



2015-2016 NOII Case Study

School: Argyle Secondary

District: #44 North Vancouver

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Our focus for this year: Vertical Learning and Student Engagement

Scanning: Last year, a project for elementary and secondary teachers was developed to create an opportunity for teachers from both groups to work together in a Family of Schools model to learn how to build a thinking classroom. Through meetings with teachers and district staff, a theme of thinking classrooms evolved into a district wide project. This project is led by an SFU Professor who is an expert in the field of Vertical learning and thinking classrooms. The questions that guided the process: What are the big ideas? What is the next piece of learning? The big idea is how to create a classroom where all students have the opportunity to be engaged and learn in the classroom. The next piece of the learning was a five session professional development program held from September to May to learn as a group and practice and refine the strategies required to create a thinking classroom.

Focus: Following the first few sessions of the program, the Argyle Teachers started implementing Vertical Learning into the classrooms. This inquiry will determine how vertical learning changes the classroom for both teachers and students.

Hunch: In traditional classrooms, students are seated for long periods of time, often working independently. Student engagement over an eighty-minute period is often challenging for both teachers and students. Vertical learning provides an opportunity for students to work in small, randomized groups and be active participants in the classroom.

New professional Learning: Attending all five sessions with the Building Thinking Classroom Workshop team and trying the strategies of Vertical Learning in the classroom. Also, reading the book Mathematical Mindset will supplement the learning.

Taking action: In all three classrooms, two math classrooms and one Learning Assistance Centre (LAC) Room, white board spaces were increased in the room. Teachers used stick on white boards, windows, or purchased white boards for student space. The use of vertical spaces and white boards completely changed the dynamic of the class. The use of small groups and white boards created a dynamic agile space for students and teachers to interact with the curriculum. Vertical space activities were completed every lesson to reinforce the changing approach to the classroom. The classes randomized groups daily with different strategies including using playing cards for grouping or other simple grouping strategies.

Planning ahead towards the next year, all three teachers requested additional white board spaces to be installed to replace bulletin boards or unused shelving areas. The LAC room

requested white boards on wheels to use as both white boards and as a classroom divider. This model may evolve into a paperless classroom.

Checking: The impact of using vertical learning in the classrooms showed improvements in many areas. In the LAC room, shopping math was used for numeracy skills. Working in groups on these problems helped students to practice and improve their skills. Overall, assessment marks improved with the addition of vertical learning into the classroom. Students also started sharing more school talk with parents about interesting problems that they worked with in class. Students started asking their other teachers if they could also do vertical learning in their classes—teachers who were not involved in the first district cohort. Students often requested that problems be completed on white boards, often in the middle of a typical lesson, students would wait for a problem and race off to work around the room.

Overall, engagement within all classes improved as students could see and watch other students and get started at an appropriate entry point. Students also gained an overall improved understanding of how to approach a problem and how to work with other students to solve problems. From the start of the year to the end of the year, students were able to demonstrate their learning with richer written work and showing a wider variety of solutions to problems.

Students worked standing up and moving around the room for more time than in the previous model of working at their desks. This created more energy in the classroom and more cross pollination of ideas around the room, as students move, knowledge moves. This model also created flexibility as students could start at the white boards and then, when ready, return to their desks to work out a solution independently. In the LAC class, the multi-grade groupings created natural teachers who started working with the younger students in a more meaningful way. The younger students preferred to be taught by the older students in this group, changing the dynamic of how the multi-age group worked together. This approach showed the value of problem solving, and how to make the connection between curricular problems and using different strategies.

Overall, in all classes, the class culture improved. Connections were made amongst all students, including the shy students who usually would not work collaboratively with others. This model creates an easy opportunity for staff and students to have discussions about the content, while working at eye-level, and working collaboratively. Teachers also have the opportunity to check-in with students' learning while circulating amongst the groups and providing hints or suggestions, rather than solutions. The class started to change their idea of success from the individual to the group. Students grew more confident sharing their solutions, right or wrong, with the class as they learned how to communicate their thinking with the class. Education Assistants also had the opportunity to work with the class as a whole as often students with support were also working in small groups, with both adult and peer support.

Working in this format lends itself to explaining students' own learning. The majority of students, over the process of the year, developed richer connections to the adults in the room due to the more conversational approach to the classroom environment. Students who did not usually work with Education Assistants had the opportunity to work on enrichment questions or learn different strategies. The three questions about learning (Where are you going? How are you doing? and Where to next?) became every day questions as students work and thinking was visible. For students who were struggling with concepts, they were able to see what their

peers were able to do and had a clear goal of their own learning. Students were also able to reflect on their ability level as they worked in multi-ability groups and set goals for their learning. Students could see, around the room, how the work could evolve.

The four questions became an embedded part of the Vertical Learning Classroom. Students no longer worked in secrecy, and students became supporters and helpers for others. Often students would approach the adults to assist their peers to help them get ahead in the process. Students working in the vertical space, now have language to explain their thinking and show their understanding of topics.

Reflections/Advice: Be ready with Vertical Spaces in the classroom prior to jumping into the strategy. Attend a Building Thinking Classroom Workshop if possible. There needs to be enough white board/window/vertical space for groups of three to work in the room. Working on tables or desks is not the same. Students need to feel ownership of the space to feel free to learn with their peers. Be consistent with the use of vertical learning in your class. Try to use it daily to reinforce the use of random groups and working collaboratively and sharing out solutions. Don't be afraid to randomize groups, including students who usually don't work well in groups. Over time, and with some scaffolding and support, all students can be successful in this format. At the start, random groups may not be randomly set but appear random. It is scary to have all your students out of their seats wandering around the room working in groups. Trust the process.