



Research Report

EASTERN COMMERCE COLLEGIATE INSTITUTE'S LATE START: *Year One Interim Report*

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[Eastern Commerce Collegiate Institute's Late Start: Year One Interim Report](#)
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EXECUTIVE SUMMARY

Background

Eastern Commerce Collegiate Institute (ECCI or Eastern Commerce) implemented a school-day schedule change, to a later start time than the previous 9:00 am, in September 2009. Their school day now begins at 10:00 am and finishes at 4:15 pm on Tuesdays, Wednesdays, and Thursdays, 3:00 pm Mondays and 2:30 pm Fridays. The schedule change was implemented, based on previous research, indicating that a later start time may help support student learning.

There are two main theories about why a later school start time might improve the education, health, or well-being of high school students. The first is that by having a later start time, students may get more sleep, and that this will lead to subsequent improvements in education and health indicators. The second is that later school start times better align school instructional time with peak times in the day for adolescent alertness and learning potential.

The purpose of the evaluation is to assess the impact of the later start on Eastern Commerce's students and teachers using a matched-control pre and post evaluation design. The overarching question is: "What are the impacts of the new school start time at Eastern Commerce Collegiate Institute for students, teachers, and their families and community?" The evaluation has been undertaken between September 2009 and August 2011 and includes qualitative and quantitative data before and after the initiation of the change in start time. The study also includes an anonymous, matched control or comparison school as a comparator over this period.

Quantitative Highlights

Overall, the change in schedule did take some preparation and a period of early adjustment, but it is now perceived as generally positive by students and staff. Positive results are shown across academic indicators, staff and student perceptions, absenteeism rates, as well as overall average sleep times.

Eastern Commerce showed a 4-9% improvement in academic credit accumulation for students in Grades 9 and 10 following the later start. This improvement was greater than rates of improvement in the Toronto District School Board (TDSB) overall. In Grades 9 and 10 English and Science, Eastern Commerce showed the highest percentage improvement compared to the control school and the TDSB as a whole. In Grades 11 and 12, Eastern Commerce showed the

highest percentage improvement in English and Mathematics compared to the control school and the TDSB as a whole. Although these overall achievement trends are encouraging, the results are by no means definitive. In terms of overall marks, there were more increases than decreases. To balance this, there was a slight decline in Grade 11 and 12 Science marks, and no improvement according to the provincial Education Quality and Accountability Office (EQAO) Grade 9 and 10 assessment results. Thus, achievement patterns at Eastern Commerce can be seen in a positive, but a very cautiously positive, light. Following student achievement trends will be crucial in further monitoring the later start at Eastern Commerce.

Other positive findings:

- Seventy percent (70%) of ECCL respondents report that it is “easier to come to school” after the schedule change, this is a much higher positive response compared to School ABC;
- ECCL students had higher participation rates in sports, volunteer activities, and leadership programs than School ABC;
- ECCL students were absent less often (among 14, 16, and 17 year olds) following the schedule change, where there were marginal absenteeism increases across all age groups across the TDSB;
- ECCL students got on average 30 minutes more sleep per night than students in School ABC; and
- ECCL reported 2.5 times the number of students getting more than 9 hours of sleep per night than in School ABC.

Qualitative Highlights

The qualitative findings provide in-depth attitudinal information of staff, students, and the broader community at Eastern Commerce. Overall, the schedule change has been well received by school staff, students, and the broader community.

School Staff

Teachers report that, especially in the morning, students are much more alert and able to participate in class. Although some teachers still note a 4th period afternoon sleepiness among students.

The schedule change did pose some challenges for school staff. The custodial staff is required to stay later than previously to be able to clean after the later lunch period. Some teachers report staying at school until 7pm in the evening and others say they still come relatively early in

the morning to prepare. A number of teachers expressed regret that they could not be more involved in after-school activities as the later schedule prevented it. The schedule change has been preferred by some staff because they are able to get their own children to school in the morning, but others find it difficult to participate in family meals and activities in the early evening because they arrive home later. However, in general, staff members are supportive and have made the required adjustments.

Students

Overall, the students like the new schedule. They do not feel that the later start is a hindrance to employment activities. Fewer students are staying after school for activities than in the past, but this has been adjusted for in most cases as sport practices or other activities are occurring before school or at lunch. Those students who do participate in sports tend to miss more school than in the past because they miss the late afternoon classes if they travel to another school (with a more traditional schedule) to play games.

Broader Community

Impacts on the broader school community have been largely positive with Eastern Commerce staff and students now accessing shops and other services, including the TTC, during off-peak hours.

Research Moving Forward

As the school has done thus far, it is a priority to monitor and mitigate any challenges or issues that arise related to the later start time. This is the first report from the evaluation, and efforts to evaluate the longer term impacts of the late start are on-going. Future research will include follow-up interviews and focus groups in June 2011 with Eastern Commerce staff and students as well as additional analysis of student achievement information over time. All Eastern Commerce students will be completing a school perception survey in Spring 2011. This data will be reviewed and compared to further monitor the potential impacts of the later school start time. Eastern Commerce's registration data will also be monitored to understand whether the change in schedule has had any lasting impacts on student population numbers.

SUMMARY OF THE BACKGROUND LITERATURE REVIEW

Why Might A Later High School Start Time be Considered to Improve Student Outcomes?

Introduction

There are two main theories about why a later school start time might improve the education, health, or well-being of high school students. The first is that by having a later start time, students may get more sleep, and that this will lead to subsequent improvements in education and health indicators. The second is that later school start times better align school time with peak times in the day for adolescent alertness and learning potential.

There exists ample research on the biology of sleep, specifically pertaining to adolescents. This body of research details adolescents' unique circadian rhythms¹, patterns of later melatonin release and bio-regulatory processes associated with later evening sleepiness, and the growing prevalence lack of sleep and/or deprivation. Sleep research studies commonly find that teenagers have biologically different sleep and wake patterns than the preadolescent or adult population (Wahlstrom, 2002). Shortened sleep times (later bed times paired with earlier wake times) have been associated with lower academic performance, GPA's, and motivation levels, and more sleep and later weekday rise times have been associated with better grades and a higher motivation to do well in school (Horn, 1989; Epstein, Chillaq, & Lavie, 1998; Wolfson & Carskadon, 1998; Wolfson & Carskadon, 2005; Kahn, 1989; Meijer, Habekoth, & Van Den Wittenboer, 2000).

Laboratory testing for the impacts of sleep disturbances and sleep deprivation uncover possible links to:

- Aggressive behaviour (Fallone, Acebo, Seifer, & Carskadon, 2005; Gibson, Powles, Thabane, O'Brien, et al., 2006),
- Memory loss (Poirel & Larouche, 1987),
- Conflict with teachers, increased irritability and aggressive behaviour (Maas 1995; Wolfson, & Carskadon, 1998),
- Tardiness (Wahlstrom, 2002; Gibson et al., 2006),
- Falling asleep in class (Mass, 1995),
- Poor self esteem (Fredriksen, Rhodes, Reddy, & Way, 2004),

¹ Circadian Rhythms: the regular recurrence in cycles of approximately 24 hours from one stated point to another

- Greater risk of accidents (Dahl, 1996),
- Anxiety and depression (Chorney, Detweiler, Morris, & Kuhn 2007),
- Pre-frontal cortex dysfunction (Inappropriate behavioural responses, negative impact on creative thinking, decreased goal-oriented behaviour) (Drummond & Brown 1999; Harrison & Horne, 1996),
- Slow performance or lapses of performance, slower reaction times, difficulty concentrating (Sadeh, Gruber & Raviv, 2003), and
- Low achievement motivation (Meijer et al., 2000).

Even a moderate sleep increase (30 minutes to 1 hour) over a period of time has shown to be associated with increased scores on various performance tasks (reaction time and memory tests) (Sadeh , Gruber & Raviv, 2003).

With respect to the second point, i.e., adolescent peak times for alertness and potential learning, evidence from investigations of adolescent neuropsychologic performance indicate that there is indeed a time of day more ideal for certain types of learning and memory tasks (short term and long term). Hansen and colleagues found that students' performance was better later in the day than in the early morning (2005). Adolescent short term memory has also been shown to be better in the morning but long term memory improved in late afternoon and early evening (Blake, 1967; Monk, 1987; Harrison & Horne 1996).

Previous Research on Later High School Start Times

A comprehensive, systematic, and critical review of the worldwide literature pertaining to the effectiveness of later start times for high schools is underway at the University of Ottawa. Our initial scope of the prominent, and mostly North American, literature uncovered six previous studies of later high school start times. Unfortunately, four of these studies were not of high enough quality, or did not have sufficient publically available information about them, to be used for guiding subsequent decisions. Low study quality was principally due to a lack of, or inappropriate, control or comparison group where this design was warranted. The results of the remaining two studies are outlined briefly here.

Currently, the best study of later high school start time is one completed by the Minneapolis Public School District, with researchers from the Centre for Applied Research (CAREI) in the College of Education and Human Development at the University of Minnesota. On request of the school board, the study focused on the impacts of a later start for high school students, staff,

families, and community members. Seven secondary schools implemented a significantly later start time of 8:15am and departed from the former start time of 7:40 am. This schedule change affected 12,000 students. The study was undertaken over a four year period, starting in 1997, and included quantitative and qualitative data on sleep habits, educational performance, tardiness and absence, rates of continuous enrolment, student transfer rates, and graduation rates in the short and long term as well as the overall opinions and experiences of students, staff and parents (Wahlstrom & Davison, 2001, Wahlstrom, 2002; Kubow & Wahlstrom, 1999).

Results of this study indicate that after the implementation of the later start:

- Attendance rates from 1995-2000 (Grades 9, 10, 11) improved steadily;
- Greatest attendance improvements rates were for students in Grade 9;
- Students with previous non-continuous enrolment showed significant improvements in attendance;
- As reported by principals and support staff, there were fewer problems at home or with friends, fewer sicknesses, and fewer issues during class change time or in the cafeteria;
- Parents reported that their children were easier to live with and they had more time to discuss the upcoming day;
- Fifty-seven percent (57%) of teachers felt that students were more alert during first two periods;
- Teachers' opinions were split on whether student behaviour was improved by the later start;
- Major concerns about high absenteeism during last class diminished throughout the study;
- School staff were generally pleased with faculty meetings in the morning;
- School staff were generally pleased with increased planning time (allowed for additional items to be incorporated into lessons);
- Eighty-six percent (86%) of staff agreed that the later start time had a negative impact on their after-school personal time;
- Common reason for disliking the later schedule was the experience of increased traffic on the way home;
- Apart from reasons for disliking the new schedule, nearly 73% of those surveyed would still choose a start time later than 8 am;

- There were significantly lower scores in depression, sick days and tardiness among students;
- There were slight concerns regarding student work schedules and involvement with extra-curricular activities;
- Fewer students sought academic help before and after school in urban schools but more students sought academic help before and after school in suburban schools;
- There was an increase in tardiness due to late busses (urban schools, but not suburban);
- Bedtime for students each night remained unchanged;
- Students in the later start high school were getting, on average, one more hour of sleep per night;
- School day rise time was later for students with a later start;
- Daytime sleepiness was higher for students with the earlier start;
- Falling asleep in morning class while reading, studying, doing a test, or typing was lower for students with the later start;
- There was no significant difference in falling asleep in afternoon classes, and;
- The number of late arrivals due to oversleeping was lower in later start schools.

A second study based out of Arlington, Virginia evaluated a 45 minute change in school start time including 232 secondary school teachers and 231 adolescents in Grade 11 (Arlington Office of Planning and Evaluation, 2005). Researchers examined absences and tardiness (through a student school attendance database); student perceptions of alertness (through a student survey); teachers' perceptions of behaviour (through a teacher survey); and academic performance in first period classes (through data on Grade 9 and 10 students' grades from a student database). Forty-four percent (44%) of the students stated that they liked the new start time, 29% did not like the new start time, and 21% stated that there was no difference.

Of interest, were findings from the teachers' perception survey that showed 50% to 60% agreed or strongly agreed that students had increased first period alertness, preparedness, and participation. This increase was approximately 15% to 25% higher than the previous school year (earlier start time in 2000-2001).

While not specifically a study of a later high school start time implementation, an additional study by Carskadon and colleagues (1998) should also be mentioned. The sleep patterns of students transitioning from Grade 8 (where the start time was later) to Grade 9 (where the start time was earlier) and on to the beginning of Grade 10 were examined. Study findings indicate that:

- Students woke up 25 minutes earlier upon beginning Grade 10 (the earlier start).
- The onset of evening sleep did not change, from the schedule change, and the average time for bed remained about 10:40pm.
- The average amount of sleep decreased to 6 hours and 50 minutes from 7 hours and 9 minutes with the earlier schedule.
- Students with the earlier time schedule showed increased levels of fatigue and sleepiness.

BACKGROUND AND EVALUATION INFORMATION

Eastern Commerce Collegiate Institute (ECCI or Eastern Commerce) implemented a school-day schedule change, to a later start time than the previous 9:00 am, in September 2009. Their school day now begins at 10:00 am and finishes at 4:15 pm on Tuesdays, Wednesdays, and Thursdays, 3:00 pm Mondays and 2:30 pm Fridays. The schedule change was implemented, based on previous research, indicating that a later start time may increase the amount of sleep high school students were getting as well as better align the school day with students' optimum hours of alertness and potential learning.

The purpose of the evaluation is to assess the impact of the later start on Eastern Commerce's students and teachers using a matched-control pre and post evaluation design. The aim is to be comprehensive in the evaluation so that impacts in the areas of educational outcomes, health and well-being, and social and family aspects will be included. The overarching question is:

What are the impacts of the new school start time at Eastern Commerce Collegiate Institute for students, teachers and their families and community?

Methodology for Data Collection

A matched control school, which will be called *School ABC*, was selected for comparison with Eastern Commerce. To choose a comparator, we started with 14 possible TDSB secondary schools and reduced the choices to two, based on socio-economic challenge, gender, student age, student language and country of birth, and overall student achievement. School ABC was chosen because while the proportion of students speaking English and born in Canada were lower than the other secondary school, it had a similar history to Eastern Commerce and like Eastern Commerce, School ABC did not have a specific school boundary, but instead drew from students from across the city.

A questionnaire was developed and administered to all Grade 9-12 students attending Eastern Commerce and School ABC in mid-April 2010 (see Appendix A for questionnaire). In total 670 student surveys were completed:

- 375 School ABC
(response rate of 61%)
- 295 Eastern Commerce
(response rate of 56%)

The questionnaires were returned to the TDSB's Research and Information Services department, scanned, and cleaned, in late April and May 2010. In addition to the questionnaires, three focus groups and two interviews were done on March 9, 2010 at Eastern Commerce; 21 people participated [students (7), teaching staff (7), support staff (5), and administrators (2)]. Questions to guide discussions in the focus groups and interviews included:

- What do you perceive as the negative and positive impacts of the new schedule?
 - i. for students
 - ii. for students' families
 - iii. for staff
 - iv. for the school environment
 - v. for the broader community
- How do you think negative impacts could be reduced and positive impacts be enhanced?
- What advice might you give to other schools or school boards considering a change in start time at high school?

Student data was accessed and analyzed from a variety of data sources which included: student achievement information (credit accumulation, Grade 9 EQAO, Grade 10 Ontario Secondary School Literacy Test (OSSLT)), demographics (age, country of birth, language), average absenteeism rate, and the data collected specifically for this evaluation (student survey, focus groups, and interviews).

OVERALL FINDINGS

1.1 Demographics

Of the 670 students surveyed, there was a fairly even split between genders. Most students were born between 1991 and 1994 (16 to 19 years at the time of the survey). The average year of birth for both schools was 1992 (18 years old) (see Figures 1 and 2).

Figure 1: Students' Year of Birth

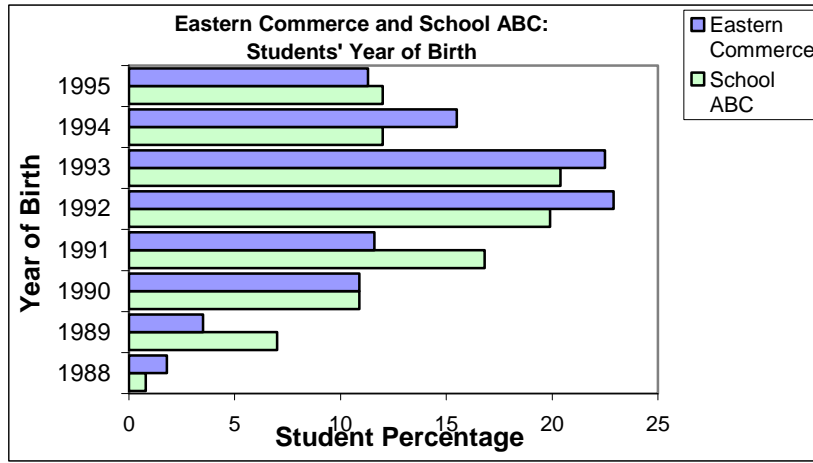
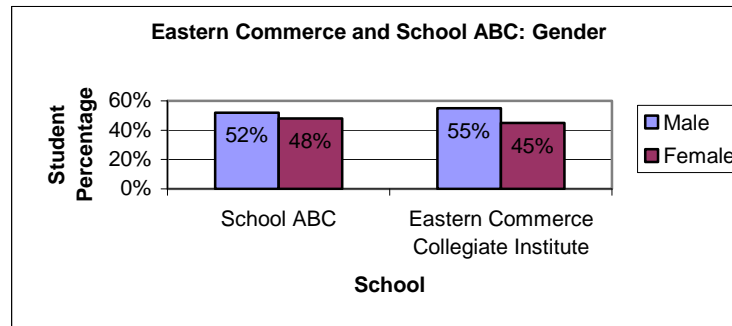


Figure 2: Students' Gender



Student ID numbers for Eastern Commerce and School ABC students (who completed the survey) were matched to student ID in the TDSB's Student Information System. Six hundred and forty-one (641) students could be matched in the student information system (out of the 670 students that completed the survey). Twenty-nine (29) students could not be matched because either their student ID's, for an unknown reason, were blocked off on the survey or they transferred into the TDSB and their student information was not up to date. Of those matched students, 47% (303) were born in Canada and

65% (402) spoke a non-English language or dialect as their first language. Based on spring 2010 student information data, the demographic characteristics of the students who completed the questionnaire is fairly representative of the characteristics at the two schools overall (see Table 1).

Table 1: Country of Birth and Language, by School

School	Country of Birth		Language	
	Canada Born	Outside Canada	English Dialect	Non-English Dialect
Eastern Commerce	60%	40%	46%	54%
School ABC	37%	63%	27%	73%

At both Eastern Commerce and School ABC, student mobility is fairly high. At Eastern Commerce 52% of students (who completed the questionnaire) attended Eastern Commerce in June 2009 and were still present in April 2010; 34% of students attended Eastern Commerce from October 2009 and were still present in April 2010, at the time of the questionnaire distribution; 14% of students entered Eastern Commerce after October 2010.

At School ABC, trends are somewhat similar. At School ABC, 44% of students (who completed the questionnaire) attended in June 2009 and were still present in April 2010; 36% of students attended School ABC from October 2009 and were still present in April 2010, at the time of the questionnaire distribution; 21% of students entered School ABC after October 2010.

Because of student mobility at Eastern Commerce, slightly more than half of the students who completed the questionnaire would have been students both before and after the schedule change.

1.2 Student Achievement Information

Students at both schools were asked how they rate their own academic progress; there were little differences between Eastern Commerce and School ABC (see Table 2).

Table 2: Question 10, How would you rate your own progress at this school?

	Excellent	Good	Fair/Average	Having Difficulty
Eastern Commerce	17%	49%	28%	6%
School ABC	16%	49%	30%	6%

Secondary Success Information

We examined credit accumulation information for Eastern Commerce and School ABC Grade 9 and 10 age appropriate students across years². Both schools saw an increase in Grade 9 cohort students with 7 or more credits in 2009-10 compared to 2008-09. Eastern Commerce had a 9% increase and School ABC had a 31% increase. Results differed for Grade 10 age appropriate students. Grade 10 students at Eastern Commerce with 15 or more credits in 2009-10 increased by 4% compared with 2008-09; while there was an 11% decrease in Grade 10 students at School ABC with 15 or more credits. For Grades 9 and 10 credit accumulation, both schools were below the TDSB; *however*, both schools' improvement percentage was greater than the TDSB's for both Grades 9 and 10 (see Tables 3 to 6, Figures 3 and 4).

Table 3: Eastern Commerce, Grade 9 Age Appropriate

Eastern Commerce	SCHOOL						TDSB					
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Number of Students	73	65	65	69	53	42	17823	17804	17864	17607	18053	18053
Completed 7+ Credits	67%	65%	69%	70%	70%	79%	84%	85%	86%	87%	88%	89%
Completed 6 or Fewer Credits	33%	35%	31%	30%	30%	21%	16%	15%	14%	13%	12%	11%

Table 4: School ABC, Grade 9 Age Appropriate

School ABC	SCHOOL						TDSB					
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Number of Students	103	48	54	62	46	41	17823	17804	17864	17607	18053	18053
Completed 7+ Credits	73%	77%	56%	60%	57%	88%	84%	85%	86%	87%	88%	89%
Completed 6 or Fewer Credits	27%	23%	44%	40%	43%	12%	16%	15%	14%	13%	12%	11%

² The Secondary Success Indicators (SSI) that is provided to schools includes: pass/fail data for Grade 9 English, Mathematics, Science, and Social Science (Geography), credit accumulation data for Grade 9 and 10 students, outcomes data for 17 year olds and 18 year olds and applications to post-secondary institutions (for 17 year olds as well as 18-21 year olds).

Note that the SSI information is not matched to the students who completed the late start questionnaire only. The information is calculated using the Grade 9 cohort calculation rules.

Table 5: Eastern Commerce, Grade 10 Age Appropriate

Eastern Commerce	SCHOOL						TDSB					
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Number of Students	74	76	66	71	83	60	17361	16979	16998	17035	16941	17448
Completed 15+ Credits	51%	49%	47%	37%	43%	47%	74%	76%	76%	77%	79%	81%
Completed 14 or Fewer Credits	49%	51%	53%	63%	57%	53%	26%	24%	24%	23%	21%	19%

Table 6: School ABC, Grade 10 Age Appropriate

School ABC	SCHOOL						TDSB					
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Number of Students	101	102	48	66	62	50	17361	16979	16998	17035	16941	17448
Completed 15+ Credits	48%	60%	60%	38%	47%	36%	74%	76%	76%	77%	79%	81%
Completed 14 or Fewer Credits	52%	40%	40%	62%	53%	64%	26%	24%	24%	23%	21%	19%

Figure 3: Eastern Commerce and School ABC, Grade 9 Age Appropriate

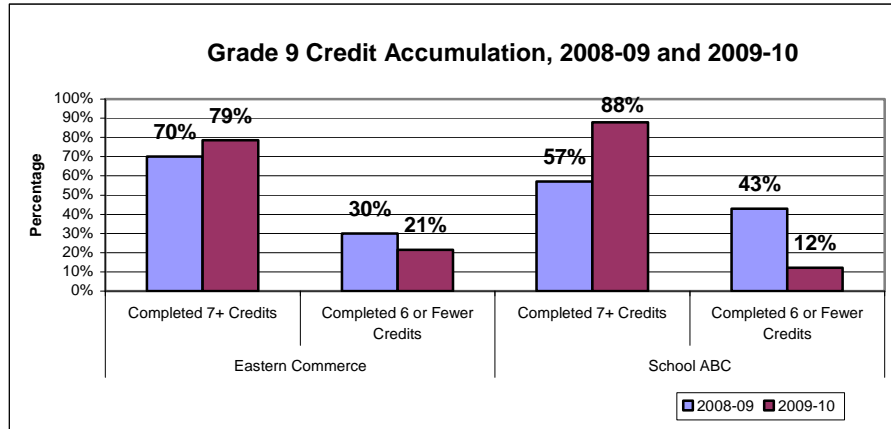
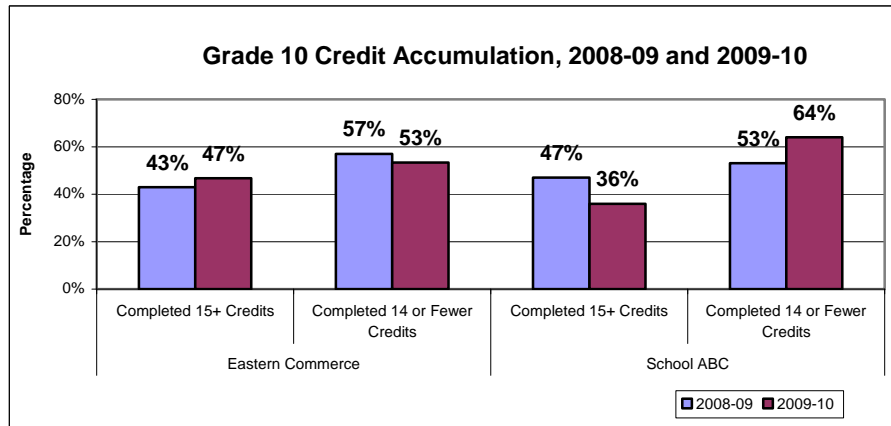


Figure 4: Eastern Commerce and School ABC, Grade 10 Age Appropriate



Average Grade 9 and 10 Marks, by Subject

Average marks for Grade 9 and 10 students at Eastern Commerce, School ABC, and the TDSB were compared across subjects (Mathematics, English, and Science) for 2008-09 and 2009-10. Eastern Commerce had the highest percentage of improvement in English and Science, while School ABC had the highest percentage of improvement in Mathematics. Both schools were below the TDSB's average marks for all three subjects (see Table 7).

Table 7: Grades 9 and 10 Average Marks, Mathematics, English, and Science

Gr 9 and 10 Combined	Mathematics		English		Science	
	2008-09	2009-10	2008-09	2009-10	2008-09	2009-10
TDSB	61%	62%	66%	66%	65%	66%
Eastern Commerce	47%	47%	48%	55%	49%	52%
School ABC	46%	53%	53%	57%	51%	51%

Average Grade 11 and 12 Marks, by Subject

Average marks for Grade 11 and 12 students at Eastern Commerce, School ABC, and the TDSB were compared across subjects (Mathematics, English, and Science) for 2008-09 and 2009-10. Eastern Commerce had the highest percentage of improvement in Mathematics (1%) and English (3%), while School ABC had the highest percentage of improvement in Science. Both schools were below the TDSB's average marks for all three subjects (see Table 8). Note, in both Grade ranges (9/10 and 11/12), English average marks increased in 2009-10.

Table 8: Grades 11 and 12 Average Marks, Mathematics, English, and Science

Gr 11 and 12 Combined	Mathematics		English		Science	
	2008-09	2009-10	2008-09	2009-10	2008-09	2009-10
TDSB	66%	66%	67%	67%	69%	70%
Eastern Commerce	53%	54%	55%	58%	59%	53%
School ABC	58%	58%	61%	55%	62%	65%

Grade 9 EQAO and Grade 10 OSSLT

EQAO Grade 9 Academic and Applied Mathematics and Grade 10 OSSLT achievement scores (all students) were compared across years. Results were mixed. Eastern Commerce saw a decline in Grade 9 EQAO Academic and Applied Mathematics and no change in Grade 10 OSSLT, while School ABC improved slightly in Grade 9 EQAO Academic Mathematics and Grade 10 OSSLT. In EQAO Grade 9 Mathematics (Academic and Applied) and Grade 10 OSSLT, both schools were below the TDSB (see Tables 9 and 10).

Table 9: Grade 9 EQAO

		SCHOOL				
Grade 9 Academic EQAO (M1)		2005-06	2006-07	2007-08	2008-09	2009-10
TDSB	At or Above Provincial Standard (Level 3 and 4)	65%	66%	72%	75%	81%
Eastern Commerce	At or Above Provincial Standard (Level 3 and 4)	20%	14%	38%	24%	19%
School ABC	At or Above Provincial Standard (Level 3 and 4)	44%	24%	19%	51%	57%
		SCHOOL				
Grade 9 Applied EQAO (M1)		2005-06	2006-07	2007-08	2008-09	2009-10
TDSB	At or Above Provincial Standard (Level 3 and 4)	20%	17%	19%	23%	26%
Eastern Commerce	At or Above Provincial Standard (Level 3 and 4)	19%	7%	15%	15%	6%
School ABC	At or Above Provincial Standard (Level 3 and 4)	28%	22%	15%	15%	14%

Table 10: Grade 10 OSSLT

		SCHOOL				
OSSLT (M1)		2005-06	2006-07	2007-08	2008-09	2009-10
TDSB	Successful (%)	71%	71%	71%	73%	73%
Eastern Commerce	Successful (%)	39%	48%	37%	42%	42%
School ABC	Successful (%)	45%	32%	22%	30%	31%

1.3 Eastern Commerce and School ABC Compared

The following sections compare survey findings, absenteeism information, and hours of sleep for Eastern Commerce and School ABC.

Absenteeism

For Eastern Commerce, following the schedule change in September 2009, absenteeism decreased in three age groups: 14, 16, and 17 year olds. This differed from the absenteeism increases, across all age groups, in the TDSB. Eastern Commerce and School ABC both reported increased absenteeism in the age group of 18 year olds. In comparison with the overall TDSB increase of 4.5%, for this same age group, Eastern Commerce's increase (4.0%) was lower than the board's; while School ABC's was 2.5% higher (see Figures 5 and 6).

Figure 5: Eastern Commerce and School ABC Average Absenteeism

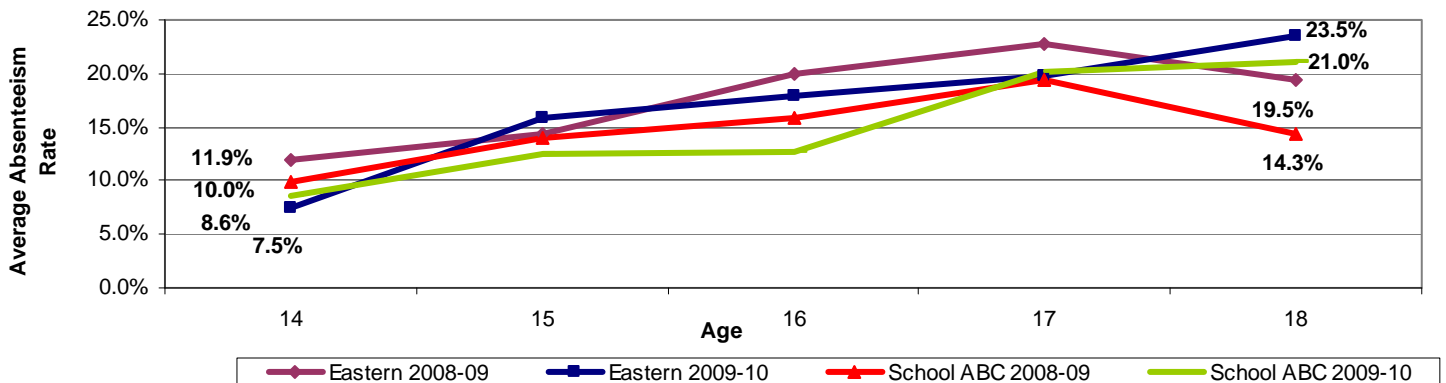
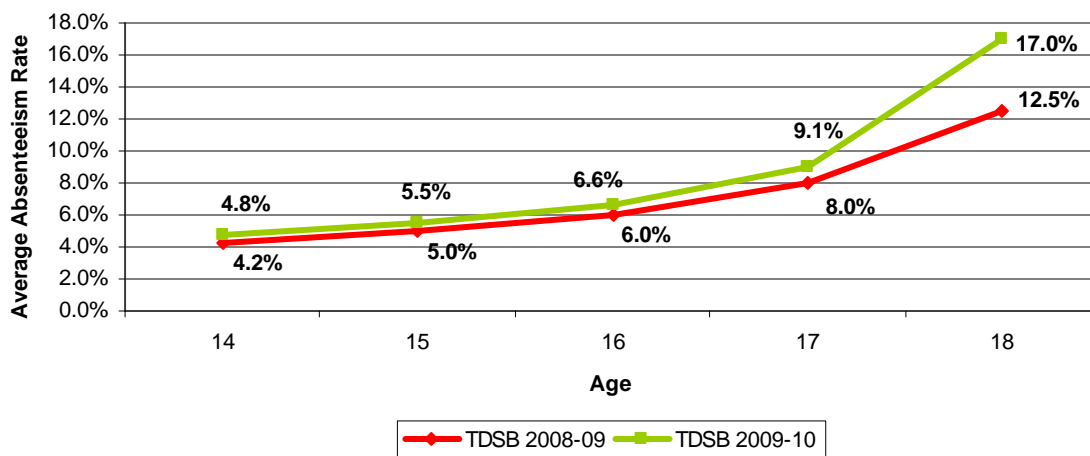


Figure 6: TDSB Average Absenteeism



School Perceptions

The results of the student surveys were analyzed using the Chi Square (cross-tabulation) statistical procedure with $p < 0.05$. This section presents and summarizes the student survey responses that showed *significant differences* between Eastern Commerce and School ABC (see Appendix B for detailed, school comparison).

Students were asked seven questions³ regarding their general feelings towards their schools. The following tables present the three areas in which the two schools were statistically different. They are students' feelings regarding:

- school as a friendly and welcoming place (χ^2 , 2, $N=661$, $=0.00$, $p=.05$);
- school building attractiveness (χ^2 , 2, $N=649$, $=0.03$, $p=.05$); and
- extra help being available at school (χ^2 , 2, $N=656$, $=0.03$, $p=.05$).

The differences between the schools, on these three topics, resulted from a higher percentage of School ABC students responding more positive than Eastern Commerce (see Table 11).

Table 11: How do you feel about your school?

How do you feel about your school?	My school is a friendly and welcoming place.		
	All the time/Often	Sometimes	Rarely/Never
School ABC	66%	25%	9%
Eastern Commerce Collegiate Institute	51%	35%	15%
How do you feel about your school?	My school building is an attractive and great place		
	All the time/Often	Sometimes	Rarely/Never
School ABC	48%	34%	18%
Eastern Commerce Collegiate Institute	40%	34%	26%
How do you feel about your school?	Extra help is available at the school when I need		
	All the time/Often	Sometimes	Rarely/Never
School ABC	74%	22%	4%
Eastern Commerce Collegiate Institute	68%	23%	9%

³ The seven survey questions regarding student feelings towards their school were:

A) I enjoy school (no significant difference); B) My school is a friendly and welcoming place (significant difference); C) My school building is an attractive and great place to learn (significant difference); D) I get along well with other students in my school (no significant difference); E) I feel accepted by students in my school (no significant difference); F) I feel accepted by adults in my school (no significant difference); G) Extra help is available at this school when I need it (significant difference)

Significant findings were also found in three of eight⁴ areas when students were asked about their ‘outside of school’ participation in various activities. Table 12 shows that Eastern Commerce had higher participation rate in sports and leadership programs.

Table 12: Participation in After School Activities

How often do you take part in the following types of activities after school ?	Sports			
	Weekly	Monthly	A few times per year	Never
School ABC	32%	16%	24%	28%
Eastern Commerce Collegiate Institute	42%	14%	19%	25%
How often do you take part in the following types of activities after school ?	Volunteer Activities			
	Weekly	Monthly	A few times per year	Never
School ABC	19%	13%	36%	33%
Eastern Commerce Collegiate Institute	15%	20%	39%	26%
How often do you take part in the following types of activities after school ?	Leadership Programs			
	Weekly	Monthly	A few times per year	Never
School ABC	6%	7%	22%	65%
Eastern Commerce Collegiate Institute	8%	13%	27%	51%

Students were also questioned about the time they spent participating in nine⁵ different activities, *on regular school days*. From the options provided, the schools were statistically different in three of the nine activities: Eastern Commerce students spent more time playing sports and recreational activities, participating in religious/faith activities and also in ‘other’ leisure activities (see Table 13).

⁴ The eight survey options presented for school participation ‘outside of school’ were:
 A) Arts (no significant difference); B) Cultural group activities (no significant difference)
 C) Music (no significant difference); D) Clubs (no significant difference); E) Religious activities (no significant difference); F) Sports (significant difference); G) Volunteer activities (significant difference); H) Leadership Programs(significant difference).

⁵ The nine survey options presented for regular school day participation were:
 A) Household chores (no significant difference); B) Looking after brothers, sisters, and/or family members (no significant difference); C) Helping with a family business (no significant difference)
 D) Watching T.V. (no significant difference); E) Playing computer/ video games (no significant difference); F) Spending time on the internet (no significant difference); G) Playing sports and recreational activities (significant difference); H) Religious/ faith activities (significant difference); I) Other leisure activities (e.g., going to movies, talking on the phone, listening to music, going to the mall, hanging out with friends, reading for leisure) (no significant difference).

Table 13: Participation in Activities, by School Week

On a regular school day, how much time do you spend on the following activities?	Playing Sports and Recreational Activities			
	None	Less than one hour	1 - 2 hours	More than 2 hours
School ABC	21%	32%	28%	19%
Eastern Commerce Collegiate Institute	19%	18%	27%	35%
On a regular school day, how much time do you spend on the following activities?	Religious/Faith Activities			
	None	Less than one hour	1 - 2 hours	More than 2 hours
School ABC	51%	25%	15%	9%
Eastern Commerce Collegiate Institute	42%	34%	17%	7%
On a regular school day, how much time do you spend on the following activities?	Other Leisure Activities			
	None	Less than one hour	1 - 2 hours	More than 2 hours
School ABC	7%	22%	31%	40%
Eastern Commerce Collegiate Institute	6%	16%	27%	51%

In the three categories regarding homework and studying hours, part-time work and sports participation the schools were significantly different in two of these three areas; homework hours and sports participation. The difference in homework and studying hours (per week including weekends) was the following: a higher percentage of School ABC students spent above 10 hours per week on homework while a higher percentage of Eastern Commerce students spent below 3 hours a week on homework/ studying. Eastern Commerce students spent an average of 7.47 hours a week on homework, while students at School ABC spent an average of 9.82 hours a week on homework.

Differences were also reported between the two schools regarding sports and recreation participation: Eastern Commerce had a higher percentage of students participating over 10 hours a week (30%) while a higher percentage of School ABC students (58%) spent below 3 hours per week on sports. Eastern Commerce students spent an average of 7.73 hours a week on sports, while students at School ABC spent an average of 5.21 hours a week on sports (see Table 14).

Table 14: Hours a Week Spent on Homework/Studying and Sports

About how many hours a week (including weekends) do you spend on?	Homework and Studying									
	0	1 to 3	4 to 6	7 to 9	10 to 12	13 to 15	16 to 18	19 to 21	22 +	
School ABC	6%	20%	21%	11%	17%	10%	3%	5%	8%	
Eastern Commerce Collegiate Institute	9%	26%	19%	10%	22%	6%	1%	4%	4%	
About how many hours a week (including weekends) do you spend on?	Sports									
	0	1 to 3	4 to 6	7 to 9	10 to 12	13 to 15	16 to 18	19 to 21	22 +	
School ABC	36%	22%	13%	9%	9%	4%	0%	3%	5%	
Eastern Commerce Collegiate Institute	30%	18%	17%	4%	12%	6%	2%	4%	6%	

Students were also asked about the reasons for choosing their school. Of the seven⁶ possible choices provided, the schools showed significant differences in these three: other friends and relative attending, sports at school, and the time schedule. Eastern Commerce students chose their school based on friends/ relatives attending (57%), sports (54%) and the time schedule (73%). School ABC's results were lower in these same areas: 46%, 33% and 66%, respectively (see Table 15).

Table 15: Why did you choose to attend this school?

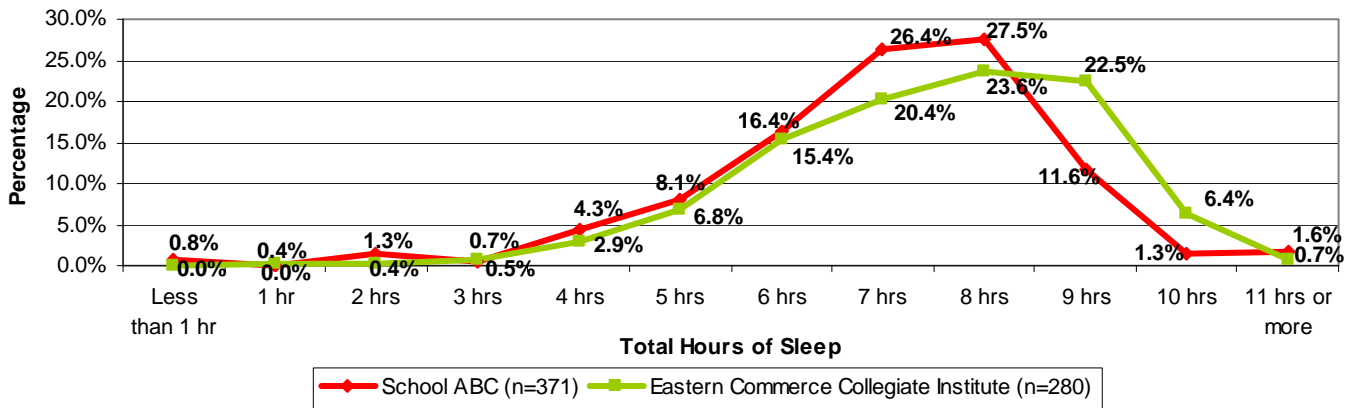
Why did you choose to attend this school?	Other friends or relatives were going to this school			
	Strongly Agree	Agree	Disagree	Strongly Disagree
School ABC	12%	31%	35%	22%
Eastern Commerce Collegiate Institute	15%	42%	24%	19%
Why did you choose to attend this school?	Sports at the school			
	Strongly Agree	Agree	Disagree	Strongly Disagree
School ABC	9%	24%	44%	23%
Eastern Commerce Collegiate Institute	25%	29%	28%	18%
Why did you choose to attend this school?	I like the time schedule at this school			
	Strongly Agree	Agree	Disagree	Strongly Disagree
School ABC	17%	49%	23%	11%
Eastern Commerce Collegiate Institute	39%	34%	14%	13%

⁶ The seven options provided for choosing their school were as follows:
 A) It is near where I live (no significant difference); B) My family wanted me to go to this school (no significant difference); C) Other friends or relatives were going to this school (significant difference); D) I like the courses I can take at the school (no significant difference); E) Sports at the school (e.g., sport teams) (significant difference); F) Other activities at the school (e.g., clubs, cultural activities) (no significant difference); G) I like the time schedule at this school (significant difference); G) Other reasons (students provided response) (no significant difference)

Hours of Sleep

Eastern Commerce and School ABC were relatively equal in the number of students who reported sleeping less than 7 hours the previous night. Figure 7 shows the percentage of students getting 7 or 8 hours of sleep; nearly 60% for School ABC and 44% for Eastern Commerce. However, in the category for 9 and 10 hours of sleep, Eastern Commerce more than doubles the percentage of School ABC. Almost a quarter of Eastern Commerce students received 9 hours of sleep while only slightly over 10% of students at School ABC do (see Figure 7).

Figure 7: Total Hours of Sleep, by School



Eastern Commerce students slept approximately 30 minutes more than School ABC students. Eastern Commerce had an average sleep time of 7 hours and 50 minutes. School ABC had an average sleep time of 7 hours and 22 minutes⁷. This 30 minute difference applies more to the younger students. As the age of students increases, average hours of sleep becomes mixed when comparing schools (see Table 16)⁸. Not surprisingly, students at both schools report sleeping more on the weekends when compared to the weekdays (see Table 17).

Table 16: Average Hours of Sleep, by Year of Birth

	1989	1990	1991	1992	1993	1994	1995
Eastern Commerce	07:42	07:24	07:33	08:02	07:59	07:46	08:11
School ABC	07:11	07:20	06:59	07:23	07:33	07:18	07:40

⁷ The survey was administered on a week day, so the question pertaining to hours of sleep on the previous night represents a weekday evening hours of sleep.

⁸ The number of students born in 1988 was below 10 and therefore not presented in Table 15.

Table 17: Questions 7 and 8, Eastern Commerce and School ABC

Was the amount of sleep you got last night normal for you, less than normal or more than normal for a SCHOOL NIGHT?			
School	Normal	Less than normal	More than normal
Eastern Commerce	59%	32%	9%
School ABC	60%	30%	10%

Was the amount of sleep you got last night normal for you, less than normal or more than normal for a night when you DON'T have school the next day?			
School	Normal	Less than normal	More than normal
Eastern Commerce	32%	44%	24%
School ABC	31%	44%	26%

Although the average sleep between the two schools differed by 30 minutes, Eastern Commerce students went to bed approximately an hour later and woke up approximately an hour later than School ABC students. Seventy-one percent (71%) of School ABC students went to bed between 10 pm and 12:59 am; 70% of Eastern Commerce students went to bed between 11pm and 1:59 am. Seventy-four percent (74%) of School ABC students woke up between 6 am and 7:59 am; 76% of Eastern Commerce students woke up between 8 am and 9:59 am (see Figures 8 and 9).

Figure 8: Bed Times Compared

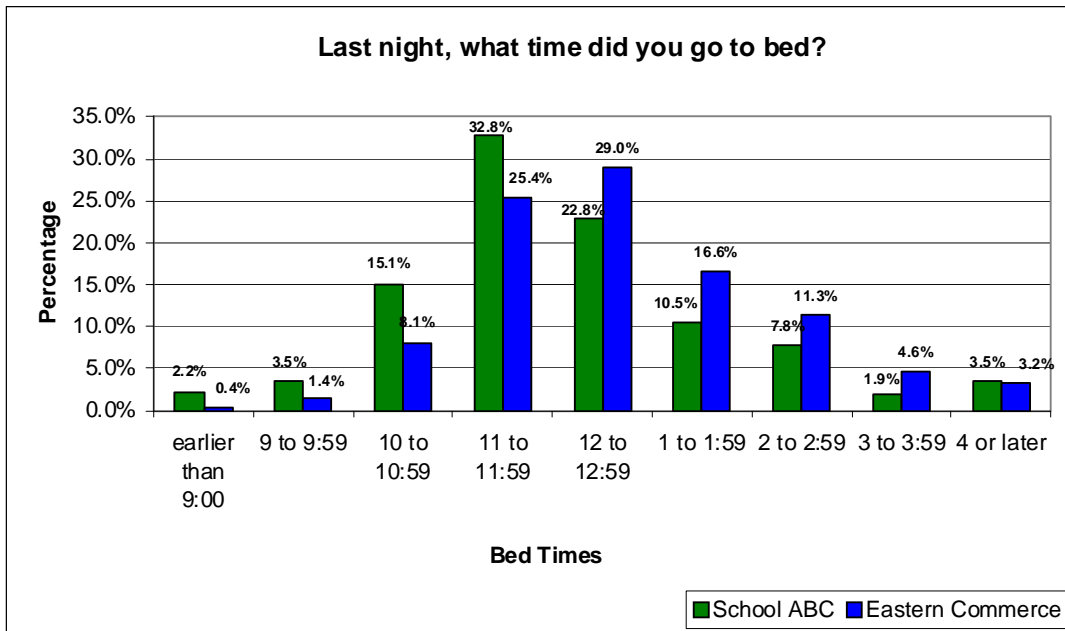
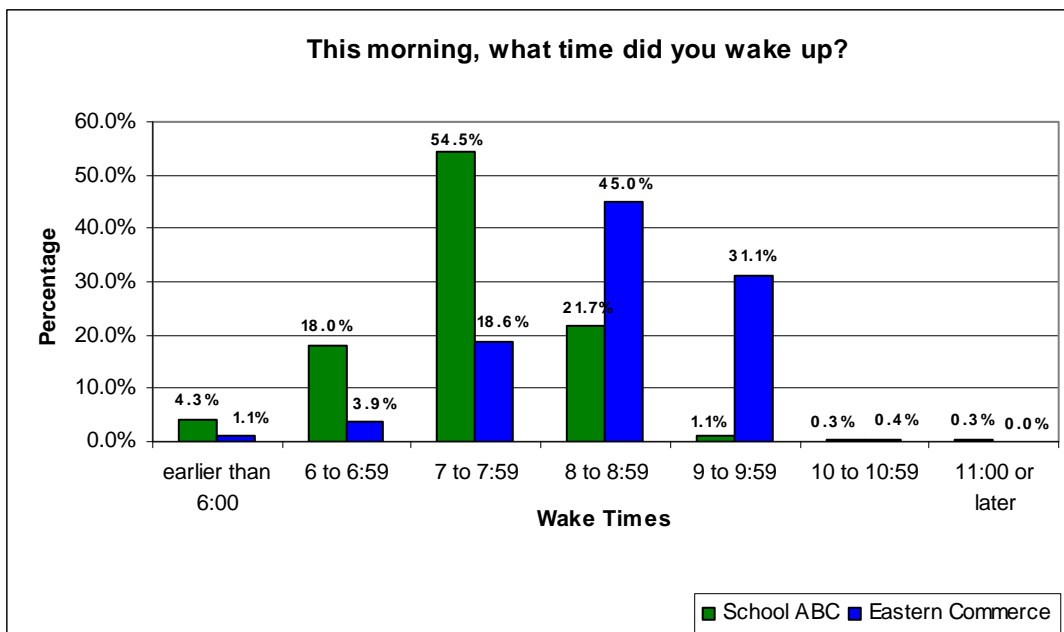


Figure 9: Wake-up Times Compared



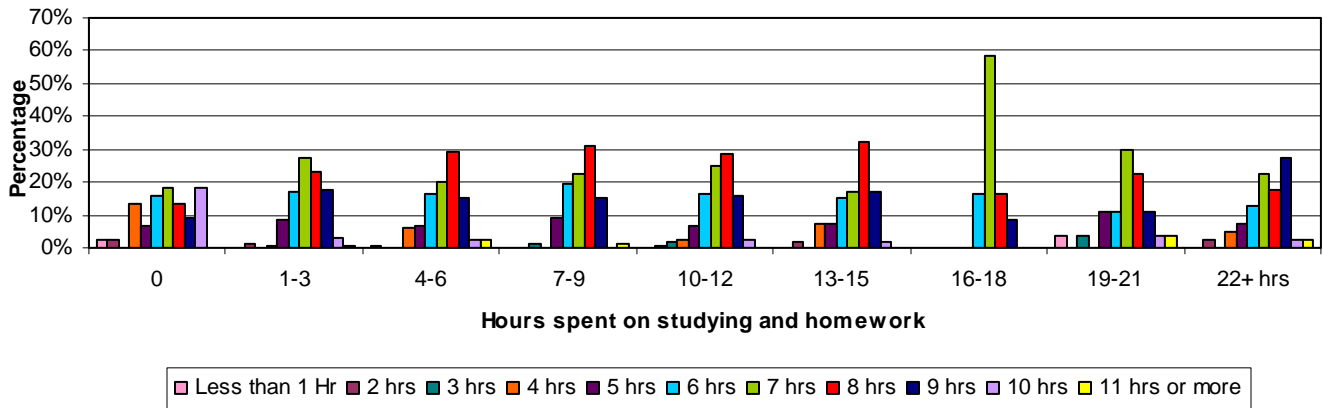
1.4 Eastern Commerce: Further Analysis

The following section outlines interesting findings specific to Eastern Commerce only. Hours of sleep for Eastern Commerce was analyzed by year of birth, gender, country of birth, frequency for out-of-school activities, reason for attending school, and absenteeism. It was found that, hours of sleep were not significantly different according to any of these variables.

Examining the relationship between hours of homework and sleep hours, highlighted an interesting finding. There is a significant difference between the total hours of sleep a student gets and the time they report spending on studying/homework. We know from the previous section that Eastern Commerce students were more likely to have more sleep (approximately 30 minutes on average for school nights) when compared to the control school. Students who have more hours of sleep also reported more hours spent on homework (see Figure 10).

Among Eastern Commerce students, regardless of the average sleep per night (7 hours and 50 minutes) the range of time spent on homework varied widely between 0 and 21 hours per week; with an average of 7.47 hours a week spent on studying or homework. However, in the category for students completing more than 22 hours of homework, the highest number of students were those sleeping 9 hours; or sleeping more than average. In summary, students reporting more sleep also spent more time on homework (see Figure 10)..

Figure 10: Hours Spent on Studying and Homework



More Eastern Commerce students, than students at the control school, frequently reported that it was easier to come to school since the introduction of the later start, regardless of the hours of sleep per night. Students' opinions of the later start were significantly related to how they reported their ease or difficulty with coming to school. For the 74% of students who liked the schedule, the majority of them (70%) also found it easier to come to school (see Figures 11 and 12 and Table 18).

Figure 11: Hours of Sleep and Student Opinion

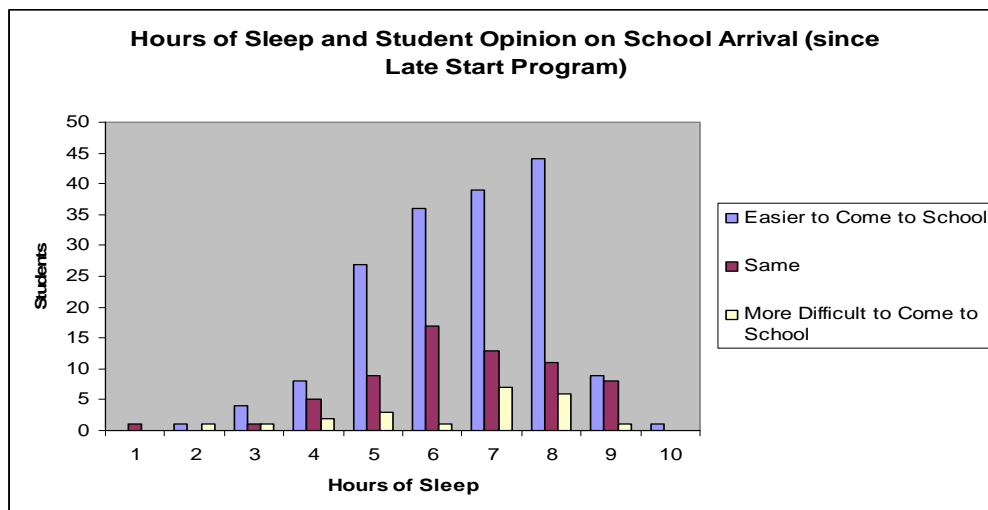


Figure 12: Schedule

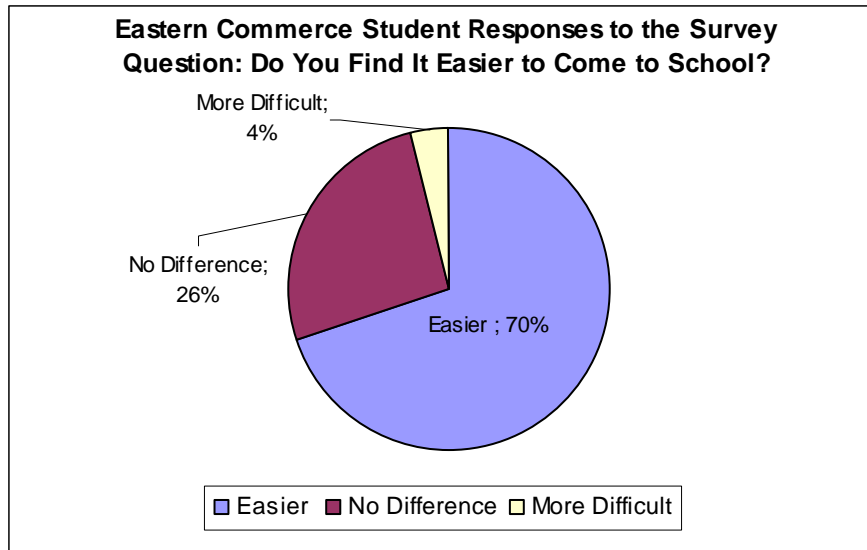


Table 18: Attending School

	Less than 1 hr	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	7 hrs	8 hrs	9 hrs	10 hrs	11 hrs or more
Easier to come to school (n=169)	0.0%	0.0%	0.0%	0.6%	2.4%	4.7%	16.0%	21.3%	23.1%	26.0%	5.3%	0.6%
No difference from last year (n=65)	1.5%	1.5%	1.5%	0.0%	1.5%	7.7%	13.8%	26.2%	20.0%	16.9%	12.3%	0.0%
More difficult to come to school (n=22)	0.0%	0.0%	0.0%	4.5%	4.5%	9.1%	13.6%	4.5%	31.8%	27.3%	4.5%	0.0%

Demographically, homework/study time hours were significantly higher for non-English speaking students (n= 390) and those not born in Canada (n= 354). For these same students, leisure time and T.V. watching was significantly lower. Canadian born students spent significantly more time playing video games than non-Canadian born students.

EASTERN COMMERCE HIGHLIGHTS- QUALITATIVE FINDINGS

Overall Impressions and Experiences

Participants described some of the reasons they felt the late start was considered in the first place:

- To address the serious lateness and absenteeism problem;
- To help students succeed by aligning student learning times with the middle part of the day when adolescents can be more alert and learn better;
- To help adolescents get more sleep and be more awake and alert in school;
- To help maintain enrolment numbers at the school by providing a different schedule option than other high schools in the area.

There was a good deal of preparation and consultation that had to be done prior to the initiation of the schedule change. This included planning the schedule and engaging in communication and consultation with students, parents, staff, media and the interested general public. Students and staff were able to transfer schools if the later schedule did not suit their needs. While there were no staff members reported to have left for this reason, there were some students who transferred in response to the schedule change:

We had quite a few people change schools because they couldn't stay here [late]. Because the parents didn't want them coming home in the dark and other siblings were coming home at a different time and they didn't feel comfortable with that. (Staff)

However there were also students who transferred into Eastern Commerce because of the change in schedule and many students talked about liking the schedule.

Overall, students and staff did take time to adjust to the change. Some staff comments included:

It was hard for us first semester. It is a lot better in second semester (getting used to it).

We were worried they wouldn't get used to the ten o'clock time start. I think most kids have gotten used to it now. I don't hear a lot of complaints from any students saying anything about the late start.

Some student comments included:

The first month we didn't like it. It took us a while to get used to it. But once we got used to it we liked it.

There were some immediate adjustments in response to specific challenges faced in the first semester. One of the most significant was that the lunch period, initially shorter than 1 hour, was not sufficient. Extra-curricular activities were being negatively affected and students were late to the after lunch classes. Starting in second semester, lunch was made 1 hour long, by sacrificing 20 minutes of students' independent reading time, and the issues were resolved. Additional literacy activities were considered and students were encouraged to read during lunch as well.

Staff comments:

With a 40 minute lunch, the late problem with period 3 was way worse than the late problem in period 1.

We just found that, as a whole, kids would be late. Kids would be complaining, staff members would be concerned. Admin would be concerned because they would see kids missing either a lot of, some of or all of the period after lunch, and often with good reason...With the hour lunch then it is back to being on track..

The current feeling about the late start is quite positive. Although some are indifferent, and opinions do vary depending on individual circumstances, the majority of staff and students are for the change in schedule. It is easier for students to come to school, they seem to be less late than in the past and they are more alert when they do come. Generally, the later start makes travelling to and from school at non-peak times easier and it allows the morning to be less rushed. There were some students who said that travelling at non-peak times meant there were actually fewer busses or subway trains running making it slightly more difficult to get to school on time.

Staff comments:

For the sake of the students' alertness in the morning, I would do it. And I find that yes they are sleeping during period four but I was finding that they were doing that no matter what. They were doing that last year period four to.

"Personally for myself, I prefer the later start because it does help me get my own kids up and off to school before I come to school.

I would vote to keep it as is because of the two days that are earlier. So to me it is the perfect blend of being able to have that. Not just that it is late, but because there are days where it is not. And those days allow us to have meetings such as this. Curriculum development meetings as well as connect with students sometimes and with the things that you do in the school. I would keep it.

I think the late start is a good thing because when you have kids coming from Jane and Finch and Scarborough and places like that I think they should have the opportunity to get here with no pressure. Kids who want to be in school will be here at five minutes to ten...the good kids are focused and they come to school and will be on time.

Student comments:

But there is a good side to it to because...I believe that so many students use the TTC to get to school right? I used to come to school at 8:30 or 8 and it was so crowded, it was crazy. But this year it is a lot easier. I get seats, you know? And it is so much better, you don't have to rush.

Yes I would keep it.

Some staff members do still find it hard to make appointments, do banking, attend training workshops, etc. and it has meant some reduction in staff involvement in after-school activities because of family commitments. Staff comments included:

I have students who come for help at lunch, I would love to be able to stay after school but because I live so far away and I take the subway, if I stay even an hour and half after, that's about 6 o'clock, I don't get home until 7 or 7:30, and I have a family. So for me personally, I probably would stay later more often if we ended at 3 o'clock with a 9 o'clock start.

Many participants noted however that it is beneficial to have two days a week that end earlier than 4:15.

Staff comments:

As adults, you adjust. You adjust to the time, what you want to do- dentist appointment or whatever. And you know on Friday we are done at 2:30, you know I can make my appointment at 3 or 3:30.

Student comments:

It is a positive thing, especially on days with early dismissal as well, a 10-3 schedule every day would be ideal!

Alertness

Overall, staff members reported that students are more alert and awake in class, especially in the morning. Staff comments included:

Kids seem to be more alert in the afternoon this year than they did last year. I really don't see my kids resting or trying to sleep or complaining of being tired.

And they were awake. That was the big difference, they were awake. There were very few kids nodding off. So in that regard it is a success.

In period one I notice a big difference in terms of their energy and attention. Period one before the late start was brutal. I would actually have to tap people on the shoulder to wake them up frequently. And now when they are here they are awake and they have had time to think and talk. They are much more willing to learn and work together. So, I think just in terms of motivation and responsiveness and energy in the classroom I can see improvements.

There is still some marked tiredness, lateness, and absenteeism in periods three and four:

Staff comments:

Period four is a problem. In November/December my room was so dark. Some students were skipping.

Student comments:

My Mom doesn't want me to be coming home in the dark.

Sleep

The comments here are mixed. Most believe that students are probably staying up later because they know they don't have to get up early in the morning. They do believe that mornings are generally less rushed and some students are sleeping a bit longer in the morning:

Staff comments:

They are getting better sleep; I mean they are showing up awake. So something is changing in that regard. I honestly don't think they are going to bed later but they are allowed to sleep in that extra hour.

Student comments:

I don't think most students/kids are getting more sleep. We just think – I can stay up an hour later.

However, as a necessary adjustment, some sports practices are now being held in the morning and other students have to get up early with siblings or to travel long distances to attend school (with the slower non-peak bus and subway schedules) so the sleep gains may not be significant.

Staff comments:

If this was a neighbourhood school it might work better. Our kids still have to get up early they have so far to travel.

Student comments:

There are practices in the morning. For basketball 8-9:30 in the morning.

Some of us are taking siblings or children to schools or daycare at the earlier time.

Absenteeism and Lateness

Comments from staff and students did identify that the new schedule did not entirely solve the late problem in the morning.

Staff comments:

The traffic in the office hasn't changed at all [since the late start], I don't think. The kids who are late are always late, unfortunately. It doesn't matter if you start school at three in the afternoon. They will still be late. It is just the tendency to hang out. Rush hour traffic is over, that is why a lot of people are late, they don't think they need to leave earlier. And busses take longer, there are less busses and subways and slower trains. But that is one of the big reasons we get all the time for them being late. Other than that there are sometimes the family responsibilities that they give you. They have to take another sibling to school.

I only have one or two for "Oh Canada". 2/3 of the students are still not in the classroom at 10:20. The reason for the late start was to get them here on time and everyday and from my point of view that is not working.

Student comments:

The TTC (subway) is different later in the morning, so the travelling is less busy but there are less trains and busses to catch. Sometimes they are late.

But there is a perception among students and staff that the degree of the late problem has improved.

Staff comments:

By 10:20 I have at least 80% of my students. The grade tens are more apt to be there than senior classes.

One thing that I have found- talking about being late, yes they are late just as much but they are not AS late.

Student comments:

A lot larger chunk of students are coming in the first 15 minutes. More kids are getting here for more of their classes but it has not solved the late problem totally.

The later start means that students are able to deliver younger siblings or children to school or daycare in the morning but not pick them up afterwards unless they sign out early or skip classes in the afternoon.

Academic Achievement

Comments here are somewhat mixed as well. Teachers definitely feel that students are more alert and many feel marks must be improving. Students feel that marks are probably about the same.

Staff comments:

In terms of the marks, yes they have improved, I had a forty five percent failure rate and it went down to a twenty two percent. So that was cut in half. The same course, the same kinds of kids but they were in class now. And they were awake.

Student comments:

I don't think there is much change (in marks). Kids who are going to get good grades will get them anyway... Kids who are going to fail will probably do that to no matter when school is.

Extra-curricular Activities and Sports

There has not been a reduction in the number of extra curricular activities, but these activities are now primarily happening before school or at lunch. Some after school activities are suffering either with lack of attendance or the trouble with very late home times:

Staff comments:

I used to have kids want to stay after school but now they don't. Virtually nobody shows up for homework club. It is way too late.

There are as many teams if not more this year. Practices are in the morning or after school. Some are at lunch. But I don't see a drastic change either way.

Student comments:

It has impacted sports. We have to be out of the building by 7pm. When we finish school at 4:15 we're tired and we need a bit of a break before practice. Some nights I might not get home before 8:30.

For those students in after school activities, such as sports, that require playing matches with other schools, they can miss quite a bit of school, especially in the afternoons.

Student comments included:

Going for games (sports teams) means missing more time. As opposed to missing half way through third, we are now missing more. Even a game that is here, now a game at 3:30 means we are missing all of fourth period. Missing school. It has been detrimental.

Student Employment

Although some older students are leaving school during the day to go to work, there have not been significant complaints about the later schedule detrimentally affecting the students' ability to take on part-time jobs:

Staff comments:

I have never heard a complaint about work, they were worried at first about it but it hasn't been a bit of trouble. Most jobs start at 5pm, extra curricular may be impacted but not significantly.

Work is a big thing. We get a lot of sign outs during the day for work. And once they are over 18 they can go without permission so just sign themselves out.

Student comments:

We can still work after school and on the weekends.

The later schedule has been difficult to work with in the Co-op placement program. Staff comments included:

For Co-op placements the late start creates havoc for the students. It is very discouraging. Tuesdays and Fridays aren't too bad.

Overall Impact on the School

The later start has meant a significant increase in the need for substitute teachers (particularly after 3:30 pm when teachers are participating in after school activities at other schools or offices). There have been fewer students or staff staying after school for activities or extra help. Staff comments included:

It turns out that by 4:30 this place is a ghost town.

The later start has been a tough change for the custodial team. Lunch sometimes doesn't end until 2pm and usually a custodian's work is done by then. The custodial team note that school cleanliness is about the same. Teachers and hall monitors note that feelings of safety and security at school are basically the same as previously.

Impact on the Broader Community

The later start has helped improve after-school tensions between students of different high schools at the local subway station. Student comments included

The immediate after-school conflict time zone of heated and in your face energy doesn't happen as much.

Nearby businesses and transportation services view the late start favorably, as the peak times for ECCI students are now different from other customers. Staff comments included:

The local burger restaurant love it, all the kids come in later than the regulars or local people.

The early dismissal Friday still allows Muslim students to attend Mosque on this day and this is appreciated by this community.

SUMMARY DISCUSSION

Overall, the change in schedule did take some preparation and a period of early adjustment, but it is now perceived as generally positive by students and staff. Students at Eastern Commerce:

- Overwhelmingly report that it is “easier to come to school” following the schedule change;
- Had higher participation rates in sports, volunteer activities, and leadership programs than the comparison school;
- Were absent less often (among 14, 16, and 17 year olds) following the schedule change, where there were marginal absenteeism increases across all age groups across the TDSB;
- Showed a 4-9% improvement in academic credit accumulation for students in Grades 9 and 10 following the later start. This improvement was greater than rates of improvement in the TDSB overall;
- Showed the highest percentage improvement in Grades 9 and 10 English and Science as compared to the control school and the TDSB as a whole.
- Showed the highest percentage improvement in Grades 11 and 12 English and Mathematics as compared to the control school and the TDSB as a whole.
- Reported getting, on average, 30 minutes more sleep per night than students in the comparison high school; and
- Showed 2.5 times the number of students getting more than 9 hours of sleep per night than in the control school.

The later start also helped support a Universal Breakfast Program at ECCI which runs until 10:00 am each morning and is well attended⁹.

In looking at the overall achievement trends, the results, while encouraging, are by no means definitive. In terms of overall marks, there were more increases than decreases. Though to balance this, there was a slight decline in Grade 11 and 12 Science marks, and no improvement according to the provincial EQAO Grade 9 and 10 assessment

⁹ Student gains at Eastern Commerce may have been positively impacted by the Universal Breakfast Program and we cannot entirely isolate the impacts of the later start from the impacts this program may have had; however, note that the control school, School ABC, also has a Breakfast Program.

results. Achievement gains must be viewed in a cautiously positive light. More long-term follow-up is required.

The schedule change has been well received by the broader community given that now the high school students are using services (i.e., public transport, restaurants, corner stores) at off peak times. There has been a reported reduction in tension at local subway stations after school.

Teachers report that, especially in the morning, students are much more alert and able to participate in class. Although some teachers still note a 4th period afternoon sleepiness among students.

There was an increase in absenteeism among older students following the later start. There were also reports of older students signing out during the day to, for example, go to a place of employment or pick children up from school or day care. However, overall the students do not feel that the later start is a hindrance to employment activities.

Fewer students are staying after school for activities than in the past. This has been adjusted for in some cases as sport practices or other activities are occurring before school or at lunch. Those students who do participate in sports tend to miss more school than in the past because they miss the late afternoon classes if they travel to another school (with a more traditional schedule) to play games.

While tardiness¹⁰ is still a very significant problem, not entirely solved by the later start, there appears to be an improvement in the *degree of lateness* with a greater number of students arriving at school within the first 30-40 minutes than was seen previously.

The schedule change did pose some challenges for school staff. The custodial staff is required to stay later than previously to be able to clean after the later lunch period. Some teachers report staying at school until 7pm in the evening and others say they still come relatively early in the morning to prepare. A number of teachers expressed regret that they could not be more involved in after-school activities, but that the later schedule prevented it. The schedule change has been preferred by some staff because they are able to get their own children to school in the morning, but others find it difficult to participate in family meals and activities in the early evening because they arrive home

¹⁰ Tardiness information within this report came from discussions within the focus groups and is not available as quantitative data.

so late. In general, staff members are supportive and have made the required adjustments.

Overall, it appears that the later start schedule change has been successful at Eastern Commerce. The later schedule can be seen as another option for TDSB schools to support student success.

Research Moving Forward

As the school has done thus far, it is a priority to monitor and mitigate any challenges or issues that arise related to the later start time. This is the first report from the evaluation, and efforts to evaluate the longer term impacts of the late start are on-going. Future research will include follow-up interviews and focus groups in June 2011 with Eastern Commerce staff and students as well as additional analysis of student achievement information over time. All Eastern Commerce students will be completing a school climate survey in the Spring of 2011. This data will be reviewed and compared to further monitor the potential impacts of the later school start time. Eastern Commerce registration data will also be monitored to understand whether the change in schedule has had any lasting impacts on student population numbers.

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Late Start Survey



Eastern Commerce Collegiate Institute - Questionnaire

School Name:	
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Home Room:	
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Student Name:

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If this is not your name, please return this form and get the one with your name.

This survey is voluntary. The purpose is to look at different types of school schedules and how they influence students. We will appreciate if you would answer the questions as completely and accurately as possible.

Your answers are confidential and will not be shared with anyone in your school. Your name will not be shown in the survey. That is why it is important to remove this page carefully from the rest of the survey before handing in your completed form. Your answers will be linked to other Board information for analysis, but your name will never be reported.

Information will be reported in *summary* form (e.g., the total number of students who work part-time in Grade 10). No individual student will be identified in the reports.

Thank you for your cooperation.

Eastern/Central Commerce Collegiate Institute - Questionnaire

School ID: <input style="width: 90%;" type="text"/>	School Name: <input style="width: 95%;" type="text"/>	Home Room: <input style="width: 90%;" type="text"/>
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Instructions for filling out form: For optimum accuracy, please use a black pen or dark pencil.

Shade Circles Like This--> ●

Not Like This--> ⊗ ⊙

1. How do you feel about your school?

	All the time	Often	Sometimes	Rarely	Never
A) I enjoy school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) My school is a friendly and welcoming place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C) My school building is an attractive and great place to learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D) I get along well with other students in my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E) I feel accepted by students in my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F) I feel accepted by adults in my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G) Extra help is available at this school when I need it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. How often do you take part in the following types of activities outside of school?

	Weekly	Monthly	A few times this year	Never
A) Arts (e.g., visual arts, drama, dance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) Cultural group activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C) Music (e.g., piano lessons, band, choir)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D) Clubs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E) Religious activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F) Sports (e.g., swimming lessons, community sport teams)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G) Volunteer activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H) Leadership programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I) Other: <input style="width: 300px; height: 20px;" type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Where do these activities usually take place?

When do these activities usually take place (e.g. before school, after school, weekends, holidays)?

3. On a regular school day, how much time do you spend on the following activities?

	None	Less than one hour	1-2 hours	More than 2 hours
A) Household chores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) Looking after brothers, sisters, and/or family members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C) Helping with a family business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D) Watching TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E) Playing computer/video games	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F) Spending time on the internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G) Playing sports and recreational activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H) Religious/faith activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I) Other leisure activities (e.g., going to movies, talking on the phone, listening to music, going to the mall, hanging out with friends, reading for leisure)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When do these activities usually take place (e.g. before school, after school, weekends, holidays)?

For Office Use Only:



4. About how many **hours a week** (including weekends) do you spend on: (Put "0" hours if the activity does not apply to you.)

A. Homework and studying total: hours a week

B. Part-time work for pay total: hours a week

C. Sport (e.g., school teams, swimming lessons, community sport teams) total: hours a week

5. Last night, what time did you go to sleep? Hour : Minute am pm

6. This morning, what time did you wake up? Hour : Minute am pm

7. Was the amount of sleep you got last night normal for you, less than normal or more than normal for a SCHOOL NIGHT?

Normal Less than normal More than normal

8. Was the amount of sleep you got last night normal for you, less than normal or more than normal for a night when you DON'T have school the next day?

Normal Less than normal More than normal

9. Why did you choose to attend this school?

	Strongly Agree	Agree	Disagree	Strongly Disagree
A) It is near where I live	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) My family wanted me to go to this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C) Other friends or relatives were going to this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D) I like the courses I can take at the school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E) Sports at the school (e.g., sport teams)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F) Other activities at the school (e.g. clubs, cultural activities)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G) I like the time schedule at this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H) Other reason (State: <input type="text"/>)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. How would you rate your own progress at school?

Excellent Good Fair/Average Having Difficulty

11. Is there anything else you would like to say about your experience at the school this year?

For Eastern Commerce Students only.

12. Since the Late Start program was introduced at Eastern this year, do you find it easier to come to school, is there no difference at all, or is it more difficult to come to school?

Easier to come to school No difference from last year More difficult to come to school

Please comment on your answer (thinking specifically of the impact the later start has had on you or your friends and family).

Thank you for your participation!

Before handing in the completed survey, please make sure you have removed the cover sheet *carefully* with your name on it.



APPENDIX B

SURVEY ITEM RESPONSES

Table 1: Q1

1. How do you feel about your school?		All the time/often	Sometimes	Never/rarely	Total
A) I enjoy school.	Eastern Commerce	149 (50.9%)	110 (37.5%)	34 (11.6%)	293
	School ABC	209 (56.2%)	128 (34.4%)	35 (9.4%)	372
B) My school is a friendly and welcoming place.	Eastern Commerce	147 (50.5%)	101 (34.7%)	43 (14.8%)	291
	School ABC	243 (65.7%)	94 (25.4%)	33 (8.9%)	370
C) My school building is an attractive and great place to learn	Eastern Commerce	115 (40.4%)	97 (34.0%)	73 (25.6%)	285
	School ABC	176 (48.4%)	123 (33.8%)	65 (17.9%)	364
D) I get along well with other students in my school.	Eastern Commerce	207 (71.9%)	59 (20.5%)	22 (7.6%)	288
	School ABC	271 (74.2%)	72 (19.7%)	22 (6.0%)	365
E) I feel accepted by students in my school	Eastern Commerce	205 (71.2%)	60 (20.8%)	23 (8.0%)	288
	School ABC	275 (74.7%)	67 (18.2%)	26 (7.1%)	368
F) I feel accepted by adults in my school.	Eastern Commerce	197 (68.4%)	64 (22.2%)	27 (9.4%)	288
	School ABC	277 (74.7%)	66 (17.8%)	28 (7.5%)	371
G) Extra help is available at this school when I need it	Eastern Commerce	197 (67.7%)	68 (23.4%)	26 (8.9%)	291
	School ABC	270 (74.0%)	80 (21.9%)	15 (4.1%)	365

Table 2: Q2

2. How often do you take part in the following types of activities outside of school?		Weekly	Monthly	A few times this year	Never	Total
A) Arts (e.g., visual arts, drama, dance)	Eastern Commerce	31 (10.7%)	34 (11.7%)	80 (27.5%)	146 (50.2%)	291
	School ABC	61 (16.5%)	34 (9.2%)	100 (27.1%)	174 (47.2%)	369
B) Cultural Group Activities	Eastern Commerce	21 (7.3%)	33 (11.5%)	81 (28.2%)	152 (53.0%)	287
	School ABC	19 (5.2%)	33 (9.0%)	132 (35.9%)	184 (50.0%)	368
C) Music	Eastern Commerce	37 (12.8%)	25 (8.7%)	51 (17.65)	176 (60.9%)	289
	School ABC	54 (14.6%)	25 (6.8%)	66 (17.9%)	224 (60.7%)	369
D) Clubs	Eastern Commerce	38 (13.3%)	33 (11.5%)	71 (24.8%)	144 (50.3%)	286
	School ABC	53 (14.3%)	36 (9.2%)	92 (24.9%)	189 (51.1%)	370
E) Religious activities	Eastern Commerce	50 (17.5%)	32 (11.2%)	60 (21.1)	143 (50.2%)	285
	School ABC	64 (17.3%)	30 (8.1%)	91 (24.7%)	184 (49.9%)	369
F) Sports (e.g., swimming lessons, community sport teams)	Eastern Commerce	123 (42.4%)	41 (14.1%)	54 (18.6%)	72 (24.8%)	290
	School ABC	117 (31.8%)	60 (16.3%)	88 (23.9%)	103 (28.0%)	368
G) Volunteer activities	Eastern Commerce	44 (15.25)	58 (20.05)	112 (38.6%)	76 (26.2%)	290
	School ABC	69 (18.6%)	47 (12.7%)	132 (35.6%)	123 (33.2%)	371
H) Leadership programs	Eastern Commerce	24 (8.3%)	37 (12.8%)	79 (27.4%)	148 (51.4%)	288
	School ABC	23 (6.2%)	27 (7.3%)	81 (21.9%)	239 (64.6%)	370

Table 3: Q3

3. On a regular school day, how much time do you spend on the following activities?		None	Less than one hour	1-2 hours	More than 2 hours	Total
A) Household chores	Eastern Commerce	30 (10.3%)	161 (54.6%)	76 (26.0%)	25 (8.6%)	292
	School ABC	46 (12.7%)	163 (45.2%)	120 (33.2%)	32 (8.9%)	361
B) Looking after brothers, sisters, and/or family members	Eastern Commerce	119 (41.0%)	62 (21.4%)	53 (18.3%)	56 (19.3%)	290
	School ABC	162 (43.2%)	86 (23.3%)	49 (13.2%)	75 (20.2%)	372
C) Helping with a family business	Eastern Commerce	155 (53.8%)	61 (21.2%)	49 (17.0%)	23 (8.0%)	288
	School ABC	208 (56.5%)	65 (17.7%)	57 (15.5%)	38 (10.3%)	368
D) Watching TV	Eastern Commerce	39 (13.4%)	70 (24.1%)	98 (33.7%)	84 (28.9%)	291
	School ABC	51 (13.8%)	106 (28.6%)	139 (37.6%)	74 (20.0%)	370
E) Playing computer/video games	Eastern Commerce	61 (20.8%)	67 (22.9%)	75 (25.6%)	90 (30.7%)	293
	School ABC	82 (22.2%)	104 (28.1%)	85 (23.0%)	99 (26.8%)	370
F) Spending time on the internet	Eastern Commerce	12 (4.1%)	67 (22.8%)	89 (30.3%)	126 (42.9%)	294
	School ABC	13 (3.5%)	74 (20.2%)	119 (32.4%)	161 (43.9%)	367
G) Playing sports and recreational activities	Eastern Commerce	56 (19.4%)	51 (17.7%)	79 (27.4%)	102 (35.4%)	288
	School ABC	79 (21.4%)	119 (32.2%)	102 (27.6%)	69 (18.7%)	369
H) Religious/faith activities	Eastern Commerce	117 (41.9%)	95 (34.1%)	48 (17.2%)	19 (6.8%)	279
	School ABC	186 (51.4%)	90 (24.9%)	55 (15.2%)	31 (8.6%)	362
I) Other leisure activities (e.g., going to movies, talking on the phone, listening to music, going to the mall, hanging out with	Eastern Commerce	17 (6.3%)	44 (16.3%)	72 (26.7%)	137 (50.7%)	270
	School ABC	25 (7.1%)	77 (21.9%)	110 (31.3%)	140 (39.8%)	352

Table 4: Q4

4. About how many hours a week (including weekends) do you spend on:		0	1-3 Hrs	4-6 Hrs	7-9 Hrs	10-12 Hrs	13-15 Hrs	16-18 Hrs	19-21 Hrs	22+ Hrs
A. Homework and Studying	Eastern Commerce	23 (8.6%)	70 (26.1%)	52 (19.4%)	26 (9.7%)	58 (21.6%)	17 (6.3%)	2 (0.7%)	10 (3.7%)	10 (3.7%)
	School ABC	21 (5.7%)	73 (19.7%)	79 (21.3%)	41 (11.1%)	63 (17.0%)	36 (9.7%)	10 (2.7%)	18 (4.9%)	30 (8.1%)
B. Part-time work for pay	Eastern Commerce	153 (60.0%)	6 (2.4%)	12 (4.7%)	6 (2.4%)	12 (4.7%)	16 (6.3%)	9 (3.5%)	12 (4.7%)	29 (11.4%)
	School ABC	239 (67.3%)	11 (3.1%)	12 (3.4%)	8 (2.3%)	23 (6.5%)	10 (2.8%)	12 (3.4%)	10 (2.8%)	30 (8.5%)
C. Sport (e.g., school teams, swimming lessons, community sport teams)	Eastern Commerce	75 (30.4%)	44 (17.8%)	43 (17.4%)	10 (4.0%)	30 (12.1%)	14 (5.7%)	5 (2.9%)	10 (4.0%)	16 (6.5%)
	School ABC	125 (35.5%)	77 (21.9%)	45 (12.8%)	33 (9.4%)	33 (9.4%)	14 (4.0%)		9 (2.6%)	16 (4.5%)

Table 5: Q5 and 6

5. and 6. Weekday Total Sleep Hours	Less than 1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	7 hrs	8 hrs	9 hrs	10 hrs	11 hrs or more
Eastern Commerce	1 (0.4%)	1 (0.4%)	2 (0.7%)	8 (2.9%)	19 (6.8%)	43 (15.4%)	57 (20.4%)	66 (23.6%)	63 (22.5%)	18 (6.4%)	2 (0.7%)
School ABC	3 (.8%)	5 (1.3%)	2 (0.5%)	16 (4.3%)	30 (8.1%)	61 (16.4%)	98 (26.4%)	102 (27.5%)	43 (11.6%)	5 (1.3%)	6 (1.6%)

Table 6: Q9

9. Why did you choose to attend this school?		Strongly Agree	Agree	Disagree	Strongly Disagree	Total
A) It is near where I live	Eastern Commerce	57 (20.3%)	119 (42.3%)	65 (23.1%)	40 (14.2%)	281
	School ABC	74 (19.8%)	126 (33.8%)	101 (27.1%)	72 (19.3%)	373
B) My family wanted me to go to this school	Eastern Commerce	40 (14.4%)	84 (30.2%)	101 (36.3%)	53 (19.1%)	278
	School ABC	54 (14.6%)	118 (32.0%)	140 (37.9%)	57 (15.4%)	369
C) Other friends or relatives were going to this school	Eastern Commerce	40 (14.6%)	116 (42.3%)	65 (23.7%)	53 (19.3%)	274
	School ABC	45 (12.2%)	113 (30.5%)	131 (35.4%)	81 (21.9%)	370
D) I like the courses I can take at this school	Eastern Commerce	35 (12.6%)	134 (48.2%)	68 (24.5%)	41 (14.7%)	278
	School ABC	62 (16.7%)	191 (51.3%)	80 (21.5%)	39 (10.5%)	372
E) Sports at the school (e.g., sport teams)	Eastern Commerce	71 (25.4%)	81 (29.0%)	78 (28.0%)	49 (17.6%)	279
	School ABC	32 (8.8%)	87 (24.0%)	158 (43.6%)	85 (23.5%)	362
F) Other activities at the school (e.g., clubs, cultural activities)	Eastern Commerce	20 (7.2%)	74 (26.6%)	119 (42.8%)	65 (23.4%)	278
	School ABC	28 (7.7%)	105 (28.7%)	151 (41.3%)	82 (22.4%)	366
G) I like the time schedule at this school	Eastern Commerce	108 (39.4%)	94 (34.3%)	37 (13.5%)	35 (12.8%)	274
	School ABC	62 (17.2%)	177 (49.0%)	82 (22.7%)	40 (11.1%)	361

Table 7: Q10

10. How would you rate your own progress at school?	Excellent	Good	Fair/ Average	Having Difficulty	Total
Eastern Commerce	44 (15.8%)	135 (48.6%)	83 (29.9%)	16 (5.8%)	278
School ABC	61 (16.8%)	178 (48.9%)	102 (28.0%)	23 (6.3%)	364

