

To: Dr. Mark Fredisdorf  
From: John A Glimco  
RE: Request from the School Board  
Class Size and Student Achievement at Pleasantdale Middle School  
Date: November 12, 2014

At the October 2014 Board Meeting, the request was made for data to demonstrate that the larger class sizes at the Middle School were not impacting student achievement and growth. The issues initiated from concerns with 5<sup>th</sup> Grade Classes, in which there are classes of 30 students in Above Level Math, Science, and Spanish (all same students), and extended to other grade levels in which larger classes were expressed to be of equal concern.

Scheduling at the Middle School has traditionally been based on using an enrollment guideline of 25 students as a targeted classroom maximum in core curriculum, for purposes of the electronic scheduler (Skyward). That being said, there have been many classes over 25 students in past years at the middle school, as well as ranges in class size due to the unique needs of the students, the learning level of students, and instructors' schedules/availability. However, for the purpose of this report, larger classes will be identified as those exceeding 25 students.

There are 194 course sections at Pleasantdale Middle School, with the literature and composition classes being counted together as one block course. Of these classes, 19 courses have class sizes over 25, excluding Physical Education. Furthermore, of these 19 courses, 13 have at least one additional adult in the class, either as an instructional aide or co-instructor.

There are many challenges to this task. Historically, class size has been examined through countless studies, with limited consistent outcomes and many contrasting findings. In a recent published article in District Administrator, the author Luerene Johnson well captures some of the challenges with the research through the following findings:

- Class size reductions seem to be most effective in the early grades, specifically kindergarten and first grade (Whitehurst & Chingos, 2011). Focusing class size reduction efforts on these grades, then, may be more likely to affect student learning positively than reducing class size in other grades.
- Students with less effective teachers will likely benefit from having reduced class size. The learning in classrooms with more effective teachers is less impacted by class size (Whitehurst & Chingos, 2011). Providing smaller classes for less experienced teachers as they develop their teaching skills, therefore, may provide a better educational experience for students in these classrooms.
- Teachers like having small classes. Studies that report on teachers' attitudes about small classes have found very positive responses from educators. Teachers believed they cover more content in greater depth and have fewer discipline problems with small classes, though the data often did not support such beliefs (Hattie, 2005). Studies also indicate that teachers with smaller classes report less stress (Hattie).

Articles on Class Size are readily available. Three articles are referenced and included on the state School Report Card in the average class size section. In general, the data is inconclusive, with the exception of findings regarding class size in the early elementary grades, and in regard to low socio-economic, low performing students.

It is a great challenge to identify valid research locally within this time frame to demonstrate the impact, if any, on class size at the Middle School with these classes (above 25 students). Besides the relatively short time frame of this school year, there is a lack of comparable historical data to measure that truly aligns to be considered valid. In addition, learning resources, state and local assessments, and the nature of the individual learners are all new variables. Comparisons to the previous classes and students would not be valid without a clear alignment to all other variables.

To respond to the task, we identified those factors that we could measure, with some, yet limited reliability. Three areas were studied: Student classroom behavior infractions, comparing students in the current 5<sup>th</sup> grade to data from the past year of the same students; grade performance in core classes at the 5<sup>th</sup> grade in Term 1, based on class size; time on task studies conducted this year contrasting larger classes (greater than 25 students) to smaller sections of same level instruction.

### **Student Classroom Behaviors**

Student infractions of the current 5<sup>th</sup> grade were studied, comparing the first term (trimester) of 2013 infractions (referrals) to the current year.

In Term 1, 2013, there were 4 Level II offences recorded for the 4<sup>th</sup> grade (current 5<sup>th</sup> grade students.)

In Term 1, 2014, there were 4 Level II offences reported by the same class, the current 5<sup>th</sup> grade. Of these offences, 2 occurred in the locker room, one in the lunch room, one in the hallway. Additionally, there have been 13 Level I offences reported. Only 5 of these offences occurred in the classroom setting, with 2 students with 2 offences each.

### **Student Grades**

Multiple approaches were considered in utilizing student grades for the purpose of this study. Comparing each individual student's grades earned in Term 1 this year in comparison to Term 1 the previous year was initially considered, yet ruled out due to the many other variables that exist in such a study, including different instructors, new curriculum and assessments, and outside variables.

Similarly, simply comparing class grade averages from one Term was also eliminated due to the varied compositions of the classes, as well as the above items.

A more global approach to look at the possible impact class size would have on grades was identified. Term I grades for Grade Five were studied in the core curricular areas to see if there was any impact on the overall class grade average, based upon class size. The average grade of each class section was calculated and compared to like classes sections at the grade level.

The results of this comparison were inconclusive based on size of the class. For example, the largest section of On Level Composition had the highest section grade average, yet the same learners ranked fourth in Social Studies grade average. The largest section of Science had the highest grade average, and the smallest section of on level math the highest.

The one conclusion that could be drawn from the study was that the composition of the class and the nature of the learners had the greatest impact on the class grade average.

### **Time on Task**

Student engagement/on tasks behaviors were measured in randomly selected larger (above 25 students) and same instructor smaller classes. Observations were made on the same date to capture similar lessons/instruction. For this study, 12 classrooms were randomly observed, monitoring student behaviors at 30 second intervals for a total of 15 minutes. Observations were conducted by Candice Kramer. Behaviors monitored included: inattentive, uncooperative, districting others. Instructional activities during this time frame were additionally recorded, including: whole group, small group, independent. Since the times selected were random within the class period, items such as transitions between activities, moving of desks to form small groups, were also monitored, and are reflected in the results.

The results of the study:

#### **25 or less Students    Number of Adults**

85.83% on task	2
80.835 on task	2
98.33% on task	1
94.26% on task	2
88.24% on task	1
90.0% on task	2
96.1% on task	2

#### **26 or more Students    Number of Adults**

95.26% on task	1
96.53% on task	1
91.5% on task	2
98.20% on task	1
90.86% on task	2

The nature of the learners and the nature of the learning tasks have a great impact on the findings. If one was to drill deeper into this study, individual learning tasks could be isolated, with on-tasks behaviors for like tasks compared. Transitions could be eliminated to demonstrate a greater time on task in several of the class sections. At the surface, the one important finding from this study is that the students in the larger classes seemed to be equally, if not more so, engaged in instruction during the observed time periods.

Through direct observation of all classes within the building, the numerous variables are very apparent, and the impact on class size and student learning difficult to discern. Through these

observations the one item that appears to impact the class the greatest is the composition of the class, not the size. Learning levels, required supports and assistance, and other learner related elements appear to have a greater impact than the number of students in any class section.

This is not to say that we do not wish to overlook the impact class size may have, especially in lab classes. Teachers in these classes have shared preferences for balanced, similar sized classes to best utilize available lab equipment and supplies. Teachers have also shared concerns regarding technology use and troubleshooting concerns with larger classes, in relationship to smaller classes.

Overall, we have enjoyed relatively small class sizes at the Middle School, and are fortunate for the support of our community and Board. As previously addressed in other communications, we will continue to strive to best meet the needs of all learners through our developed class schedule, and will continue to seek additional support and resources, as necessary. Recommendations for the current school year include additional support for the Math and Science classes, targeting additional staffing in these subjects for the upcoming year at the 6<sup>th</sup> grade level.

We will be starting the scheduling process for the 2014-15 school year shortly in order to be able to early address staffing needs and scheduling challenges. We have many unique elements on our schedule to address, including: special education ratios/smaller class sizes; single offering classes (labs), alternating Math/Spanish, ELA blocks, Above Level/On Level, RtI, multi-grade level instructors. One of the greatest benefits as well as challenges to our School District is our size.

We accomplished a great deal this year with our schedule to address the needs of our students, including: the English Language Arts blocks, increased Math in grades 5 and 6, RtI and balanced distribution of students with specialized needs. As it should be, it is my hope to always seek to better to address the needs of our students and staff alike. Working together, we will continue to strive to best provide for our students to assure a quality and equitable education for all.