



RESEARCH SERIES

**REPORT NUMBER THREE:
TRENDS IN INTELLECTUAL ENGAGEMENT
SEPTEMBER 2012**

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What did you do in school today? Research Series

**REPORT NUMBER THREE: TRENDS IN INTELLECTUAL
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Qu'as-tu fait à l'école aujourd'hui?
Tendances en matière d'engagement intellectuel

SERIES INTRODUCTION

What did you do in school today? is a national initiative of the Canadian Education Association (CEA) designed to capture, assess and inspire new ideas for enhancing the learning experiences of adolescents in classrooms and schools. ***What did you do in school today?*** is one of the few initiatives in Canada that focus specifically on the experiences of adolescent students. And it is the only initiative that focuses on the powerful concept of *intellectual engagement*.

What did you do in school today? has advanced a core set of ideas about adolescent learning and educational change (e.g., students as agents of change) and has popularized a multidimensional framework of student engagement that recognizes the importance of young people's engagement in school (social and institutional engagement) and learning (intellectual engagement). It has also drawn attention to important relationships between engagement and key developmental outcomes for adolescent learners, and to increased student engagement as a pivotal idea for improving the quality of teaching and learning in Canadian schools.

Since ***What did you do in school today?*** was launched in 2007, more than 63,000 students have shared their experiences of learning and engagement with CEA through an online survey. This significant database forms a foundation of our national research strategy, which examines the policy and practice implications of many types of evidence, both qualitative and quantitative. First-year findings from the initiative were shared in a *First National Report* (Willms, Friesen, & Milton, 2009).

The purpose of the reports in this research series is to present new evidence and to share the knowledge we have gained about student engagement since 2007. Each report also explores trends or relationships in the data, especially as they relate to students' engagement in their learning. For the research questions that frame each report, we thank the educators who have shared their questions with us and helped us to understand what has inspired and challenged them in the course of working with core ideas of ***What did you do in school today?*** in their schools.

FOCUS OF THIS REPORT

We are pleased to introduce Report Number Three, where we revisit research questions and findings about intellectual engagement from our *First National Report* (Willms, Friesen, & Milton, 2009). We use three years of data from 83 schools participating in ***What did you do in school today?*** to see if levels of intellectual engagement have changed, for better or worse, and to see if classroom practices have continued to affect these levels. In the context of educational change, three years is a short period to see measurable school-level change. Our three-year findings are encouraging: the efforts of principals, teachers and students at schools participating in ***What did you do in school today?*** are leading to increases in intellectual engagement, especially in middle schools. The strength of these positive trends varies quite dramatically among schools, providing us with a unique opportunity to understand district, school and classroom structures and practices that may be enabling or making it difficult for schools to create intellectually engaging learning environments.

INTRODUCTION

EXPLORING THE CONCEPT OF STUDENT ENGAGEMENT

Until recently, student engagement was seen as an issue for a small minority of students who were at risk of dropping out of secondary school. As a result, interventions focused on increasing students' positive social connections with school (i.e., *social* engagement) and helping them to meet the requirements for successful school completion (i.e., *institutional* engagement). Recent advances in the learning sciences and our understanding of human development have expanded “the underlying *purposes* or *goals* of increasing student engagement” (Parsons & Taylor, 2011, p. 8) to also focus on engagement in *learning* (i.e., *intellectual* engagement). This multidimensional view (see Figure 1) creates a new balance in our orientation towards engagement, helping us to see that many of the challenges students face, especially as adolescent learners, are connected in significant ways to the policies and practices of schools and classrooms.

Figure 1. Three Dimensions of Student Engagement

Social Engagement	Meaningful participation in the life of the school
Institutional Engagement	Active participation in the requirements for school success
Intellectual Engagement	A serious emotional and cognitive investment in learning

All types of engagement – social, institutional and intellectual – contribute to valued developmental outcomes for adolescent learners. However, when students have opportunities to describe their experiences of engagement,¹ we see that the percentage of students who are intellectually engaged is significantly lower than the percentage of students who are socially and institutionally engaged (Dunleavy & Willms, 2011; Willms et al., 2009). In other words, many students who are behaving in ways traditionally associated with high engagement at school (e.g., attending classes, participating in teams) are actually experiencing low levels of engagement in learning.

INTELLECTUALLY ENGAGED LEARNING

Coming to know something deeply requires an energizing interest and focus that results in intellectual engagement – a *serious emotional and cognitive investment in learning*. When students are intellectually engaged, they are so absorbed in their work that they often lose track of time. They are interested, curious, personally invested in the quality of their work, and connected with others in setting and achieving learning goals – and they carry the ideas they are learning about into their lives outside of school.

Adolescent learners experience high levels of intellectual engagement when they encounter school work that is challenging, has practical and intellectual value, and engages them in authentic tasks similar to those that mathematicians, artists, or other professionals would pursue. School work of this nature is “worthwhile of students' time and attention” and can bring about deep personal commitment and enthusiasm on the part of both teachers and students to investigate ideas, problems or questions for sustained periods (Friesen, 2009, p. 5).

¹ Most schools participating in *What did you do in school today?* collect data about students' engagement and school and classroom practices through the Learning Bar's *Tell Them From Me* survey. For information about the survey, go to <http://www.thelearningbar.com/>

Because it captures the kinds of learning we aspire to for all students, the concept of intellectual engagement often resonates strongly with educators and students. The benefits of intellectual engagement are many. Being intellectually engaged means to be learning to use one's mind well. In this sense, intellectual engagement is inherently a growth-producing activity (Vandeel, Shernoff, Pierce, Bolt, Dadisman, & Brown, 2005) that supports adolescents in developing important competencies for learning and living. These competencies include, for example, an orientation to original work, critical thinking, collaboration, active citizenry, risk-taking, experimentation, independent action, and confidence as innovators and knowledge-builders.

The risks of disengagement from learning are also many. For some students, disengagement is captured in moments of detaching from the learning environment: "It's like you block everything around you and you can't hear anything. It's just when things get boring and you start to zone out" (Canadian Education Association, 2012, May). Other students are tuned in to their school work through high levels of institutional engagement, but are less likely to be intellectually engaged and to be "thinking deeply about the content of their courses" (Pope, 2001, p. 4). Still others are disengaged from most or all of their classes. This group of students may continue to experience the social value of school (e.g., friends, clubs or teams) but feel uninterested and often discouraged in classes because the work is either too easy or too hard.

IS INTELLECTUAL ENGAGEMENT INCREASING IN *WHAT DID YOU DO IN SCHOOL TODAY?* SCHOOLS?

When schools participating in *What did you do in school today?* began receiving data about student engagement, educators were particularly struck by the low levels of intellectual engagement experienced by middle and secondary school students. These educators quickly understood the consequences of these results for learning and also began exploring their implications for teaching. Since then, many schools have designed and implemented new classroom practices to increase intellectual engagement, while watching closely to see if their efforts – sometimes in collaboration with students – are creating the conditions for deeper engagement in learning.

It is not possible to directly evaluate the impact of these new practices on levels of intellectual engagement in particular schools, but we can look at overall results among schools participating in the initiative. Using the national-level data created from a group of 83 schools that participated in *What did you do in school today?* for three consecutive school years, we explore two important questions in this report:

- What trends do we see in levels of *intellectual* engagement among Canadian middle and secondary schools during the first three years of the *What did you do in school today?* initiative?
- Did schools continue to make a difference to levels of intellectual engagement, as they had during the first year of the initiative (Willms et al., 2009)?

In the context of educational change, three years is a short time to test the impact of a new set of ideas on teaching and learning. This time frame is particularly short for the concept of intellectual engagement, because the concept may be unfamiliar to many and because it encapsulates learning experiences and outcomes for students that schools were not designed to achieve, or at least not for all students. Given the challenge of translating this new idea into practice in 83 schools with widely differing contexts, the results presented in the following sections are impressive. The efforts of local leaders, teachers and students at schools participating in *What did you do in school today?* are leading to increases in intellectual engagement, especially in middle schools.

DATA AND METHODOLOGY

The findings in this report are based on three consecutive years of data collected from Grade 6–12 students who were attending 83 schools that joined *What did you do in school today?* in its first year (2007–08) and were still participating at the end of the initiative's third year (2009–10).² Figure 2 shows the number of school districts and students that were part of the survey sample each year. During each of these years, approximately 30,000 students completed the Learning Bar's *Tell Them From Me* student survey (replaced in 2009 by the *Tell Them From Me 2.0* student survey). Drawing from this large set of national data, which includes measures of social, institutional, and intellectual engagement, our research for this report first focused on identifying three-year trends for *intellectual* engagement.

Figure 2. Survey Samples for 2007–08 to 2009–10

School Year	Number of Districts	Number of Students
2007–2008	10	32,322
2008–2009	10	33,111
2009–2010	10	29,018

With the release of *Tell Them From Me 2.0* in 2009, the Learning Bar introduced a new set of measures for intellectual engagement. *What did you do in school today?* schools began using the new measures in 2009, but also continued to use and receive data from the original CEA composite of intellectual engagement that was introduced in 2007. This 2007 composite consisted of 10 statements (to which students responded with degrees of agreement/disagreement) pertaining to students' enjoyment of, interest in, and motivation to do well in their Language Arts and Math classes and the extent to which they saw these classes as relevant to their everyday lives (Willms et al., 2009, p. 11). To make valid comparisons and identify trends in levels of intellectual engagement over the first three years of the *What did you do in school today?* initiative, **we have based findings presented here only on the responses to this original 2007 composite of intellectual engagement.**

The first and revised versions of the *Tell Them From Me* student survey were designed to consider all three types of student engagement as an outcome of what happens for students *at home and at school*. In this report, we focus on *school-level factors only*, and report on the relationship between intellectual engagement and four measures of classroom and school effects, defined in Figure 3 and explained in more detail in the initiative's *First National Report* (Willms et al., 2009, pp. 10–13).

Figure 3. Four Measures of School and Classroom Learning Climate

Effective Learning Time	Six statements that measure three aspects of teaching: the extent to which important concepts are taught and understood; the efficiency with which class time is used; and the degree to which course objectives are aligned with homework assignments and evaluation procedures.
Teacher/Student Relations	Six statements that assess students' perceptions about how their teachers treat them, and whether they feel supported by them.
Classroom Disciplinary Climate	Six statements that assess the extent to which students internalize the norms and values of the classroom and conform to them.
Expectations for Success	Six statements that assess the extent to which school staff value academic achievement and hold high expectations for all students.

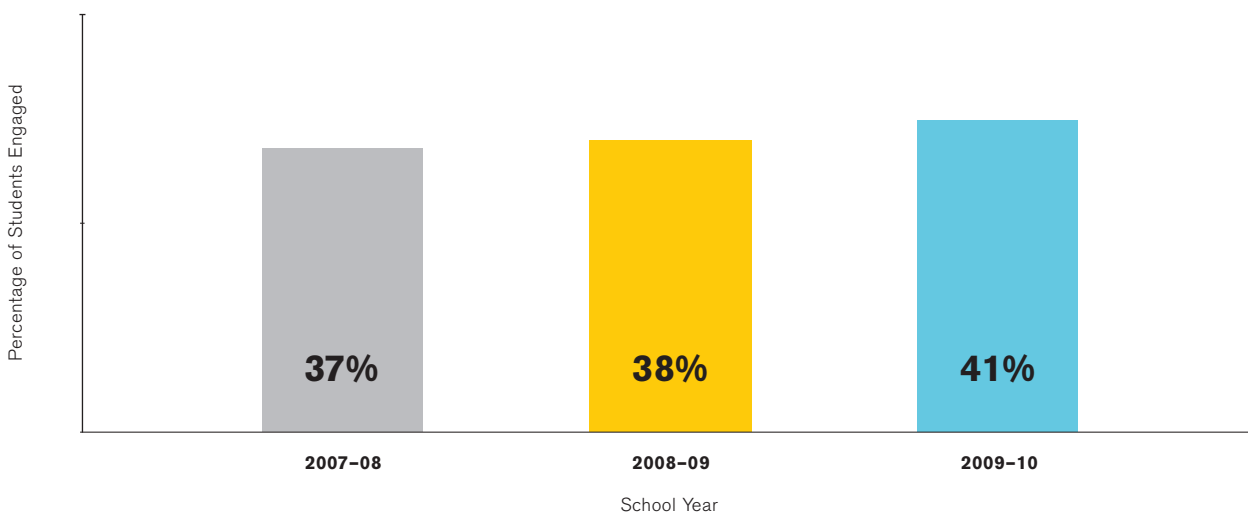
² A total of 93 schools began participating in *What did you do in school today?* in 2007 and were still participating in the 2009–10 school year. The *First National Report* (Willms et al., 2009) was based on all 93 schools. However, because this research report focuses on results from Grades 6–12, we excluded 10 schools from our analyses because they only included Grades 4 and 5 (3 schools) or they were middle–secondary schools ranging from Grade 4 to Grade 10 (7 schools).

OBSERVATIONS

MORE STUDENTS WERE INTELLECTUALLY ENGAGED IN 2009–10 THAN IN 2007–08

First-year (2007–08) results from *What did you do in school today?* revealed that, on average, 37% of students were intellectually engaged in their Math and Language Arts classes. By the 2009–10 school year, levels of intellectual engagement in the same group of schools rose to 41%, a statistically significant increase.³ As illustrated in Figure 4, most of the change happened in the third year (2009–10).

Figure 4. Percentage of Students Who Are Intellectually Engaged



SCHOOLS VARIED SIGNIFICANTLY IN ANNUAL INCREASES IN INTELLECTUAL ENGAGEMENT

First-year findings, based on student responses from the 93 schools that began participating in *What did you do in school today?* in 2007–08 – our baseline year – demonstrated that levels of engagement varied substantially among schools (Willms et al., 2009, p. 22). This variation is also evident in third-year findings. Between years two and three, the average levels of intellectual engagement in all 83 schools included in our analyses for this report rose from 38% to 41%. Changes varied between schools, however, with some schools actually declining and some showing notable increases. For example, from 2007–08 to 2009–10:

- 17 schools saw levels of intellectual engagement fall by 1 to 4 percentage points.
- 39 schools saw levels of intellectual engagement rise by 1 to 5 percentage points.
- 27 schools saw levels of intellectual engagement rise by more than 5 percentage points, with increases as high as 12 percentage points.

GAINS IN LEVELS OF INTELLECTUAL ENGAGEMENT WERE LARGER FOR MIDDLE SCHOOLS

Our analyses also revealed that annual gains in students' experiences of intellectual engagement were larger in middle schools than in secondary schools.⁴ Annual gains were small overall, but on average, middle schools achieved gains significantly larger than those achieved in secondary schools.

³ When an increase or decrease is referred to as "statistically significant," it means that the change (up or down) is the result of something happening in schools, classrooms, and/or school communities and is not just the result of chance.

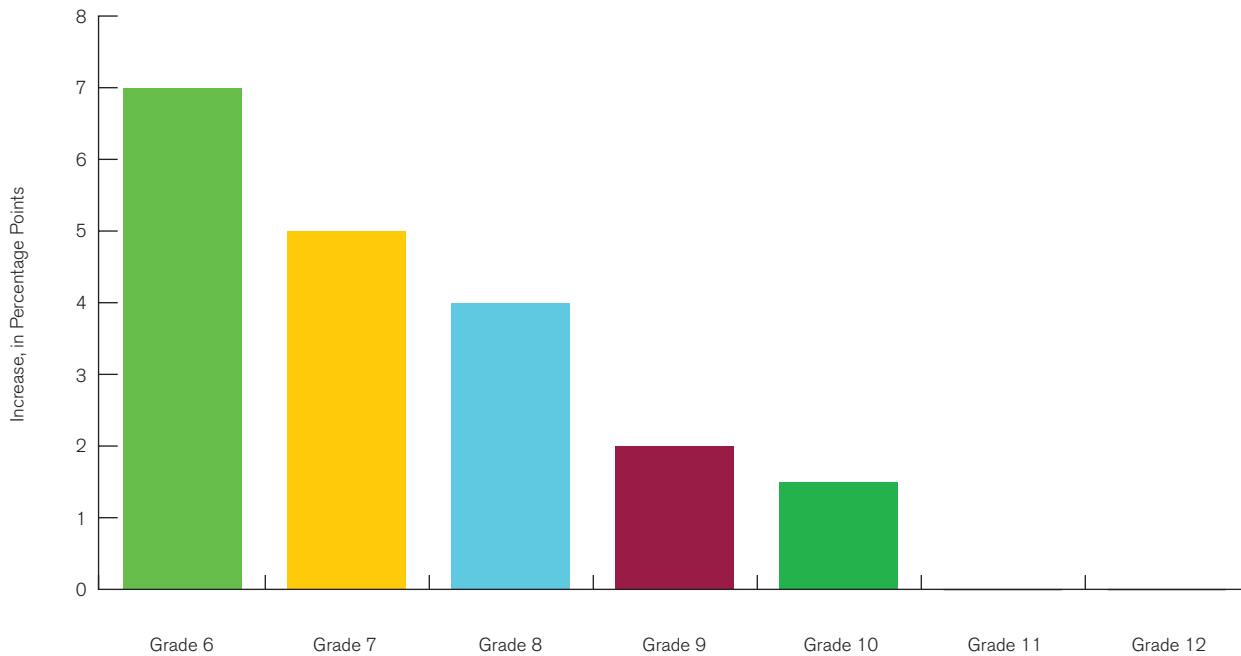
⁴ Because school configurations vary among provinces, and even among schools within districts, it is often difficult to classify schools definitively as elementary, middle or secondary. The approach used to classify schools in this report follows a system developed by the Learning Bar. In that system:

- The lowest grade at a **middle school** is 5, 6 or 7, and the highest grade is 7, 8 or 9.
- The lowest grade at a **secondary school** is 8 or higher and the highest grade is 10 or higher.

As noted earlier, 7 of the original 93 schools included in our first-year findings were excluded from the findings in this report because they are middle-secondary schools, ranging from Grades 4 to 10. Three other schools were excluded because they include only Grades 4 and 5.

Figure 5 illustrates the differences between middle and secondary schools, showing that the largest average annual increases in intellectual engagement (between 4 and 7 percentage points) were among students in Grades 6, 7 and 8. Beginning in Grade 9, these gains became much smaller, and in Grade 11 no increases in intellectual engagement were detected. From the larger national *What did you do in school today?* sample, which also includes schools that began participating in years two or three of the initiative, we know that levels of intellectual engagement fall quite dramatically from Grade 7 to Grade 9 and then level off. This means that levels of intellectual engagement tend to be lower in Grades 10–12. And while the school and classroom practices do make a difference, improving low levels of intellectual engagement over time is proving to be a more challenging process in secondary schools, possibly because of increasing subject specialization, fixed course timetables, and the challenges of generating school-wide change in larger schools.

Figure 5. Average Annual Increase in the Percentage of Intellectually Engaged Students, by Grade



CLASSROOM PRACTICES MADE A DIFFERENCE

National trends

Increases in levels of engagement varied among schools. However, after controlling for the effects of students’ socio-economic status, we found that annual gains in levels of intellectual engagement remained relatively consistent for middle and secondary schools. Therefore, factors within the school (e.g., classroom practices) had a greater impact on increases in the number of students reporting intellectual engagement than did factors outside of the school (e.g., family socio-economic status).

This finding is consistent with first-year results presented in the *First National Report*, which demonstrated a strong relationship between intellectual engagement and each of our study’s four measures of school and classroom climate (Willms et al., 2009, p. 25). With the exception of **effective learning time**, we see similar relationships in years two and three: **teacher/student relations**, **classroom disciplinary climate**, and **expectations for success** were all correlated with annual gains in intellectual engagement. However, the strength of the relationship between each measure and levels of intellectual engagement varied:

Four Measures of School and Classroom Climate
1. Effective learning time
2. Teacher/student relations
3. Classroom disciplinary climate
4. Expectations for success

- High **expectations for success** and positive **teacher/student relations** had *strong* relationships to gains in levels of intellectual engagement.
- **Classroom disciplinary climate** had a still-significant but *weaker* relationship to gains.

When compared with these other aspects of school and classroom climate, **effective learning time** had no significant relationship to annual gains in levels of intellectual engagement.

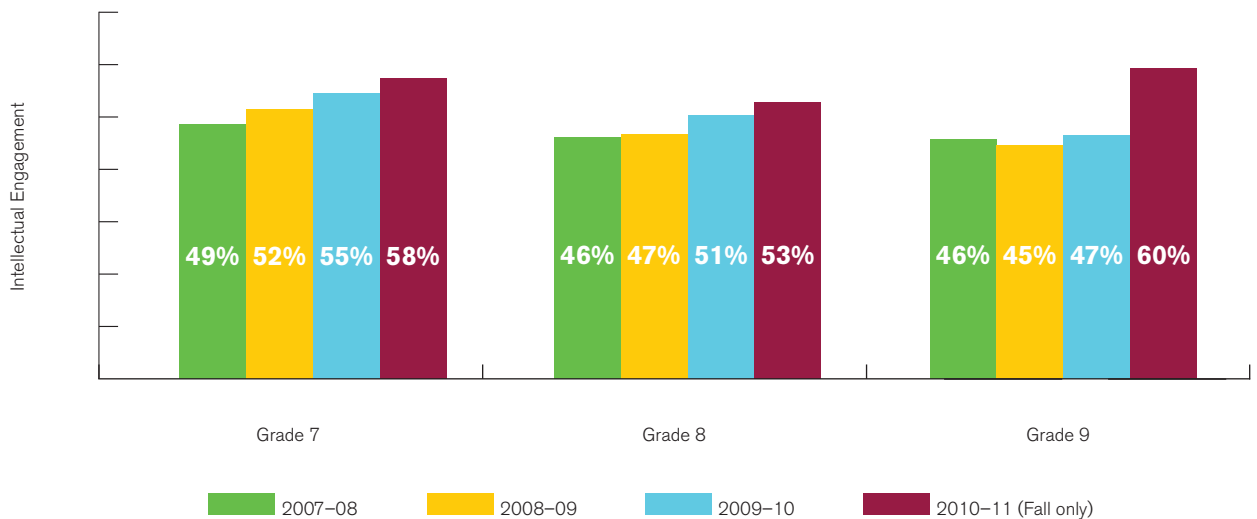
One school's journey to increased levels of intellectual engagement

Qualitative findings gathered during a year-long case study at CEA's first innovation site⁵ complement the survey findings presented in this report and deepen our understanding of the potential for school and classroom practices to positively impact student engagement in learning. The school, a small junior high school in Dartmouth, Nova Scotia, offers Grades 7–9 to a relatively low socio-economic group of approximately 270 students. It follows the provincial curriculum and is required to follow a regional school-improvement framework.

Beginning in the 2007–08 school year, the school established learning goals and developed innovations aimed at increasing students' experiences of intellectual engagement in learning. The change process at the school was led by the principal, whose desire to improve patterns of engagement and achievement at the school led her to become an enthusiastic early adopter of *What did you do in school today?* She quickly recognized that teaching for intellectual engagement required practices and ways of thinking that were new to most teachers at the school, and that it would take time to replace old norms with new approaches to teaching for engaged learning.

By all measures available, the school has demonstrated consistent, positive change. Gains among Grade 7 and 8 students at the school are similar to national averages and show a slow but steady increase over four years. However, Grade 9 students' intellectual engagement remained stable around 45–47% until year four, when levels of intellectual engagement rose to 60%, an increase of 13 percentage points (see Figure 6).

Figure 6. Levels of Intellectual Engagement by Grade and School Year



⁵ To view two videos that profile the school's approach to change and its accomplishments, go to <http://www.cea-ace.ca/video>

During the same period, the number of students who found their work intellectually challenging (“**flow**”) rose from 38% to 54%, attendance rates rose, office referrals and suspensions declined significantly, and teachers and students noticed major differences in teacher/student and peer relationships both inside and outside of classrooms.

Professional conversations at the school were consistently focused on the concept of intellectual engagement and its implications for teaching and learning. Teachers were fully engaged in direction-setting and problem-solving around the school's goal of deepening all students' engagement in learning. They were also encouraged and supported in taking risks and had many opportunities to learn by experimenting with and assessing new practices in the classroom. The teachers collaborated with each other in learning and in the practice of teaching. Many also demonstrated a genuine commitment to collaboration with students. In turn, students felt that they had a real say in school policies that affected them and, most important, felt that their relationships with teachers had allowed them to become advocates for their own learning interests and needs in most of their classes.

Overall, teachers' reactions to the new practices have been very positive. A small number of teachers at the school were unwilling or unable to let go of familiar structures and practices. But most teachers felt energized by the process, especially after the school launched a culminating inquiry into the social, cultural and physical power of food during the last two weeks of the 2010–11 school year. Some teachers reported that the experience had really changed their way of thinking about teaching. Many others appreciated how it allowed them to see their colleagues in a new light as they planned and taught together in teams. And many reported that it enabled them to understand students differently, especially those who tended to struggle with traditional learning tasks but who shone during the inquiry.

As we listened to teachers describe their experiences, the turning points emerged when they began to experience teaching and learning as reciprocal and not linear (“I teach, you learn”) processes. As one teacher at the school said, “Before [it was] about the teacher, and now it's more student centred ... So that's the biggest aspect – the students have that voice and the teachers help them get there ... It has to be teachers that are willing to connect with the students on that level.” It was at these moments that students started to see relationships shift in their classrooms.

Over the course of four years, the school has had to negotiate many constraints related to district policies and practices. An understanding of these constraints (e.g., how a district-wide policy might hinder local innovations) has helped us to understand how school districts can better support innovations in schools. It is too early to know whether the school, individual teachers or teams of teachers will continue to pursue their goals for increasing levels of intellectual engagement. What we *do* know is that achieving this level of change over the short course of four years called upon teachers at the school to imagine that teaching and learning could be different. It then called upon them to sort out *how* to transform classrooms through their own professional practice.

DISCUSSION

These qualitative and quantitative findings confirm that schools can make a significant difference to students' engagement in learning. In a relatively short time, levels of intellectual engagement at 83 middle and secondary schools rose from an average of 37% to 41%. However, we found that levels of intellectual engagement and increases over time varied quite significantly among schools, which is similar to the first-year findings from *What did you do in school today?* Also, over the course of three years, secondary school students remained less engaged in their learning than middle school students, and increases were much slower to emerge after students completed Grade 9.

Nevertheless, our findings should be encouraging to the 83 schools that make up our sample. At the national level, our results lend new support to our early beliefs about the value of intellectual engagement as a central idea for improving the quality of teaching and learning in Canadian schools.

These results lead us to the important question of how to continue with and accelerate increases in levels of intellectual engagement across grades and subject areas in schools throughout the *What did you do in school today?* network.

Flow

Csikszentmihalyi (1997) described *flow* as deep absorption in an activity that is intrinsically interesting. Individuals in a state of flow see the activity as worthwhile even if no further goal is reached.

Making schools intellectually engaging places for all students requires educators in schools *and* districts to reconsider traditional ideas about the purpose of learning and how learning happens. Can the competencies students need in order to be successful in learning and in life (problem solving, critical thinking, collaboration, innovation, etc.) be developed through traditional approaches to instruction and assessment? What implications does the concept of intellectual engagement have for conventional thinking about teacher/student relationships? Do the long-standing structures of many schools (e.g., set timetables, or grades organized by age) continue to make sense in light of the kinds of learning we now aspire to for young people?

Our knowledge about how educators can increase intellectual engagement is still emerging. In the course of working with data and the core ideas of ***What did you do in school today?***, districts and schools are discovering the importance of professional learning. In our work with one junior high school (profiled earlier in this report in ***One school's journey to increased levels of intellectual engagement***) and a small number of other schools, we have also come to appreciate that significant changes in learning and teaching need to be worked out in practice, primarily through teachers' thinking and experimenting alone and with colleagues, and also with generous input from students.

More students are experiencing intellectual engagement now than they were when ***What did you do in school today?*** first began in 2007. CEA's role in helping this trend to continue is to share knowledge about district, school and classroom conditions that lead to higher levels of student engagement in learning. It is equally important that we share our insights about policies and practices that might be *preventing* the achievement of new goals for teaching and learning. Within the ***What did you do in school today?*** network, we have an opportunity to tap into the experiences of educators and students in secondary schools to understand why the goal of increased student engagement is so challenging to achieve in Grades 10, 11 and 12.

We know that schools make a difference in students' experiences of engagement and success in school. How each school achieves a positive impact for all students will depend on local context. Often, however, schools are more similar in their practices and structures than they are different. Traditionally, schools have set and pursued goals for improvement without taking into account that conventional ways of doing things in school can pull even the most innovative ideas back into familiar patterns. To continue seeing positive trends in intellectual engagement, we need to share knowledge about what has and has not worked. More powerfully, we need to make organizational structures, processes and practices more transparent so that they can be analyzed and adjusted in response to their impacts on teaching and learning.

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