COVID-19 pandemic and related learning disruptions had a clear impact on students and their learning. Academic achievement, social/emotional skills, and mental health were all impacted to varying degrees. These outcomes shone a spotlight on the education system and affirmed the impact of teachers and schools on learning and student success.

Recognizing the impact of COVID-19 learning disruption throughout their systems will allow system education leaders to effectively respond to and address related learning gaps. Paying particular attention to the impact on vulnerable students will be important as the pandemic learning disruptions had a more significant impact on these students. Additionally, system education leaders should be mindful of the impact the pandemic had on the mental health and well-being of staff. Systemic intervention structures that support filling the gaps in student learning and supporting student and staff mental health will be important. Monitoring the success of these interventions

will allow system education leaders to measure and understand their impact and make adjustments along the way.

2.2 Complex Adaptive Systems Theory and Educational Leadership

Several researchers in the field of educational research have begun to embrace the connection between complex adaptive systems theory (also known as complexity theory), which originated in the biological and natural sciences and education systems (Alonzo-Yanez et al., 2021; Cabrera & Cabrera, 2023; Knight, 2022; Mason, 2008, 2014; Morrison, 2008). Complex adaptive systems theory describes the complex interplay and connectedness that exists in a system and recognizes that change and growth in the system emerges from these interactions and connections (Mason, 2014). This theory of the functioning of complex systems certainly applies to education systems; however, "administrators, educators, policymakers, and other stakeholders have been relatively slow to embrace the insights of complexity science and systems thinking (Cabrera & Cabrera, 2023, p. 26). Alonzo-Yanez et al. (2021) stated that:

Complexity within leadership theory recognizes the dynamic interactions that take place within organizations as they change, create innovation, and evolve.... Further, complexity leadership theory proposes that adaptability occurs in the everyday interactions among individuals responding to triggers in the work environment caused by a varied set of factors. (pp. 65-66)

Approaching education systems as complex adaptive systems brings understanding of the dynamic and complex interplay among students, between students and their teachers, teachers within a school, between teachers and their leaders, among leaders within a system, among system education leaders, etc. (Morrison, 2008). No one aspect of a school authority operates in isolation. Rather, the connections that exist create a complex web of "elements that influence each other" (Alonzo-Yanez et al., 2021). Adopting a complex adaptive systems lens enables teachers and system education leaders:

To think non-linearly about learning processes; to become more attuned to collective, networked effects on learning; to see the critical potential in moments they might otherwise ignore, dismiss, or want to prevent; and to gain a more thorough appreciation of why pupil learning does not appear to augment in a steady trajectory. (Knight, 2021)

This non-linear thinking provides system education leaders with an opportunity to “seek out leverage points in systems that cause large shifts in the system” (Cabrera & Cabrera, 2019, p. 5). In other words, thinking about the system as its own entity, with its own ability to grow and develop, places importance on the role of the system education leader in attending to complexities within the system. At the system level, recognizing that complexity exists throughout the system allows leaders to consider what it means to lead and manage in a system in which everything is connected. Morrison (2008) captured the importance of a collaborative approach to leadership in a complex system, “connectedness requires a *distributed knowledge* system, in which knowledge is not centrally located in a command-and-control centre. Rather, it is dispersed, shared, and circulated throughout the system” (p. 18).

Adopting the view that education systems are complex adaptive systems reinforces the idea that the system can adapt to experiences, feedback, and interactions. Researchers refer to this as emergence, “which implies that, given a sufficient degree of complexity in a particular environment, new (and, to some extent, unexpected) properties and behaviours emerge in that environment” (Mason, 2014, p. 3). Mason further indicated that “new properties and behaviours emerge not only from the elements that constitute a system, but also from the diversity and myriad of connections among these elements” (2014, p. 9). Alberta Education acknowledges that “school jurisdictions and schools are complex environments with interconnected challenges and strengths. It can be challenging to identify a single root challenge to any area of need” (2003, p. 17).

Taking a complex systems approach allows system education leaders to better understand the change process and realize that “change is created as a result of simple rules applied across multiple levels within a system” (Cabrera & Cabrera, 2023, p. 6). This can have an impact on system education leaders’ approach to addressing classroom complexities as they consider high-leverage entry points into their systems when implementing programs or change initiatives. Further, system education leaders must keep in mind the interplay and connectedness that exists in school systems and understand that “actions taken in one area are likely to ripple across others” (Cabrera & Cabrera, 2019, p. 6). System education leaders are therefore tasked with finding the best place within their system to start that ripple effect in order to have the maximum impact on creating optimum learning for all students.

2.3 Leadership for Inclusive Education Systems

A discussion of classroom complexity, which implies that students' needs have become increasingly complex and challenging, must be situated in a discussion of creating and leading an inclusive education system. Alberta Education defines inclusion as “a way of thinking and acting that demonstrates universal acceptance and promotes a sense of belonging for all learners” (Alberta Education, 2023). This foundational statement grounds the work of educators throughout the province, including system education leaders. Leaders at all levels of the education system must believe that all students belong, that all staff belong, and that all are capable of learning and success. Decisions at every level of the organization should uphold this belief, and system education leaders must model this belief system in everything they do.

The importance of leadership for inclusive education systems is clear throughout the literature (Ainscow, 2004, 2010; Ainscow & Sandill, 2010; Donohoo, 2018; Kugelmass, 2003; Galloway, Ishimaru, 2017; Hattie, 2015; Moore, 2016; Shields & Hesbol, 2020; Woodcock & Woolfson, 2019). Alberta Education recognizes that, in order for fulfill the vision of a truly inclusive education system,

School leaders across the province need continuing conversations with their school community about inclusive learning environments and how the staff can work to further reduce barriers to participation and learning so that each and every student in their school has a sense of belonging and is a successful learner. (Alberta Education, 2013, p. 5)

School and system education leaders control the narrative in their systems (Donohoo et al., 2018). Shields and Herbal suggested that “to meet the needs of rapidly changing populations... it is incumbent on school leaders, despite limited fiscal resources and frequent community backlash, to lead in ways that promote inclusion, equity, and excellence for every student” (Shields & Herbal, 2020, p. 19). Classrooms are complex, and students arrive with a variety of needs. School and system education leaders need to “value diversity as an asset rather than a challenge” (Brussino, 2021, p. 8). According to Causton-Theoharis and Theoharis (2009),

To create more inclusive schools, school leaders are the most critical factor. First, leadership is always key to meaningful and lasting reform. To become an inclusive district, the superintendent and administrative team must articulate a vision and a commitment to the philosophy and practice of inclusive education for all. (Committed Leadership section, para. 1)

System education leaders in inclusive education systems should be encouraging cultures of collective efficacy in which “teachers and leaders believe that it is their fundamental task to evaluate the effect of their practice on students' progress and achievement” (Donohoo et al., 2018). Inclusive education systems should be designed to “ensure access to high quality education for all learners by effectively meeting their diverse needs in an engaging learning environment and in a way that is responsive, accepting, respectful, and supportive” (Alberta Education, 2022). The Alberta Education (2022) resource, *Implementing a Continuum of Supports and Services*, provides a valuable framework for school and system education leaders to consider as they address complexity and strive toward creating an inclusive education system in their school authority. This framework is founded on “the *being-knowing-doing* approach, [which] calls for more than just the application of structures and systems; it calls for leaders to address these challenges through changes in people’s priorities, beliefs, and habits, necessary when addressing adaptive challenges” (Alberta Education, 2022, p. 8).

Hattie (2015) stated that systematic change and improvement efforts make a difference to student achievement and that “the onus needs to be on everyone working collectively to improve student achievement: the teachers, the school leaders, the other adults in the schools (such as teaching aides), the parents (and voters), the policy-makers, and the students” (p. 5). With a provincial mandate to ensure that schools are inclusive (Alberta Education, 2023b), it is incumbent upon school and system education leaders to lead the way toward truly inclusive education systems. After all, “inclusive education is about providing opportunities with supports for all students to have access to, and contribute to, an education rich in content and experience with their peers. Period” (Moore, 2016, p. 17).

2.3 Building Professional Capacity in the System

For system education leaders who are working to address increasingly complex classrooms and support their teachers and leaders in this challenging work, building professional capacity is a theme that arose in the survey data as well as in the literature (Ainscow, 2010, 2020; Bruissino, 2021; Causton-Theoharis & Theoharis, 2009; Cerna et al., 2021; Florian, 2015; Moore, 2016, 2022; Pantić & Florian, 2015). Since “there is not a separate pedagogy for inclusion; good teaching is good teaching for all” (Alberta Education, 2022, p. 12), then a systemic focus on the professional capacity of teachers to plan and teach to diversity and complexity in their classrooms holds promise as a high-leverage strategy.

As we strive to actualize the vision of an inclusive education system, Alberta Education (2023) recognizes that students have a wide range of needs and may need a variety of interventions, which “call for flexible and responsive learning environments that can adapt to the changing needs of learners” (para. 2). Further, “educational leaders recognize that, when strong and effective universal supports are in place, they will support the majority of learners, and fewer will require targeted or intensive supports” (Alberta Education, 2022, p. 11). Strong universal supports include strategies such as “Universal Design for Learning, differentiated instruction, formative assessment, and positive behaviour supports” (Alberta Education, 2022, p. 16). Universal strategies fall under the responsibility of the classroom teacher, with implications at the system level, as outlined by Ainscow and Sandill (2010):

The task must be to develop education systems within which teachers feel supported as well as challenged in relation to their responsibility to keep exploring more effective ways of facilitating the learning of all students. This has major implications for school organisation and leadership and for overall educational policy. (p. 407)

Brussino (2021) emphasized that “classrooms have become increasingly diverse places where students from various backgrounds share their learning experiences. Education systems need to ensure that teachers are adequately prepared for inclusive teaching and supported throughout their career” (p. 4). Moore (2022) found that, “as they participated in the professional development activities over time, classroom teachers became better able to plan and teach more inclusively, especially when they collaborated” (p. iv). She goes on to describe this professional development as learning that “specifically targeted inclusive conditions and frameworks” (Moore, 2022, p. 191). Cerna et al. (2021) agreed that “capacity development within an education system plays a key role in supporting diversity, equity, and inclusion” (p. 36) and that “teachers need to be equipped with relevant knowledge, capabilities, dispositions, values, and skills” (p. 37). Causton-Theoharis and Theoharis (2009) stated that “school leaders must provide explicit training to teachers and staff to build their capacity to support all kids in inclusive settings, to differentiate instruction and to collaborate” (Committed Leadership section, para. 5).

The literature is clear that a systemic focus on building the professional capacity of teachers and staff to implement inclusive pedagogy is a high-leverage strategy that will positively impact student learning and achievement. Pantić and Florian (2015) define inclusive pedagogy as:

...an approach that attends to individual differences between learners while actively avoiding the marginalisation of some learners and/or the

continued exclusion of particular groups, for example, ethnic minority students, those from culturally diverse backgrounds, non-native language speakers, students with additional needs, and those from lower socio-economic backgrounds who may be disadvantaged by poverty. (p. 334)

This approach urges teachers to begin with the assumption that complexity and diversity exist in their classrooms and that these are to be celebrated, rather than feared (Brussino, 2021; Moore, 2016, 2022). This concept, though it may seem simple enough, may in fact be very challenging to implement.

The central message is simple: every learner matters and matters equally. The complexity arises, however, when we try to put this message into practice. Implementing this message will likely require changes in thinking and practice at every level of an education system, from classroom teachers and others who provide educational experiences directly, to those responsible for national policy. (UNESCO, 2017, p. 12)

Planning for diversity, therefore, becomes an important strategy (Moore, 2016). In fact, “evidence... shows how proactive planning frameworks such as standards-based and backwards design planning, differentiated instruction and curriculum, and universal design for learning can be utilized in ways that meet the needs of a range of learner ability” (Moore, 2022, p. 54). Building the professional capacity of teachers and staff in planning for diversity, therefore, can help system education leaders realize a truly inclusive education system. UNESCO (2017) outlined factors that can help or hinder the development of an inclusive education system, including “teacher skills and attitudes, infrastructure, pedagogical strategies, and the curriculum” (p. 13). They remind educational leaders at every level that they either have control over these factors or can have a significant influence on them (UNESCO, 2017, p.13). In other words, system education leaders have the ability to impact students’ classroom experiences and ensure that their systems are truly inclusive.

Fullan (2011) reinforced the impact of building professional capacity in the system: “As teacher and leader capacity become stronger, peers become the greater driving force. By mobilising peers, leaders accelerate whole system reform and establish conditions for sustainability” (p. 4). Ainscow (2010) reinforced this as well:

...changing outcomes for all students is unlikely to be achieved unless there are changes in the behaviours of adults... the starting point must be with staff members: in effect, enlarging their capacity to imagine what might be

achieved, and increasing their sense of accountability for bringing this about.
(p. 412)

Clearly, then, building professional capacity in the area of inclusive pedagogy is a high-leverage strategy to address classroom complexity that system education leaders could take advantage of to create a ripple effect of change and growth throughout their complex systems.

3. System Education Leader Survey Results

A survey of superintendents (or designates) was conducted in June and July of 2023. Fifty-seven responses were collected, representing 56 school authorities across the province. The breakdown of represented school authorities was:

- 38 public school authorities
- 12 separate school authorities
- 4 charter school authorities
- 2 francophone school authorities

Respondents included superintendents, deputy superintendents, assistant/associate superintendents, directors, administrators, and a coordinator.

3.1 Learning Disruptions Grant

The first section of the survey asked respondents for input regarding their use of the Learning Disruption Grant during the 2021-2022 and 2022-2023 school years. 100% of the responding school authorities had accessed Learning Disruption Grant dollars in both the 2021-2022 and 2022-2023 school years. Funding was used by school authorities to support:

- Additional teacher FTE (22.79%),
- Additional educational assistant FTE (19.84%),
- Purchasing resources to support intervention (19.57%),
- Training and professional development for staff (19.03%),
- Purchasing resources to support instruction (16.35%), and
- Other (2.41%).

3.1.1 Promising Practices

Survey respondents were asked to identify promising practices that emerged in their school authority as a result of their work to address classroom complexity tied to learning disruption during the 2021-2022 and 2022-2023 school years.

From the responses, 5 overarching promising practices emerged that had a positive impact on student learning:

- Building professional capacity of staff,
- Implementing targeted interventions to address student needs,
- Use of assessment data to inform instruction and intervention,
- Availability of additional resources, and
- Importance of collaboration.

Building Professional Capacity of Staff

Building the professional capacity of staff was the most frequently mentioned promising practice by survey respondents. Respondents shared the specific strategies they implemented in their school authority designed to build the professional capacity of their staff:

- Training for teachers to provide in-class interventions including a focus on differentiation, Universal Design for Learning strategies, and leveraging the work of Dr. Shelley Moore.
- Training for teachers in effective, research-based universal literacy instructions including the work of Orton and Gillingham, Dr. Georgiu, Dr. Parilla, Dr. Kohnen, the Science of Reading, Elkonin boxes, and the Right to Read program.
- Training for teachers in effective, research-based universal numeracy instruction, including helping students move from conceptual to procedural, Graham Fletcher's work, Fact Fluency Kits, and Mathology.
- A focus on engaging learning activities such as learning through games, reading engaging literature, inquiry-based learning, and math talks.
- Training for teachers in universal social/emotional/mental well-being strategies.
- Addressing student needs in an inclusive environment.

A major component of our approach to the learning disruption grant was to build capacity in classroom teachers to provide 1:1 or small group interventions with students. By focusing on an enhanced capacity, we were more likely to foster sustainable shifts in practice that would become embedded in our organization beyond the duration of the grant. (survey response)

Implementing Targeted Interventions to Address Student Needs

The second most frequently mentioned promising practice was the implementation of targeted interventions to address student needs. Respondents shared that, within their school authority, small-group targeted interventions were planned and implemented based on student needs. They emphasized the importance of early identification and intervention for student success. Respondents also highlighted the importance of logistics when planning for interventions, including time for intervention built into school timetables and specialized intervention structures and processes implemented as required.

Data-informed intervention practices in the early years have an identifiable impact on student learning. Our two greatest learnings are that an intervention model, whatever it looks like, needs to be flexible to meet the shifting needs of students, AND intervention needs to be an extension of the classroom — that classroom teachers are directly connected to the work the intervention team does and that this work is not separate. (survey response)

Use of Assessment Data to Inform Instruction and Intervention

Respondents highlighted the importance of pre-assessment to identify students' needs and inform instruction. This was connected to the Alberta Education required literacy and numeracy assessments, which served to emphasize the value of pre-assessments. One survey participant commented that “this was a good reminder of the importance of assessment and how we can leverage it.” Several respondents mentioned the use of data to inform and track the effectiveness of interventions within their school authority. Additionally, some respondents indicated that their school authority is now exploring or enhancing their common assessments in literacy and numeracy.

Availability of Additional Resources

The additional resources provided as part of the Learning Disruptions Grant were mentioned by several respondents as benefitting student learning by allowing school authorities to hire additional staff to provide small-group interventions that were flexible and responsive to student needs. Many school

authorities used some of the additional funds to purchase and implement targeted resources to support intervention such as Heggerty or Florida Reading Institute resources. Additionally, central expertise was leveraged to support school and teachers. This central support involved various individuals, including learning coaches, literacy coaches, behaviour consultants, and intervention teams.

Importance of Collaboration

The importance of school teams collaborating to address students' needs was mentioned frequently by respondents. School authorities provided time for teachers to collaborate, and this was highlighted as an important factor in the successful implementation of collaborative structures and processes.

Though not an overarching promising practice, it is worth noting that several respondents mentioned that a systematic approach to the implementation of the Learning Disruptions Grant proved successful. Examples of this systematic approach included implementing a continuum of supports, reviewing district frameworks and protocols, and setting consistent expectations for implementation.

3.2 Classroom Complexity

The second section of the system education leader survey invited respondents to share their thoughts about classroom complexity.

3.2.1 Defining Classroom Complexity

The following themes emerged from survey responses as important considerations when defining classroom complexity:

Diversity of Needs in an Inclusive Classroom Setting

Respondents identified the increasing variety of learning/academic needs and styles in classrooms that require differentiated instruction and responses from teachers. Respondents indicated that students in a given classroom likely have a wide range of literacy and numeracy levels that require intervention and support.

Social/emotional needs have also become a significant focus of classroom and school instruction and response to intervention, increasing the complexity of classrooms. Several respondents commented that class size and make-up (e.g., multi-graded) are factors that contribute to classroom complexity and increase workload for teachers.

This theme of the diversity of needs in an inclusive classroom setting underscores the importance of inclusive practices to address the needs of all students. Many respondents commented that building professional capacity among staff members to address diversity was a focus of their work in response to classroom complexity.

Impacts of COVID-19

The COVID-19 pandemic has exacerbated classroom complexity, leading to an increase in student learning gaps, mental health concerns, and social-emotional challenges. Respondents commented that learning gaps have been identified and are tied to learning disruption during the pandemic period.

Family dynamics have shifted, and parental demands on schools have increased, which are both significant factors in classroom and school complexity.

Increasing Student Needs Requiring Specialized Supports

Respondents highlighted the necessity for tailored interventions and individualized support to meet the increasingly diverse needs of students. Across the 56 school authorities represented in the survey responses, increasing needs were noted in the areas of student behaviour, social/emotional skills, mental health, complex physical/medical needs, students with diagnosis and/or code, trauma background, and school readiness.

Additionally, many school authorities reported increasing numbers of students with English as an Additional Language who require interventions and programming supports.

Teacher/Staff Support and Training

Respondents commented that teachers require additional support, training, and professional development to effectively address classroom complexity. Many respondents highlighted the importance of building teacher capacity to meet the diverse needs of students. Several respondents also indicated that teachers' level of experience as well as teacher wellness and mental health were additional factors that contribute to classroom complexity.

Classroom complexity is a nuanced mix of a number of factors which may differ from one location to the next as well as over time. Classroom complexity includes all those factors which need to be considered in addressing staffing and other resource needs and deployment. Classroom complexity recognizes the dynamic interactions between students, staff, and the learning environment, requiring educators to understand and

respond appropriately to the diverse needs, abilities, backgrounds, and learning styles of students while facilitating an inclusive and engaging classroom culture that promotes optimal teaching and learning. (survey response)

3.2.2 Factors Impacting Classroom Complexity

Respondents listed hundreds of factors that impact classroom complexity in their school authorities. Using a method to analyze the frequency of themes in respondents' comments, the following list captures the factors that impact classroom complexity, listed from the most frequently mentioned factor to least frequently mentioned factor:

- Student cognitive/academic needs (39)
- Student behaviour needs (31)
- Student mental health needs (28)
- Demographics including socio-economic status, refugee or immigration status, poverty, FNMI population, cultural diversity (28)
- Students with English as an Additional Language needs (17)
- Family situations and circumstances (17)
- COVID learning gaps (14)
- Class sizes (14)
- Student medical or physical needs (13)
- School authority proximity to services (13)
- Student social/emotional needs (11)
- Ability to hire and retain skilled staff (10)
- Staff capacity (10)
- Student attendance (7)
- Multi-graded classrooms (6)
- Coded students (5)
- Students with trauma backgrounds (5)
- School readiness (4)
- Staff mental health needs (4)
- Adequate funding (4)
- Student gross/fine motor skills (3)
- Gender identity (3)

- Parental capacity (3)

Respondents were also asked to identify the top 3 factors they expect to impact classroom complexity in their school authority as they move into the 2023-2024 school year. They identified the following factors:

- Increasing student mental health concerns (37)
- Increasing numbers of students with complex needs (36)
- Increasing numbers of students requiring targeted or individualized programming (31)
- Increasing student behavioural concerns (27)
- Learning loss – social/emotional skills (12)
- Learning loss – literacy skills (11)
- Implementation of new curriculum (11)
- Learning loss – numeracy skills (7)
- Increasing numbers of refugee/immigrant students (7)
- Increasing class size (4)
- Decreased socio-economic status of community (3)

The sheer number of students who appear to need supports has been overwhelming, and while many of those students’ skills grow and are no longer in need of support, it was an unexpected challenge at the start of the year, causing teachers to burn out early in the year. This year we have had more teacher and support staff leaves than any other year. Right from the start, the complexity seemed overwhelming, causing school staff to run out of gas earlier in the year than usual, and the number of students with needs kept coming through the year. This caused teachers to push back against practicing an inclusionary approach and start asking for specialized programs or placements for students who essentially don’t need those approaches – they need consistent and strength-based instruction. Additionally, we were short substitutes for both teachers and support staff all year, putting further strain on the system as teachers who were at school gave up prep, increasing exhaustion levels, as well as significantly reducing our professional learning opportunities. (survey response)

3.2.3 Strategies Currently in Place to Address Classroom Complexity

It is clear from the survey results that school authorities across Alberta

employ a myriad of strategies to address complexity in their schools and classrooms. The strategies identified can be categorized into strategies related to systemic learning and programming and those related to personnel and resources.

Systemic Learning and Programming

Overwhelmingly, respondents listed strategies related to systematic learning and consistent programming as effective strategies for addressing classroom complexity.

- Building professional capacity (36)
- Mental health supports (30)
- Collaborative structures and processes (23)
- Literacy instruction and intervention (14)
- Numeracy instruction and intervention (12)
- Use of data (12)
- Implementation of a continuum of supports (12)
- Specialized programming (8)

Building professional capacity with staff was the most frequently mentioned strategy. This included training and professional learning opportunities for teachers and educational assistants in a variety of topic areas, such as literacy, numeracy, executive functioning, positive behaviour supports, universal instruction, intervention strategies, differentiated instruction, inclusion, universal speech and language, occupational therapy and physical therapy strategies, and supports for students with English as an Additional Language needs. Respondents also mentioned a focus on building the professional capacity of the leaders in their school authority, including a focus on instructional leadership skills.

Many school authorities have also implemented a systemwide approach to supporting the mental health needs of students and staff. Some school authorities provide targeted supports in their schools through counsellor or Family Wellness Worker positions. Other school authorities mentioned implementing programming to enhance universal mental health and social/emotional strategies at the classroom level. Some respondents indicated they have a centralized position to support staff mental health. Additionally, training and professional learning for staff in the areas of trauma-informed teaching, social/emotional learning, and wellness were mentioned as effective strategies.

The value and importance of collaboration was highlighted by many respondents. Many school authorities have implemented a consistent approach to collaboration across their schools. Embedded time for school teams to meet and plan for student needs was emphasized. Respondents also recognized the importance of collaboration with multidisciplinary teams, specialized service providers, and central support teams. Ensuring that actions were planned and implemented as a result of collaboration was important to the success of this strategy. Additionally, the purposeful use of data and the response to the data analysis was mentioned by respondents as a key part of the effectiveness of collaboration, as was a systematic implementation of continuum of supports, including clear pyramids of intervention.

Personnel and Resources

Respondents described the strategies related to personnel and resources that helped to address classroom complexity in their school authorities.

- Central and specialized supports (20)
- Additional teachers (15)
- Additional educational assistants(13)
- Resource allocation model (8)
- Resources purchased (2)

Centralized supports includes specialists, consultants, coaches, and facilitators support school teams with programming and planning for complex classrooms. Additional professional staff including teachers, educational assistants, speech-language pathologists, occupational therapists, physical therapists, low-incidence specialists, psychologists provide additional supports for school teams. Respondents emphasized that the number of additional support personnel in their system was dependent on the funding available.

Several respondents also indicated that they had revised or revisited their resource allocation models to address increasing complexity in classrooms. Equity and needs-based allocation models were mentioned. Respondents sought opportunities to apply for and access various grants. One respondent indicated that an equity fund had been established in their school authority, which could be accessed to address complex situations and needs.

3.2.4 Classroom Complexity Grant for 2023-2024

According to page 51 of the *Funding Manual for School Authorities*, "the Classroom Complexity Grant is provided to school authorities to address classroom complexity by adding more classroom support staff such as

educational assistants or an increase in their hours, by providing more training opportunities for staff, and/or by hiring specialists such as counselors, psychologists, interpreters, and more teachers” (Alberta Education, March 2023).

When asked what factors were taken into consideration when strategic planning and allocating resources to address classroom complexity for the 2023-2024 school year, respondents indicated they considered:

- School Authority Education Plan (47)
- School authority local data measures (44)
- Learning disruption student data (36)
- Criteria from the Funding Manual for School Authorities (33)
- Alberta Education Assurance Measure (AEAM) data (32)
- Stakeholder engagement data (32)
- Resource allocation process or formula (32)

Respondents were asked to indicate how their school authority would be utilizing the Classroom Complexity Grant for the 2023-2024 school year. Responses (including frequency) were as follows:

- Additional educational assistant FTE (37)
- Specialist services – counsellors, psychologists (31)
- Training opportunities for staff (28)
- Additional teacher FTE (23)
- Increased hours for educational assistants (21)
- Increased hours for teachers (3)
- Maintaining current staffing levels (2)
- Increased outreach programming (2)
- Specialist services – speech-language pathologists (2)
- Specialist services – interpreters (1)
- Contracting English as an Additional Language learner support (1)

In terms of measuring the impact of the classroom complexity grant in their school authority, respondents indicated that they would use a variety of measures including referral data, student mental health data, behaviour incident tracking, English as an Additional Language benchmark data, individualized student needs data, provincial learning loss data, tracking of additional FTE and staff hours, tracking of participation in trainings offered,

and student attendance data.

Respondents identified the following challenges or barriers to addressing classroom complexity in their school authority during the 2023-2024 school year:

- Availability of skilled/trained staff (55)
- Funds to adequately support student needs (47)
- Access to specialized services and supports (37)
- Proximity to specialized services and supports (35)
- Capacity of the system to adequately address classroom complexity (32)
- Community agencies and partnerships (24)

Respondents alluded to the difficulty of finding and retaining qualified staff, particularly in regions where the cost of living is high and in remote, rural areas. Respondents also mentioned increases in staff absences with difficulty finding coverage. Geographic barriers were noted as a challenge to finding specialized service providers and supports.

The final section of the survey asked respondents to provide their recommendations for short- and long-term strategies to address classroom complexity. These are reported and summarized in the following section.

4. System-Level Recommendations to Address Classroom Complexity

The superintendent survey asked respondents to identify short- and long-term strategies and recommendations for addressing classroom complexity in their school authority. These are shared below, with a collated summary of the overall recommendations from the survey participants.

4.1 Short-Term Recommended Strategies

Survey respondents were asked to identify short-term strategies to address classroom complexity. Though one survey respondent indicated that classroom complexity “isn’t a short-term problem”, respondents identified dozens of strategies related to education, support, and resource allocations that would address the needs of struggling students, particularly those with complex and diverse learning needs.

Funding and Resources Allocation

Strategies related to the theme of funding and resource allocation were the most frequently mentioned. Respondents emphasized the need for increased funding to hire additional staff. There is a need for additional funding to respond to staffing, class size, and student need issues that arise in the fall and throughout the year. A funding model that is responsive to changing needs was mentioned by several respondents. Some indicated that the weighted moving average funding model has negatively impacted rural school authorities.

Respondents also suggested the need for increased funding for mental health supports, as mental health needs (both student and staff) contribute to classroom complexity. Continued and enhanced funding for specialized services and supports was mentioned by respondents with particular consideration for areas of the province that face geographic challenges when it comes to engaging these specialists. Respondents suggested an expansion of the learning disruption funding beyond the early years, as learning disruption has had an impact on students across all grades K-12.

Building Professional Capacity

A focus on building professional capacity as a short-term strategy to address classroom complexity was the second most frequently mentioned strategy by survey respondents. It was clear that building the professional capacity of teachers, educational assistants, and leaders throughout the system is a high-leverage strategy. Respondents identified the need to build professional capacity in areas such as literacy/numeracy instruction and intervention, mental health, inclusion, differentiated instruction, response to intervention, curriculum, culturally responsive teaching, behaviour supports, tier 1 instruction, crisis intervention, trauma-informed instruction, and social/emotional learning.

Several respondents highlighted the fact that, for school authorities to effectively build the professional capacity of their staff, funds are required. There are costs associated with this work, including release time, mileage, and resources.

Supports for Complex Students

Not surprisingly, survey respondents highlighted the implementation of supports for struggling students as a short-term strategy to address classroom complexity. They emphasized that specialized supports should be equitably available, regardless of geography. Implementing interventions in the early years was identified as an effective strategy. Additionally, respondents shared a

variety of strategies they would be implementing, including literacy/numeracy interventions, continuums of support, supports for complex behaviours, coordinating community supports for families, and implementing system-wide programming strategies. The ability for school authorities to be flexible and responsive in delivering supports to address student needs was a key theme in the responses.

Staff Availability and Retention

Several respondents mentioned challenges with hiring and retaining qualified staff, especially in remote areas and the need to attract skilled educators and support personnel. A suggested short-term strategy is to leverage provincial assistance with these challenges, perhaps through an initiative and partnership with the Alberta Government Workforce supports division.

Mental Health Programs and Supports

The need for better support from mental health services, including collaboration with mental health therapists and increased funding for mental health support in schools, was a common theme in the survey responses. Providing social-emotional education and support for students as well as addressing behaviour challenges and traumatic experiences is also important.

Collaboration

Respondents suggested that continued opportunities for collaboration among teachers, specialists, and support staff to ensure a holistic approach to student progress and intervention planning would help address classroom complexity. Time provided for these collaborative opportunities would be important.

Overall, respondents emphasized the urgency to address the diverse and complex needs of students, the challenges in providing adequate support, and the importance of continuous training and resource allocation to enhance the educational experience and well-being of students and staff. Though classroom complexity may not be a short-term problem, these short-term strategies will help support schools and systems as they work to create optimum learning environments of all students in an inclusive education system.

4.2 Long-Term Recommended Strategies

The long-term strategies suggested by survey respondents belong to the same categories as short-term strategies, with expanded suggestions for long-term solutions to address classroom complexity.

Funding and Resources Allocation

Respondents suggested that sustainable and predictable funding would be important so that school authorities can implement longer-term plans to address the complexities of classrooms and student needs. They suggested increased funding to reduce class sizes, increase staffing, address English as an Additional Language needs, implement specialized services and supports, provide early intervention, and implement universal social/emotional learning programming. Consideration should be given to rural and geographic factors that increase costs to local school authorities. Some respondents suggested that there should be an integrated pooling of cross-ministry resources to acknowledge the work that education performs that lies within the realm of responsibility of other ministries (mental health supports, for example). Funding should be allocated to support building professional capacity. Finally, a few respondents mentioned the importance of new school builds and more portable classrooms, which would allow them to reduce class sizes and help to address classroom complexity.

Building Professional Capacity

A continued focus on staff learning and growth was emphasized by respondents as an effective strategy, but one that requires funding. Respondents suggested a focus on pre-service training for upcoming teachers that includes planning for diversity and complexity and strong universal instructional practices including differentiated instruction. Support for mentorship programs was mentioned as a potential strategy to build professional capacity. Some respondents suggested a program similar to the Bridge-to-Teacher Certification Program for CTS for specialized service providers (Speech-Language Pathologists, Occupational Therapists, Physical Therapists, Psychologists, Low-incidence Specialists) to attract more specialists.

Supports for Complex Students

Survey respondents recognized quality universal programming as an effective strategy for supporting all students in an inclusive environment. Releasing updated Standards for Special Education would help school authorities to ground their work in updated standards for an inclusive education system. Respondents suggested a long-term focus on improving access to specialized supports and services for students and families. This could include divisional and community collaboration, cross-ministerial partnerships and supports, and enhanced access to multi-disciplinary specialists. Some respondents requested government direction regarding the safety of staff and other students, as they are seeing more injuries and

incidents related to student behaviours. Another suggestion was a federal/provincial partnership approach to meeting the needs of refugee students.

Collaboration

Long-term strategies related to collaboration suggested by respondents included complex needs zone committees involving collaboration between ministries, community support for newcomers and families of children with complex needs, and a continued focus on data analysis and action planning by school team. Respondents highlighted that many factors impacting classroom complexity are societal or community based and thus require a collaborative solution.

Staff Availability and Retention

There is a desire from survey respondents to explore a provincial approach or strategy for filling teaching positions. This could include support with filling substitute teacher positions, which is a struggle for many school authorities. A review of pay grids to ensure they are competitive was suggested. Respondents also suggested a promotional campaign to highlight the benefits provided to school authority employees.

Mental Health Programs and Supports

Survey respondents suggest that the funding currently in place for the Mental Health in Schools Pilot Projects be sustained. These projects are providing much-needed support for mental health and well-being in schools. There was also a suggestion to engage with Alberta Health Services to find an effective way to provide mental health supports in communities. Education partners have taken on much of the work in this area. Respondents also suggested that strategies be implemented to address teacher wellness.

Universal Instruction

A few respondents suggested strategies to ensure that universal instruction is as strong and effective as possible. They suggested strategies for teachers to plan for and address the diversity in their classes such as class profiles, differentiated planning and instruction, and effective pre-assessment strategies.

4.3 Summary of Recommendations

There was certainly overlap in the short- and long-term recommendations provided by survey respondents. Table 1 captures the

collated overall recommendations, including recommendations emerging from the literature review.

Overall Recommendations to Address Classroom Complexity	
<p>Understanding and acknowledging that Alberta school authorities are complex adaptive systems and that the COVID-19 pandemic had an impact on the complexities that exist in Alberta classrooms, the following recommendations are suggested to address classroom complexity within an inclusive education system:</p>	
<p>Funding and Resource Allocation</p>	<ul style="list-style-type: none"> - Provide increased funding that is responsive to changing needs at the local level throughout the school year. - Maintain or expand grant funding such as the Learning Disruptions Grant, the Classroom Complexity Grant, and the Mental Health in Schools pilot projects. - Ensure that funding is sustainable and predictable. - Integrate resources across ministries.
<p>Build Professional Capacity</p>	<ul style="list-style-type: none"> - Enhance and create opportunities to build professional capacity in the areas of universal inclusive pedagogy, planning for diversity, and leadership for an inclusive education system. This work should be focused on building the professional capacity of teachers, educational assistants, school leaders, and system education leaders. Funding is required to support this work. - Ensure that mentorship programs and pre-service training for upcoming teachers include strategies and supports for teaching to diversity, inclusive pedagogy, and addressing classroom complexity.

<p>Supports for Complex Students</p>	<ul style="list-style-type: none"> - Implement interventions for struggling students, particularly in the early years. - Ensure equitable access to specialized supports and services. - Improve access to multi-disciplinary specialists. - Ensure that quality universal programming is in place in all classrooms. - Release updated standards for special education to ensure a consistent approach to inclusivity.
<p>Staff Availability and Retention</p>	<ul style="list-style-type: none"> - Consider a provincial approach to hiring and retaining staff. - Review pay grids to ensure competitiveness. - Promote the benefits of school authority employment.
<p>Mental Health Programs and Supports</p>	<ul style="list-style-type: none"> - Enhance mental health supports available in schools and communities. - Increase collaboration with Alberta Health Services, mental health therapists and professionals. - Increase funding for mental health services within schools including sustaining existing funding for Mental Health in Schools Pilot Projects.
<p>Collaboration</p>	<ul style="list-style-type: none"> - Continue to create opportunities for collaboration among teachers, specialists, and support staff. - Consider collaborative structures at the regional or zone level, bringing together stakeholders from various ministries. - Ensure that ongoing data analysis is part of collaborative processes and resulting action plans.

Table 1. Overall recommendations to address classroom complexity

5. Conclusion

The Classroom Complexity Grant was initiated to provide school authorities with targeted funds to address the increasing complexity in their classrooms and schools. This literature review and survey results analysis clarifies that a systemic focus on building the professional capacity of staff, ensuring sustainable and increased funding, addressing mental health supports and staff recruitment and retention issues, and promoting and encouraging continued collaboration will lay the foundation for long-term systemic improvements and increase our collective capacity to address classroom complexity. By working together to support system education leaders in creating and sustaining inclusive education systems throughout the province of Alberta, we can ensure that each and every student within our care will benefit from quality teaching and experience optimum learning opportunities.

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Appendix A - CASS Classroom Complexity Survey

Thank you for taking the time to complete this survey about your work to support and strengthen the strategic purpose of the classroom complexity grant in your school authority. The results of this survey will be compiled into a report about the findings, which will be provided to CASS.

1. Please indicate your school authority:
2. What is your current position within the school authority?
3. Your name:

LEARNING DISRUPTIONS

The following questions relate to the Alberta Education COVID-19 Learning Disruptions grant.

4. Did your school authority access the Learning Disruptions grant in 2021-2022?
 - Yes
 - No
5. If yes, what were the 2021-2022 grant dollars used for?
 - Additional teacher FTE
 - Additional educational assistant FTE
 - Training and/or professional development for staff
 - Resources to support instruction
 - Resources to support intervention
 - Other
6. Did your school authority access the Learning Disruptions grant in 2022-2023?
 - Yes
 - No
7. If yes, what were the 2022-2023 grant dollars used for?
 - Additional teacher FTE
 - Additional educational assistant FTE
 - Training and/or professional development for staff

- Resources to support instruction
- Resources to support intervention
- Other

8. What promising practices to address classroom complexity tied to learning disruption emerged in your school authority as a result of your work during the 2021-22 and 2022-23 school years?

CLASSROOM COMPLEXITY

9. How does your school authority define or understand classroom complexity?

10. What factors contribute to the complexity of classrooms within your school authority?

11. What are the systemic strategies, approaches, or solutions your school authority utilizes to address the complexities in the classroom?

12. Moving into the 2023-2024 school year, what are the top 3 factors that will impact classroom complexity in your school authority?

- Increasing student mental health concerns
- Increasing student behavioural concerns
- Learning loss – literacy skills
- Learning loss – numeracy skills
- Learning loss – social/emotional skills
- Increasing number of students with complex needs
- Increasing number of refugee/immigrant students
- Decrease in socio-economic status of community
- Increasing number of students requiring targeted or individualized programming
- Implementation of new curriculum
- Increasing diversity in classrooms
- Increasing class size
- Other

13. According to page 51 of the Funding Manual for School Authorities, "the Classroom Complexity Grant is provided to school authorities to address classroom complexity by adding more classroom support staff such as educational assistants or increase their hours, by providing more training

opportunities for staff, and/or by hiring specialists such as counselors, psychologists, interpreters and more teacher.”

When strategic planning and allocating resources to address classroom complexity in your school authority for the 2023-2024 school year, what factors were taken into consideration?

- School Authority Education Plan
- Alberta Education Assurance Measure (AEAM) data
- School authority local data measures
- Stakeholder engagement data
- Learning disruption student data
- Criteria from the funding manual
- Resource allocation process or formula
- Other

14. How will your school authority be utilizing the Classroom Complexity Grant for the 2023-2024 school year?

- Additional teacher FTE
- Additional educational assistant FTE
- Increased hours for teachers
- Increased hours for educational assistants
- Specialist services – counselors, psychologists
- Specialist services – interpreters
- Training opportunities for staff
- Other

15. How will you measure the impact of the Classroom Complexity Grant in your school authority?

16. What challenges or barriers do you anticipate your school authority will face in addressing classroom complexity in the next year? Please select all that apply.

- Availability of skilled/trained staff
- Access to specialized services and supports
- Funds to adequately support students’ needs
- Community agencies and partnerships
- Proximity to specialized services and supports

- Capacity of the system to adequately address classroom complexity
- Other

17. In your opinion, what **short-term** strategies are needed to ensure that classroom complexity is addressed in your school authority?

18. In your opinion, what **long-term** strategies are needed to ensure that classroom complexity is addressed in your school authority?

19. Do you have any additional comments regarding classroom complexity, learning loss funding, or your vision for addressing classroom complexity in the future?

20. I consent to having my school authority's responses cited in the final classroom complexity research report which will be submitted to CASS. Individual names will not be cited.

- Yes
- No
- I would like to be directly consulted prior to any of my responses being cited.

21. If you would like to be directly consulted prior to any of your responses being cited, please provide your email address: