Advancing research-based classroom assessment in a Canadian secondary school: Navigating the dilemmas

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Abstract

Advancing research-based classroom assessment (CA) in K-12 schools is a difficult and often opaque process. Rather than challenges that can be overcome, educators striving to more fully implement research-based CA practices are likely to find themselves navigating a number of ongoing dilemmas. In this paper, we describe some conceptual, pedagogical, political, and cultural dilemmas that emerged during a multi-year initiative to implement more equitable CA practices in a secondary school in Manitoba, Canada. We share strategies for navigating each dilemma in relation to several dimensions of the CA process (e.g., planning and designing, documenting and reporting, etc.). We also offer suggestions for how teachers, school and district leaders, and teacher educators might use the insights from our analysis proactively as they seek to further develop CA practices.

Introduction

Given the multifaceted nature of classroom assessment (CA) (Fulmer et al., 2015; Wolterinck et al., 2022), educators are likely to experience a number of dilemmas as they try to more fully enact research-based practices (Suurtamm & Koch, 2014). The purpose of this paper is to describe some of the strategies that were used to navigate dilemmas that emerged in a secondary school in the province of Manitoba, Canada as educators worked to further develop their approach to CA. Martha Koch is a university-based researcher and teacher educator who has been involved in initiatives to support pre-service and in-service teachers, school administrators, and

district leaders as they develop their CA practices. Dionne Potapinski is a high school principal who has worked intensively with her school community for several years to foster research-based CA practices to enhance equity for students. We began collaborating when we recognised our mutual interest in improving CA practices in K-12 and post-secondary settings.

In our different roles, we both recognise the need for professional learning opportunities to help educators shift their practices in a comprehensive way rather than enacting one or two selected principles (Boström & Palm, 2019; Schildkamp et al., 2020). We know that professional learning is needed in areas such as: giving feedback; asking questions to elicit student thinking; supporting students in peer and self-assessment; and using insights from CA to guide instruction (Andersson & Palm, 2017; Andrade & Heritage, 2018; Schildkamp et al., 2020). Although dialogue and collaboration among educators is beneficial (Harrison, 2005; Suurtamm & Koch, 2014) and models of professional learning specific to CA have been proposed (e.g., de Vries et al., 2023; Wolterinck et al., 2022), we are aware that further developing CA practices remains a difficult and often opaque process.

  In this paper, we examine some of the changes in CA practice that Dionne and the educators at Glenlawn Collegiate Institute have made since 2015. Rather than provide a chronological summary of activities, we share their experiences by focusing on some of the dilemmas they encountered. The word "dilemma" refers to a challenging situation where no straightforward resolution is evident. Examining dilemmas that emerge and strategies for navigating them can reveal valuable insights into educational change (Caspari-Gnann & Sevian, 2022). In our view, focusing on dilemmas is preferable to characterising change in CA as a process where obstacles are overcome. We find that many situations that arise as educators strive to enact research-based CA are not barriers that can be removed but ongoing realities to be navigated. By describing the experiences of these educators, we can help others anticipate dilemmas that may arise in their context and plan ways to mitigate them. This proactive stance can also reduce misunderstandings and decrease feelings of resentment or opposition among students, teachers, and parents as they engage with research-based CA practices that differ from their prior experiences. This approach may also help to ensure that research-based practices are not discarded as ineffective or impractical before they have been fully implemented.

To share our analysis of the experiences of these educators, we have chosen to use a narrative structure rather than the literature review, methodology, observations, and results structure often used to describe empirical research. We begin by situating our work theoretically. We then provide an overview of the school context, describe four of the dilemmas that emerged, and share some strategies that Dionne and the school community used to reduce the impact of each dilemma. We conclude our narrative with suggestions for how other educators might use the insights from this analysis and offer some recommendations for future research.

Situating our work theoretically

We share a vision for CA that is culturally responsive (Taylor & Nolen, 2022) and includes: a decreased emphasis on grades (Hogberg et al., 2021; Klapp, 2015); leveraging the benefits of formative assessment (Andersson & Palm, 2017; Andrade & Heritage, 2018; Shepard et al., 2018); building students' skills in self-regulated learning (Andrade & Brookhart, 2020; de Vries et al., 2023); reducing the negative impacts that CA can have on students' mental health (Giota & Gustafsson, 2020); and actively involving students and families in CA (Cowie & Mitchell, 2015). We advocate for these approaches to CA because studies indicate that they contribute to a caring learning environment, foster enduring learning, and enhance academic achievement. In this section, we describe how we conceptualise research-based CA, present a visual representation of the CA process, and describe the assessment dilemmas framework that guided our analysis.

Conceptualising research-based classroom assessment

Brookhart and McMillan (2020) define CA as "a process that teachers and students use in collecting, evaluating, and using evidence of student learning for a variety of purposes, including diagnosing student strengths and weaknesses, monitoring student progress toward meeting desired levels of proficiency, assigning grades, providing feedback to students and parents, and enhancing student learning and motivation" (p. 4). Many K-12 assessment policies, including those in our region, reflect the range of purposes in this definition. Some policies refer to formative and summative assessment while others situate these purposes within assessment *of* learning, *as* learning, and *for* learning. Regardless of the terminology used

and despite the many practices associated with each purpose, we find that students, parents, and educators tend to focus on grading. Moreover, the distinction between formative and summative assessment is often limited to specifying which assessments will contribute to a student's grade and focusing primarily on those assessments. This approach undermines CA as an integral part of learning while reinforcing a view of grading as "adding up points" rather than a process where the teacher, in consultation with each student, draws on all available information to make a professional judgement of their achievement.

Andrade and Brookhart's (2020) description of CA as "the co-regulation of learning" (p. 351) may help to disrupt this focus on grading and bring more attention to other aspects of Brookhart and McMillan's (2020) definition. Andrade and Brookhart maintain that students engage in recursive phases of self-regulated learning as they connect information and experiences with prior knowledge. At the same time, their learning is co-regulated by teachers, peers, instructional materials, and the learning environment. Andrade and Brookhart identify several phases of co-regulation that unfold in dynamic ways. We find this way of characterising CA aligns with many aspects of culturally responsive assessment. It also fits with our experiences of learning in K-12 and post-secondary classrooms and suggests ways that we can support educators as co-regulators of learning.

A visual representation of the classroom assessment process

Alongside these ways of describing CA, visual representations can be helpful. Drawing on sociocultural views of CA (Elwood & Murphy, 2015), Martha portrays the CA process as a wreath where various dimensions of assessment are represented with ribbons of different colours and widths (see Figure 1). The conceptual elements of the assessment wreath were developed collaboratively with assessment scholar Robin Tierney while the visual elements were created by graphic artist Jackie Duhard (www. duhard.ca). The ribbons are loosely interwoven to convey the unpredictable and messy ways that CA can unfold. For visual ease, five dimensions of CA are highlighted: *planning and designing assessment*; *recognising and valuing learning*; *interacting with students and adapting instruction*; *documenting and reporting learning*; and *supporting ongoing learning*. Although other dimensions could be highlighted, these five encompass

much of an educator's daily practice. In addition, each dimension has been studied by CA researchers. The wreath suggests aspects of practice that an educator might want to further develop while foregrounding the idea that CA is a process that does not follow a linear path. Dimensions overlap and may recur as learning unfolds. For instance, educators typically engage in *planning and designing* early in the process as they identify learning goals and success criteria. This dimension later re-emerges as educators reconsider their plans in light of their observations and interactions with students.
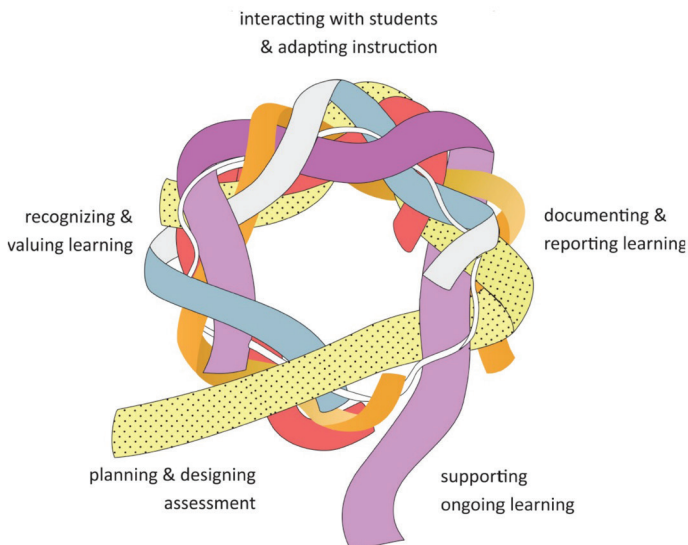

Figure 1 Wreath of the classroom assessment process

The assessment dilemmas framework

Suurtamm and Koch (2014) identify four kinds of dilemmas that educators may encounter when changing their CA practices: conceptual; pedagogical; political; and cultural. They describe the four kinds of dilemma based on the experiences of educators incorporating new CA practices in Grades 4–12 mathematics classrooms. In Table 1, we adapt the mathematics-specific definitions they offered to reflect varied subjects. Suurtamm and Koch note

that different strategies and supports are needed to navigate each dilemma and that the dilemmas that educators experience may not fall neatly into one category. For example, an educator who begins using a new approach to gather evidence of learning may encounter pedagogical dilemmas as they try to create tools to enact that approach. These pedagogical dilemmas may overlap with cultural dilemmas if the tools being introduced are unfamiliar to students, differ from practices of other teachers, or are at odds with parents' expectations.

Table 1 Assessment dilemmas in PK-12 teaching (adapted from Suurtamm & Koch, 2014, p. 269)

	Definition	Examples
Conceptual dilemmas	Deepening understanding of research-based CA and exploring reasons for further developing CA practice (the "why" of assessment)	• Understanding the value of increased formative assessment and decreased summative assessment • Viewing CA as a responsibility shared by students, teachers, and parents
Pedagogical dilemmas	Creating CA tasks, strategies, and tools, and enacting new CA practices (the "how to" of assessment)	• Finding strategies to provide meaningful and timely feedback • Supporting students to engage in self-assessment • Creating comparable evaluation criteria for assignments when students choose the response mode
Political dilemmas	Considering school, district, and provincial policies on CA and large-scale assessment that may not fully align with practices an educator is adopting	• Decreasing the emphasis on grading while fulfilling the requirement to complete report cards • Navigating policies for late or missing work in ways that support learning for every student
Cultural dilemmas	Supporting educators, students, and parents as new CA practices replace established norms and the classroom and school culture change	• Helping parents understand that grades require professional judgement based on many forms of evidence not just adding test scores • Navigating differing views of teachers, students, or parents on re-testing or re-submitting work

Our analysis process

With this framework in mind, after introducing the context of Dionne's school, we identify one overarching dilemma these educators experienced for each kind of dilemma that is identified in Table 1. We provide examples of how each dilemma unfolded in relation to dimensions of the CA process in Figure 1 and share some strategies for mitigating the impact of each dilemma. The dilemmas we describe were identified through a series of conversations between Martha and Dionne over a period of 3 years. We also reviewed: assessment policies; materials from presentations that Dionne made to parents, schools, and educational organisations; documents and other artefacts that Dionne created over the years; and descriptions of assessment at Dionne's school published in local media. Notably, the initiative to more fully enact research-based CA at her school is ongoing and the dilemmas and many of the strategies for mitigating them that we describe are still taking place. However, to reduce confusion for readers, we use the past tense as we describe events.

Context of the school

Dionne's school is located in Louis Riel School Division in the province of Manitoba. Even before Dionne became the principal at Glenlawn Collegiate, a secondary school with about 1,000 students in a diverse neighbourhood in Winnipeg, she recognised that assessment consistently draws the attention of students, parents, and teachers and that changes in CA can significantly impact learning. Glenlawn offers academic programming for Grades 9–12; modified programming where community experience is blended with classroom-based courses; life skills programming; and language and literacy programming for students who are new to Canada. As Dionne began getting to know the school community, her commitment to ensuring that every student experienced success was reinforced. Drawing on the work of Martin Brokenleg, Dionne believes that every student should have the power to make decisions, be successful, have purpose in life, and be loved (Brokenleg & Van Bockern, 2003). She believes that improved learning requires educators to use research-based CA to identify and respond to the needs of each student rather than to coerce them to behave in certain ways.

Since 2015, Dionne has worked with the team at Glenlawn to improve the learning environment. Although these changes were not direct elements of research-based CA, we mention several of them here because they created conditions where more equitable assessment could unfold. For instance, when Dionne considered student attendance, she noticed that the focus was on making students accountable for missed time rather than addressing missed learning opportunities. Dionne worked with teachers to shift their perspective from requiring make-up time as a consequence for absence to seeing additional time with students as an opportunity to work on missed learning outcomes in a supported setting. Another strategy that helped create a fertile environment for research-based CA was changing from a semester schedule to a full-year schedule for core Grade 9 courses (mathematics, science, English, and social studies). The full-year schedule allowed more time for students to develop the independent learning skills they need to be successful in high school. It also allowed more time for teachers to get to know students and understand how to support their learning. This change was so beneficial that it was later extended to core Grade 10 courses.

Dionne encouraged the school community to adopt a holistic approach where social emotional dimensions of learning are considered alongside cognitive aspects. One way the school achieved this was by using the "circle of courage" model, an approach rooted in First Nations' philosophy which helps learners develop a sense of belonging, mastery, independence, and generosity (Brokenleg & Van Bockern, 2003; Van Bockern, 2014). In keeping with this model, Dionne reminded staff to get to know a student's name and a little about their personal situation before responding to something the student had done. In addition, Dionne and the school community regularly evaluated the school using indicators derived from the circle of courage model (e.g., extent that school is a place of compassion and empathy, extent that school supports students in learning emotional and social skills, etc.). Discussing these indicators helped the community to identify strengths and areas for change. Dionne and her staff also examined the use of space within the school. By paying attention to elements such as what is displayed on the walls and how spaces are used, they created an environment that reflects their values and goals.

Dionne sought to create an atmosphere where all members of the school community are valued. She worked to disrupt hierarchical thinking such as

the belief that Grade 12 students' experiences are more important than those of Grade 9 students or that the contributions of educational assistants (EAs) are less valuable than those of teachers. Dionne invited all staff members to attend professional learning sessions where they sat at shared tables to discuss ways to improve learning. As another way of reinforcing a spirit of collaboration, Dionne encouraged the school community to use the social media hashtag "#wearebettertogether".

Within this environment, Dionne and her team have gradually implemented research-based CA practices. To reduce the stress that CA can create and get a more complete picture of student learning, the school no longer holds examinations in the gymnasium. Instead, various forms of summative assessment are used, contributing no more than 10% to each student's grade. Teachers provide comments rather than grades on interim report cards and only include percentage grades on end-of-course report cards. Other changes support students as self-regulated learners. For instance, students are invited to indicate when they are ready to demonstrate mastery of a learning objective rather than being required to demonstrate learning at a time determined by the teacher. For some objectives, students also decide how to demonstrate their learning. In addition, student conferencing is now a mandatory part of determining end-of-course grades at Glenlawn. More details about these and other changes to CA are described as we explore some of the dilemmas that emerged.

Four dilemmas that emerged and strategies for navigating each one

In this section, we describe one overarching dilemma that emerged for each of the kinds of dilemmas described in Table 1. We also describe some of the strategies that Dionne used to navigate each dilemma.

A conceptual dilemma: Building a shared understanding in a dynamic setting

As Dionne worked to advance research-based CA practices at Glenlawn, the need for educators, students, and families to have a shared understanding of principles of research-based CA became increasingly evident. Developing a shared understanding of these principles was, and remains, a dilemma

because substantial time and effort are required and because the process must continue every year as new students, parents, teachers, EAs, and other staff join the school. Extending this dilemma further, Dionne wrestled with how shared understandings might be retained when school leadership changes. We see this as a conceptual dilemma because much of the understanding that is needed centres around the "why" of CA practices. In the interest of brevity, we describe some ways this dilemma unfolded for educators and other staff at Glenlawn even though it is equally important for students and families to develop their conceptual understanding. We discuss the experiences of students and families when we consider the cultural dilemmas that unfolded.

Dionne observed that a shared understanding of CA principles needed to be built despite limited time for professional learning and the diverse prior experiences of teachers and other staff. Because Dionne anticipated this dilemma, she planned from the outset for the initiative to take place over several years. Early on, she also observed how changes in the learning environment helped to mitigate this dilemma. For instance, valuing all members of the school community and establishing norms for learning as a community made it easier to develop shared understandings. As the initiative progressed, Dionne noticed that some educators needed to deepen their understanding before changing their practices but that the experience of changing CA practices could also deepen understandings. Realising that deep conceptual understanding does not need to be entirely in place prior to making changes in CA made this dilemma more manageable.

In our discussions, we found strategies for mitigating this dilemma at Glenlawn related to each dimension of CA in Figure 1. For example, in relation to *planning and designing assessment*, Dionne met individually with teachers early in the school year to discuss their approach to CA and their goals for change. She then provided resources and other supports related to those goals. In addition, Dionne created norms and expectations for teachers as they worked collaboratively during the weekly common planning time established by the school division. These meetings provided opportunities to explore reasons for changing CA practice and to develop new strategies and tools.

During this initiative, Dionne found that some teachers had conceptual dilemmas related to *recognising and valuing learning* in the CA process (see Figure 1). Their difficulties seemed to result from the fact that students are in different places in their learning in relation to a given objective and express their understanding in varied and sometimes unexpected ways. One strategy that Dionne used to support teachers in this aspect of CA was to suggest that they focus less on gathering information to determine a student's grade and more on gathering information that would enable them to describe a student's learning. This conceptual shift reminded teachers of the value of listening, observing, and asking questions as they interacted with students. By emphasising these formative assessment practices, teachers were able to more easily recognise and value each student's thinking.

Dionne also observed some conceptual dilemmas related to *supporting ongoing learning* through CA (see Figure 1). One way she advanced this aspect of CA was to emphasise that, although responsibility for CA has historically rested with teachers, current approaches foreground self-regulated learning and call for responsibility to be shared with students. Dionne found teachers were more likely to struggle to share responsibility for CA with students if they did not have a conceptual understanding of why doing so matters. She also noticed that many teachers were personally invested in, or emotionally tied to, the CA practices they used and that sharing responsibility for CA seemed to pose a threat to their professional identity. One way Dionne reduced the impact of this dilemma was by sharing readings with teachers, EAs, and other staff. For instance, she provided them with copies of *Ungrading* (Blum, 2020). In discussing the book with the team at Glenlawn, Dionne noted that they found the chapters describing CA in secondary schools helpful but they also appreciated the passages describing how these ideas unfold in post-secondary settings. Being reassured that the research-based CA practices they were beginning to implement would not disadvantage students in post-secondary settings seemed to relieve some of the conceptual dilemmas they were experiencing.

Overall, these strategies, among others we do not have space to describe, helped Dionne develop a shared understanding within the school community of some principles of research-based CA that can contribute to greater equity for students. At the same time, the dynamic nature of schools meant that these ideas needed to be revisited frequently.

A pedagogical dilemma: Developing new strategies and tools while teaching

An overarching pedagogical dilemma (see Table 1) that emerged at Glenlawn was the need for educators to develop new CA strategies and tools amidst the other demands of teaching. Teachers sometimes fall back on existing strategies and tools (Wolterinck et al., 2022) or develop new CA approaches in a rushed manner as they try to meet these demands. The COVID pandemic acutely underscored the need for teachers to develop new practices as they teach. But even in less extreme circumstances, the daily demands of teaching are considerable and changes to curriculum, programmes, and policy occur frequently. In this context, developing new strategies and tools is an ongoing pedagogical dilemma rather than an obstacle to overcome. Some strategies for navigating the conceptual dilemmas at Glenlawn described earlier also enabled teachers to develop strategies and tools (e.g., common planning time, meeting individually with teachers) but Dionne found that additional forms of support were needed. In the interest of brevity, we describe this dilemma in relation to *interacting with students and adapting instruction*, *documenting and reporting learning*, and *supporting ongoing learning*, even though we saw examples for each dimension of the CA process (see Figure 1).

Interacting with students and adapting instruction is a challenging aspect of CA that requires teachers to have sufficient subject knowledge and pedagogical content knowledge (PCK), including a strong grasp of curriculum standards (Wolterinck et al., 2022). Dionne found that some teachers who were focused on "covering the curriculum" tended to move to the next learning objective regardless of how students were progressing rather than adapting instruction to student understanding. To support teachers with this aspect of CA, Dionne encouraged colleagues to mentor one another. Teachers worked together to revisit curriculum standards for the grade and subject they taught and for adjacent grades. They also shared subject-specific ways of gathering information in their interactions with students and ways of using that information to guide their next instructional moves. Dionne also encouraged teachers to look at the curriculum standards in an integrated way. In fact, they integrated the learning objectives for Grade 9 mathematics and science so they could be addressed by one teacher. They also integrated the learning objectives in Grade 9 English and social studies

so that they could be addressed by one teacher. This approach helped teachers focus on larger concepts rather than seeing the curriculum standards as a checklist of isolated knowledge and skills, an approach that can be problematic (Wolterinck et al., 2022). As the initiative continued, Dionne became increasingly aware of the need to offer opportunities for teachers to develop their PCK as part of advancing their CA practices.

With regard to *documenting and reporting learning* (see Figure 1), as the school moved away from using percentage grades on interim report cards, teachers needed to develop new approaches to providing feedback on student work and writing report card comments. Dionne supported educators to use digital technology to provide more timely feedback. She also spent time helping teachers write report card comments that provide meaningful information for students and parents. Teachers also needed to develop ways of determining percentage grades for end-of-course report cards by drawing on all the information they had gathered instead of tallying points from a few assessments. Dionne worked with the staff to develop an outcome-based scale to guide this process. Teachers also helped one another develop the confidence, tools, and strategies needed to make professional judgements about student achievement. In addition, teachers learnt to use portfolios as the school introduced mandatory student conferencing prior to assigning end-of-course grades. These topics were explored during their common planning time and in other meetings.

Dionne also helped teachers develop CA strategies and tools for *supporting ongoing learning* (see Figure 1). For example, the staff created posters describing four stages of learning, as shown in Figure 2, to help students reflect on their progress and foster self-regulated learning. In addition, the staff worked to develop strategies for allowing students to indicate when and how they would demonstrate mastery of learning objectives instead of requiring that all students demonstrate their learning at a time determined by the teacher. Strategies and tools for student conferencing also assisted teachers with using CA to support ongoing learning.
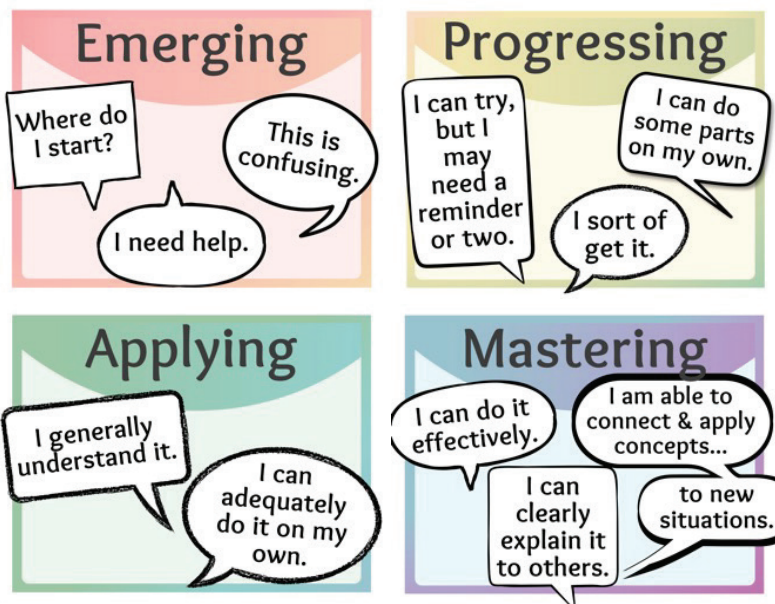
Figure 2 Examples of posters describing stages of learning

Overall, navigating this pedagogical dilemma throughout the CA process centred around ensuring that teachers do not feel that they must develop new strategies and tools by themselves. Teachers and other staff worked collaboratively with the support of Dionne and the school division to both acknowledge and reduce the impact of this dilemma.

A political dilemma: Fulfilling policies while reducing the emphasis on grading

In Canada, assessment policies for K-12 education are developed by each province and territory. Additional policies can be created by school divisions, provided they do not conflict with provincial policy. Manitoba's policy, which builds on an earlier guideline emphasising assessment *as* and *for* learning, states that the primary purpose of assessment is to improve learning (Manitoba Education, 2006, 2015, 2021). Nonetheless, most sections of the policy concern grading. This disconnect sets the stage for political dilemmas to emerge as educators strive to ensure their approach

to CA aligns with policy *and* with calls for increased formative assessment (Volante et al., 2024). At Glenlawn, this political dilemma emerged in relation to several dimensions of research-based CA. For instance, with respect to CA as a way of *supporting ongoing learning*, educators need to consider policies regarding the extent that students can contribute to determining their own grades as well as policies for late and missing assignments. Research suggests that progressive approaches to these aspects of CA can promote self-regulated learning and reduce the negative impact of CA on student mental health but policies may limit the approaches that educators can adopt. Political dilemmas related to *documenting and reporting* (see Figure 1) also emerged. One such dilemma came from the desire to reduce the emphasis on grading while fulfilling report card policies.

One way Dionne navigated these political dilemmas was by maintaining regular dialogue with divisional leaders, ensuring they were aware of the changes underway. In general, she found that the school division was supportive of her efforts to advance research-based CA. Dionne also carefully reviewed assessment policies as she considered ways to reduce the emphasis on grading. She noticed that the divisional policy used the word "must" in relation to providing percentage grades on end-of-course report cards but the word "may" with reference to percentage grades on interim report cards. Thus, although including percentage grades on interim reports was common practice in the school division, the move to comment-only interim reports complied with policy. Having determined this, Dionne ensured that students, staff, and parents were aware that the changes being made reflected both research and existing policy. Another action that helped mitigate this dilemma was that Dionne discussed strategies for reducing the emphasis on grades with other principals who were considering similar changes. Through these conversations, Dionne learnt about changes to CA they were making that aligned with policy. Dionne also presented aspects of her initiative at conferences for school leaders in Manitoba and other parts of Canada. Conversations at these conferences highlighted the need for policy change in some jurisdictions and prompted an exchange of ideas about how these changes might be achieved.

On a related note, in Manitoba, as in many jurisdictions, attention to CA increased during the COVID pandemic, particularly after the province suspended provincial assessments. Prior to the pandemic, secondary schools

in Manitoba administered mandatory Grade 12 provincial examinations in English and mathematics which contributed 30% to each student's course grade. With these examinations suspended, students' grades could only be based on the assessments that teachers had developed and other observations of student learning. This sequence of events led some educators, students, and parents to reconsider the limitations of provincial assessments. In addition, during the pandemic, several newspaper articles and television and radio interviews exploring grading practices appeared in Manitoba. This media coverage seemed to add momentum to the reconsideration of assessment policies. Notably, when provincial assessments were reinstated, their contribution to students' grades was reduced to 20%.

A cultural dilemma: Students and families concerned with changes to assessment

As we reflected on the changes in assessment practices at Glenlawn, we observed how shifting conceptual understandings, new pedagogical tools, and policy concerns combined to create an assessment culture in each classroom and in the school community. Events such as the COVID pandemic and ongoing media coverage influenced this culture. For instance, a headline in a local newspaper characterised the approaches at Glenlawn as "avant-garde assessment" (Macintosh, 2023). Both the act of labelling these practices as avant-garde (i.e., novel, unusual, or experimental) and the generally positive view conveyed in the newspaper article, contributed to the evolution of the assessment culture at Glenlawn. Within this context, one overarching cultural dilemma (see Table 1) we identified was that many students and families expressed reservations about some proposed changes to CA and a few were initially quite resistant to these changes. For example, Dionne found that some students and families viewed flexible deadlines for assignments and giving students second chances to demonstrate learning (e.g., allowing reassessment or resubmission of assignments) as unfair. These practices—that are important aspects of *recognising and valuing learning* and using CA to *support ongoing learning* (see Figure 1)—were not well understood or appreciated by students and parents. Dionne also found that most students and families were very concerned with grades and were worried about any changes in *documenting and reporting learning*.

Dionne took many steps to shift the assessment culture and reduce the impact of this dilemma. She engaged in many forms of outreach to students and families in ways that would build stronger relationships and establish greater trust. She held family information nights early in the term where parents could learn about how assessment would be done, and she could listen and respond to their questions and concerns. She emphasised that CA is more than grading and that it can be a continuum of activities to better support learning for every student. Dionne invited families to let go of the familiar "What grade did you get?" approach to discussing learning with their child and suggested other ways they might talk about their child's progress. Later, prior to interim report cards being distributed, information was sent to parents explaining how to interpret the report cards. Another strategy that helped to mitigate the impact of this dilemma was to wait a few years before introducing some new strategies in Grades 11 and 12. For instance, Dionne used this approach to transition to no longer including percentages on interim report cards. Only after the community was accustomed to this approach for Grades 9 and 10 was it extended to Grades 11 and 12. In this way, Dionne showed that she recognised the concerns of students and families, particularly since Grade 12 grades are often used for post-secondary admission and scholarships. In her interactions with families and students, Dionne also emphasised that the school's approach to CA was intended to help support student mental health.

Other strategies that helped to mitigate the cultural dilemmas at Glenlawn included: expanding the criteria for annual awards beyond grades to acknowledge other ways students contribute to the school community; discussing assessment strategies with other schools in the division; and doing media interviews so that the approach to CA at Glenlawn became more widely known. In addition, educators from other schools often visited Glenlawn to learn about the CA practices being used and share some of their practices. These visits provided another opportunity for educators at Glenlawn to reconsider their assessment culture.

Insights for others engaged in changing assessment practices

Educators are likely to encounter dilemmas as they change their assessment practices (Caspari-Gnann & Sevian, 2022; Suurtamm & Koch, 2014). We found that analysing the initiative at Glenlawn in relation to four kinds

of dilemmas revealed many insights. Without a doubt, the dilemmas that emerged were most evident in *documenting and reporting*, but each dilemma also unfolded in relation to other dimensions of the CA process that are shown in Figure 1. Thus, considering each dimension of CA when anticipating dilemmas and identifying strategies to navigate them is a good idea. In this section, we identify some other insights that may help teachers, school and district leaders, and teacher educators as they work to advance research-based CA in their setting.

The experiences at Glenlawn reiterate the need to plan for changes to CA to occur over several years and to support teachers with developing tools and strategies rather than expecting them to figure out new approaches on their own. These recommendations have been made in many other studies on changing CA practice and so we will not elaborate further on them here. Less frequently noted, the experiences at Glenlawn underscore the importance of creating a learning environment where research-based CA can unfold more easily. Discussing their teaching philosophy and values and examining and making changes to the learning environment prior to and while changing CA practices, can reduce the impact of conceptual and pedagogical dilemmas. We are not suggesting that the philosophical perspectives, pedagogical approaches, or specific changes to CA at Glenlawn be adopted elsewhere, but rather that the process of enacting research-based CA may unfold more easily if the learning environment aligns with the approaches to assessment that are being introduced. Boström and Palm (2019) made similar observations in their study with 7th year teachers in Sweden.

As noted by other researchers, we also found a close relationship between research-based CA practices and PCK (Caspari-Gnann & Sevian, 2022; Schildkamp et al., 2020; Wolterinck et al., 2022). Given the inter-related nature of these concepts, planning opportunities to develop PCK while developing research-based CA and vice versa may better support in-service and pre-service teachers. In addition, closely examining assessment policies and consulting with like-minded educators to identify ways to enact research-based approaches within existing policy limitations can reduce the impact of political dilemmas. We have also observed that educators sometimes make inaccurate assumptions about policy based on existing practices or interpret policies overly narrowly. Discussing these interpretations with students, parents, teachers, and school or district leaders can

help with navigating political dilemmas. Where policy precludes fully implementing research-based practices, principals and district leaders may need to advocate for policy change.

Cultural dilemmas, particularly those involving the relationship between formative and summative practices, seem to be particularly resistant to change (Volante et al., 2024). We found that changes to CA threatened some teachers' professional identity, especially when those changes included giving students greater responsibility for assessment. Encouraging teachers to see themselves as learners and normalising the idea that learning about CA is an ongoing process for everyone may reduce this feeling of threat. In addition, working to establish relationships based on transparency and trust among teachers, students, families, and school leaders is essential for creating an assessment culture that better supports all learners. Moreover, anticipating that students and families are likely to be wary of change, particularly where grading is involved, and planning ways to include them throughout the process, can reduce the impact of the cultural dilemmas that are likely to emerge. Responding to the concerns of students and families and inviting their participation are valuable elements of assessment change. Along similar lines, anticipating that media coverage, especially when results from large-scale assessments are released, may increase resistance to research-based CA practices can help with responding to cultural dilemmas. As Dionne found, starting to make change at the lower secondary grade levels, where course grades have less impact on post-secondary admissions, and building from there can also help with shifting the assessment culture.

Teachers, department heads, and school leaders may find it helpful to explore the dilemmas framework together, anticipate dilemmas that are likely to unfold, and discuss ways they might be mitigated. District assessment leaders might also explore the dilemmas framework with school leaders and invite them to anticipate dilemmas that are likely to unfold and ways to navigate those dilemmas. Martha has shared the dilemmas framework with many teachers and school and district leaders working to advance research-based CA in their settings. Many indicate that they find that the framework provides a helpful structure for their work, especially since they often find they need to begin initiatives to improve CA with little lead time. They describe how they often have to "build the plane as they

fly it" when improving CA practices and that the dilemmas framework is an effective way to structure their work.

Professors in pre-service teacher education programmes might also explore the dilemmas framework with pre-service teachers so that they join school communities already having some conceptual understanding and pedagogical strategies and tools aligned with current research. This will also help to ensure that new teachers are more prepared for the kinds of change that may unfold in their future schools. An in-depth exploration of local assessment policies and a critical examination of their relationship to current research would also be beneficial for pre-service teachers.

Related future research

Our analysis drew primarily on Dionne's experiences as a school leader navigating the dilemmas that unfolded as she was advancing research-based CA. Research that gathers the perspectives of teachers and other staff in relation to the dilemmas that emerge would provide additional valuable insights. In addition, research focused explicitly on the dilemmas that students and families experience as changes are made to CA could reveal other ways that dilemmas could be mitigated. Studies of the dilemmas that unfold in K-8 schools as changes to CA practices are being implemented may reveal a different range of overarching dilemmas as compared with this secondary school context. This might also be the case in settings where there is more high-stakes assessment than at Glenlawn. Research into dilemmas that emerge when adopting research-based CA in jurisdictions where curriculum standards are expressed as general competencies rather than specific objectives might also reveal interesting insights. Each of these areas of research may also reveal ways of refining the dilemmas framework shown in Table 1 as a proactive way of advancing research-based CA in their context.

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