

LEARNING MATTERS

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Randy Dueck · Chris Gudziunas · Rick Ardies

Creating

LEARNING
ENVIRONMENTS

pg. 4



Creating interactive learning environments that
establish a culture for learning



Hanover is a student-centred school division striving for excellence while developing skills and promoting values for a productive and wholesome life.

LEARNING ENVIRONMENTS



When I want to learn about something that is quite new to me and somewhat academic in nature I prefer a quiet place free from distraction where I can focus on the task at hand. When I want to learn about how those around me think I want to be able to engage in a conversation with them. When I want to learn what is going on in the world I go online to my favourite news apps. When I want to learn which fishing lures have the best action I want to be on the lake casting about and watching how they return to the boat. When I want to learn about my community I want to collaborate with my neighbours. When I want to learn about the best place for pizza in Winnipeg I Google it.

My learning is supported by a wide variety of learning environments all determined by what it is that I want to learn. That is just how it is for me in day to day life. As we are preparing Our Kids to be lifelong learners I believe we should also be very intentionally preparing them to understand how their learning environment can support their learning.

That can mean helping them to learn how to adjust their learning environments, maximize their learning environments, as well as developing the strategies to learn when the learning environment is not always conducive. Learning environments can refer to the physical space and surroundings, the safety of the environment, the level of interaction in the environment, as well as the ability to extend way beyond the physical environment using the digital environment.

Our responsibility is to help kids learn to maximize their learning environments so as to maximize their learning. I hope you will enjoy the various articles in this edition of Learning Matters (which happens to be a learning environment of its own) as they relate to learning environments.

With gratitude,

Randy Dueck, Superintendent, CEO Hanover School Division



IN OUR SCHOOLS

OUTDOOR LEARNING ENVIRONMENT at MES

“Time in nature is not leisure time; it’s an essential investment in our children’s health...” *Richard Louv*

Our Kindergarten team met and began to think about how we could use our Mitchell Park as a new learning environment for our students on a regular basis. For the months of May and June our classes dedicated one day a week at the park. We wanted to incorporate joyful learning adventures based on curriculum outcomes while at the same time encourage students to problem solve and work cooperatively with each other.

Activities at the park included using ‘science hoops’ to look closely at nature, drawing and writing about nature and building habitats for animals out of natural loose parts like sticks, rocks, and leaves. Our students loved the time that they spent learning in the park.

As teachers we were able to provide and facilitate rich experiences where students could safely practice and develop the eight deep learning competencies in “Our Kids”.

We are looking forward to planning future adventures using our beautiful community space as a classroom!

- Jennifer Thomson and Phylis Wiebe, MES

LEARNING POSSIBILITIES THROUGH ENVIRONMENT

“How will the environment mirror an image of the child that is rich, powerful and competent?”

(Susan Fraser, “Authentic Childhood” pg. 118)



Everything that we do and say as teachers is a reflection of what we believe about children. How do our learning environments make this belief public?

As we planned for the summer institute session for the new early years teachers, we wanted to create a space that would make our beliefs as early years coaches visible. Our work began with a strong image of the child/learner as capable, resilient, vulnerable, intelligent, playful, creative and full of curiosity about the world around them. We wanted to invite our teachers into a classroom environment, where they would feel emotionally and intellectually engaged. How could we create an environment that would support communication, collaboration, creativity, character, critical thinking and citizenship, all of which define what it means to be a deep learner?

We had been thinking about the importance of bringing elements of nature into the classroom. Nature ignites children’s curiosity and sense of wonder. Nature opens our classroom and connects us to our world. Bringing the outside in creates an invitation to wonder and questions.



“Nature opens our classroom and connects us to our world. Bringing the outside in creates an invitation to wonder and questions.”

The physical arrangement of furniture intentionally created opportunity for collaboration and communication. We all have stories to tell and it is through hearing and telling stories that we participate in authentic learning. Provocations such as picture books and loose parts were the springboard to our storytelling. Through loose parts, we created and shared collaborative artist statements of our view of a learning community.

Emotions are intricately linked to learning through our senses. Engaging the senses through soft lighting, the fragrance of Aspen trees, understated flower arrangements,

“Engaging the senses through soft lighting, the fragrance of Aspen trees, understated flower arrangements, textured writing utensils, mirrors and purposeful use of beautiful stuff, we invited our teachers to think about the possibilities for their classrooms.”

textured writing utensils, mirrors and purposeful use of beautiful stuff, we invited our teachers to think about the possibilities for their classrooms.

The learning environment created in the Deeper Learning classroom produced joyful responses from both students and adults. Please feel free to stop by and visit our classroom at the Professional Learning Centre.

- *Kim Koop & Martha Reimer,*
Early Years Learning Coaches

CREATING LEARNING ENVIRONMENTS

Darren Kuropatwa, Director of Learning

How do we create an interactive learning environment that establishes a climate and culture for learning? I first starting thinking about learning environments in terms of the physical learning spaces in our schools. One of the Learning Coaches shared with me a conversation with a teacher who said: “Once I changed the learning environment I couldn’t teach the way I had before.” There’s a book called *The Third Teacher* that explores the connection between our physical spaces and their impact on student learning. (Parents and teachers are the first and second teachers, the third teacher is the learning space.) Throughout this issue of *Learning Matters* you’ll read examples of the interplay between the physical environment and student learning. That said, the learning environment is so much more than the physical spaces within which we all learn and teach. We can think about learning environments through four lenses that help capture this relationship between the physical and nonphysical.

LEARNER CENTRED LEARNING ENVIRONMENTS



Is your student’s learning environment learner centred? It is if you’re building bridges. Learners of all ages bring their beliefs, understandings, and cultural practices with them into the classroom. Learner centred learning environments are essentially where teachers build bridges; teaching is a bridge connecting what students bring into the classroom with the curriculum. As teachers we know our curriculum very well. To make these connections for our students we have to get to know them just as well. Learning begins by starting with where our students are.

“Learner centred learning environments are essentially where teachers build bridges; teaching is a bridge connecting what students bring into the classroom with the curriculum.”

KNOWLEDGE CENTRED LEARNING ENVIRONMENTS



If you look up the definition of knowledge you’ll find it described as a noun. Increasingly, knowledge is valuable more for what we do with it than just having it, and we’re co-constructing our understanding of our world by developing an understanding of how ideas are interconnected in knowledge networks. You can see this in action, in real time, with this musical visualization of how wikipedia is being co-created right now: <http://listen.hatnote.com>. While wikipedia is certainly not the last word on how we understand our world, you can literally see people making sense of their world as they collaboratively create it.

The knowledge we teach is outlined in the curriculum; a word whose latin origins mean “to run a race.” Learning a landscape is a stronger metaphor for a knowledge centred learning environment; we need to know more than what is there, but how all the parts of the landscape are related to each other and where we are in that landscape. We help students become knowledgeable by learning in ways that lead to understanding and transfer; we help them learn the landscape of a discipline emphasizing sense making. When students expect new information to make sense and ask questions when it doesn’t they are also engaged in metacognition which overlaps with another lens we have on learning environments.

ASSESSMENT CENTRED LEARNING ENVIRONMENTS



Assessment is often grouped into the two broad categories of summative and formative. The first comes at the end of learning, the second is used to help students make course corrections and deepen their understanding through a series of learning experiences. While we can make formative use of summative tests (see bit.ly/FUSTests) learning environments that are assessment centred are of that second kind. These are environments where teachers continually learn about what their students are thinking and understanding.

Student thinking is made visible so that teachers can provide feedback minute by minute, day by day, week by week, and month by month. (There are lots of ways using technology can really help here!) Keep in mind though, feedback isn't feedback if it isn't actionable; that's judgement. And in terms of grading, it's wrong to grade a student while they are still learning. Grades should represent what a student has learned at the end of learning. (This is part of a larger discussion about assessment. Ring me up sometime, I'd love to talk to you about it.)

COMMUNITY CENTRED LEARNING ENVIRONMENTS



Community centred learning environments create a culture for learning; a way of thinking, behaving, and working together. What are the norms for people learning from one another and continually attempting to improve in your classroom? That's the classroom culture. Strong community centred learning environments make it safe to take risks sharing thinking, where mistakes are seen as learning opportunities rather than exposing our vulnerabilities.

TL;DR

Learner centred learning environments connect students previous life experiences with the curriculum. As Superintendent Randy Dueck often says: "We want to introduce our student to the curriculum the way we would introduce two of our dearest friends."

Knowledge centred learning environments make the implicit explicit by helping students learn with understanding how and why different facts are interconnected. Students learn the landscape rather than the running path.

Assessment centred learning environments consistently make student thinking visible. This is a good fit for leveraging digital resources. Our assessments should reflect the goal of learning for understanding and not focus primarily on tasks that can be accomplished by memorizing facts and formulas.

Learning environments should also promote a sense of community with shared norms that value learning and high standards. They are safe spaces founded on a culture of questioning, respect, and risk taking.

Article is continued on page 8



THE SPACE BETWEEN a Student's Perspective



I walk by her class everyday. I don't have her as a teacher this semester (Which sucks. I hate timetables.), but her room always catches my eye and makes me wonder. I hear other students talking about the classrooms they occupy, talking about them like chambers. But when they talk about her room, their talk is different.

She has a whole bunch of different chairs in her room, and they are set up so that students have a chance to rotate through and sit on each one, giving us the chance to talk to different kids throughout the year. Don't get me wrong, for some, a chair is a chair, but for others a chair that rocks, or tilts, or is higher than the rest, seems to become the cure for what has bored them their entire school life. She even

makes room for those kids who want to stand and work, telling us that for some, being on their feet helps them to be in their body as well as their mind. I used to think that she was just crazy that way, you know? But having had the chance to be in her room and experience the difference has made me reconsider.

My dad's an architect and he says that for him, his best thinking happens when he is in his creative space. I asked what that space looked like, but he got all deep on me and said, "a window, some floor and a challenge provide the richest soil to plant and grow." When I pushed him, he said it was less about the space itself and more about how it was used, though he did say that sometimes people just need a new space where they can

think differently. That kind of made sense to me when I considered it in light of her class; it was a box room (boring...), just like all the other box rooms in the school, but she was using it differently through the simple addition of chairs and specific learning locations. That and the fact that she was never afraid to change things up; seating, poster boards, where the 'front' of the room was, everything. If a person didn't know any better it would all seem quite random, but I can see, and other students can too, that she is particular about her classroom. Now that I think about it, I'm sure that my dad and her are in cahoots. Education meets Architecture. Crazy...

I think though in the end, what I like most about her classroom is her. Well, and how she makes me feel in it. Sure the chairs and locations that she has set up are cool. And being able to stand and walk a bit without having 'the hounds' released on you is great too, but she's a teacher that you want to talk to and listen to and share with, you know? For me it is more about the space between her and me, the connection that we have that makes her class so cool. I can't wait until second semester.

- Brett Schmall, Learning Coach

CURATING A COMPELLING LEARNING SPACE

How we set up our classrooms sends a deep message of respect to the learner. It says, "I care about you. I want you to be in a space that is nurturing and pleasant to be in. I want you to feel at home, inspired and valued." (Kath Murdoch, "Power of Inquiry" p. 33)

Every fall, teachers across all grade levels return to their classrooms. As they get ready to welcome the students that will come through their doors they ask themselves, "What kind of learning environment do I want for my students?" By learning environment we are considering the kind of classroom culture we want to establish. We are wondering what would be compelling

to our students and what physical environment would best promote learning. Asking what would provoke learning for our students pushes us to contemplate what we could do differently than we have done before. When our students enter our classrooms we want them to sense an invitation to learn, to be ready to inquire into their wonderings about curriculum and their own passions and interests.

Other questions to consider:

- How can we involve students in the design of the learning space?
- How can our classrooms be inclusive for all our students?



- How can we make our learning environments flexible to adapt to a variety of learning needs?

The learning classrooms that are the most compelling, the most inspiring and that lean the most toward inquiry are those that are designed and curated by teachers who see the connection between the physical space and learning. ("Power of Inquiry" p. 33)

- Barb Galessiere, Charmaine Mackid, and Russ Dirks, Middle Years Learning Coaches

CLASSROOM LEARNING ENVIRONMENT

What Does Your Classroom Learning Environment Say About What You Value?



Try walking into your classroom sometime with fresh eyes and look around. Ask yourself, “How does this learning environment reflect who I am as an educator and what I value about my students?” The steps in the journey vary but the impact on mindset for both teachers and students so far has been positive and powerful!

Gr. 1/2 teacher Jennifer Blair at New Bothwell School (all pics are of her classroom) did lots of pondering on this over the past year and has now transformed her classroom environment to better reflect her beliefs about children. The transformation has been exciting for both Jen and her students...best of all, the students are showing engagement in joyful learning!

Here’s what Jen had to say... “Freedom is a word I would use when describing this journey in my teaching career. I had started to feel restricted by the environment in my classroom and was looking for more. I wanted parents and students to walk into my room and know that I believed in collaboration and problem solving. I wanted my room to support my teaching and create an inviting setting to foster learning. My students seem to be

enjoying this new environment because they have room to explore, create and develop skills using what they are interested in.”

Now what about your own classroom? I’m talking about not only the physical environment but also the social-emotional environment, together being that “third teacher” we sometimes speak about. If the eight competencies of Our Kid are indeed modern ingredients for life and actually define what it means to be a deep learner, this becomes foundational for determining our values as educators. Picture a traditional classroom setup...does this fully represent the value of the teacher as being seen as a co-learner and students as collaborators? Does it support inquiry, play, discovery, student voice and agency valued by us as pedagogues? If it doesn’t, then what does? David D. Thornburg’s article titled “*Campfires in my Cyberspace: Primordial Metaphors for Learning in the 21st Century*” gives the following metaphors to consider when shaping an environment: the campfire where historically, storytelling as a means of teaching took place, the existence of a watering hole where humans needed to

gather at a central source for water but also shared news and exchanged ideas...think of it as peer teaching and sharing of discoveries and dreams, and the cave-like learning environment which provided some seclusion or quiet moments in a day to reflect or to settle down with a great book!

As play is the most natural way in which people of all ages learn, consider the metaphor of a sandpit where one can experiment with materials and ideas without worry of mess or damage. Finally, there is the metaphor of a mountain top where celebrating and sharing of learning occurs.

No matter what reference you give the spaces, why not consider environmental transformations that reflect what you value about children and support the pedagogues that you believe will inspire and support the eight competencies of deeper learning. Leveraging that “third teacher” may just lead to meaningful, joyful learning for both you and your students, just as did for teacher Jennifer Blair!

- Rhonda Kubanek, Learning Coach

These four lenses on learning environments have a dynamic relationship with each other as illustrated below.



This is also how people learn. In the context of a learning community we surface students preconceptions, help them develop knowledge networks, and engage them in metacognition at all stages of learning.



And as you may recall, this is also why inquiry is such a powerful pedagogical practice; it's how we learn.

Community :: Learner :: Knowledge :: Assessment

Community :: Preconceptions ::
Knowledge Networks :: Meta Cognition

Inquiry :: Provoke :: Explore :: Reflect

“Once I changed the learning environment ...”

You can change the learning environment without changing the furniture. But if you've got the furniture, use it in ways that promotes the kinds of learning described above.

We (the Learning Coach team and I) spent the better part of a year looking at the space of a typical classroom through the lenses of Pedagogical Practices, Learning Partnerships, Leveraging Digital, and Learning Environments. We read. Lots. And we talked. With lots of people. Now we're putting it into practice in the Deep Learning Lab at the Professional Learning Centre. The furniture in the room is designed for a class of 30 students learning in the ways I've just described. Stop by for a visit and check out the classroom.

FOSTERING THE SCOUT MENTALITY at the SRSS



One only has to look at media coverage of the American election to see that critical thinking is not high on the priority list in significant parts of our society. Complex issues are often reduced to slogans and memes, and intelligent discourse is replaced with thirty second shouting matches. Nuance and reason, in this context, is rarely evident. Yet, as teachers who want to encourage deeper learning in our students, we need to find ways of creating an atmosphere where critical thinking is not only evident on occasion, but actively encouraged. In other words, we need to create a classroom atmosphere that's the complete opposite of a bloodthirsty CNN panel discussion.

In a recent Ted Talk entitled, “Why You Think You're Right, Even If You're Wrong,” Julia Galef points out that clear thinking depends not so much on learning about, say, logic and rhetoric, (although that has value, too), but on an emotional mindset. She describes these two mindsets as “Soldier” or “Scout.” The soldier, like the political pundit, is closed off to new information and seeks to defend to the death what she thinks she already knows. The scout, on the other hand, is curious and seeks to get an accurate understanding of a situation even if it makes her uncomfortable. “We need to learn how to feel proud, rather than ashamed, when we notice we might have been wrong about something,” says Galef.

As a high school English teacher, I teach my

students how to construct good arguments and avoid logical fallacies, but what I've learned is that it's just as important for students (and all of us for that matter) to learn how to be wrong—and to be good with it—as it is to learn how to defend a particular position. We need to model that it's okay to be wrong, and it's okay to change your mind. As teachers we can try to ask students not for answers, or even opinions on a topic, but rather what questions they have about it. On occasions where we do ask direct questions, students should feel equally as comfortable giving the wrong answer as the right one.

Being wrong and changing your mind are essential components of learning and students need to know this. While certain media outlets may do everything in their power to model the soldier mentality that would never back down from an argument or admit an error, as teachers we need to model the scout mentality. In doing so, hopefully our students will find that discovering you were wrong doesn't mean you have failed, but have succeeded and grown and actually learned something.

- Andrew Unger, SRSS



Scan QR code to view TED talk - “Why You Think You're Right, Even If You're Wrong”

CHOCOLATE SALES AS A LEARNING ENVIRONMENT at GVS



It's that time of year where we embark on the annual Green Valley tradition of chocolate sales! During discussions on how to promote this to our students, we wanted to explore an alternative to the school-wide assembly and I offered that my Digital Film class could make promo videos.

Now, in all honesty, I didn't think much of it when I proposed this. But we decided that the winning video would be shown to our high school classes in lieu of the assembly and the middle years' students would get to see the top three during a middle years' only assembly. Now the hard part - I had to get my students on-board with this video contest...

The next day, I introduced this video contest to the students and got our Vice-Principal, Mr. Adrian, to come into class to explain the particulars so that it would create the buy-in for why this was important (it also helped that the winning group would be treated to pizza). The students got into groups and began to plan out what these promotional videos would look like. They had only two and a half classes to get all of their filming done - that's the only time that our iPad cart was available - and the chocolate and prize props wouldn't be available until the last day of filming. Students borrowed my iPad

to check out the iMovie trailer templates and other iMovie features to prepare for filming on the next day.

While this project was not something out of the ordinary for my students, as I viewed it through the lens of Deeper Learning I was able to see it a little differently. Students were thriving in the collaborative environment that this project offered and they were eager to do their best because of the 'real-world' context. On the filming days, students left our classroom confines to explore the entire school (inside and out) as their learning environment. They could be found in the library, on the play structure, in the gym (and even in the parking lot!) They came to find me to show me their progress and to ask for help when they got stuck.

It was inspiring to see these students working so hard to get their projects done in time. Further to this, students who normally were not accepted by their peers were given a safe place to belong and those who rarely participated in class activities were working hard to get those last shots filmed before the end of that last class.

This opportunity for real-world learning gave them the chance to have an impact in their school community and leveraged digital in a way that brought the student learning out of the classroom.

- Sarah Harder, Green Valley School



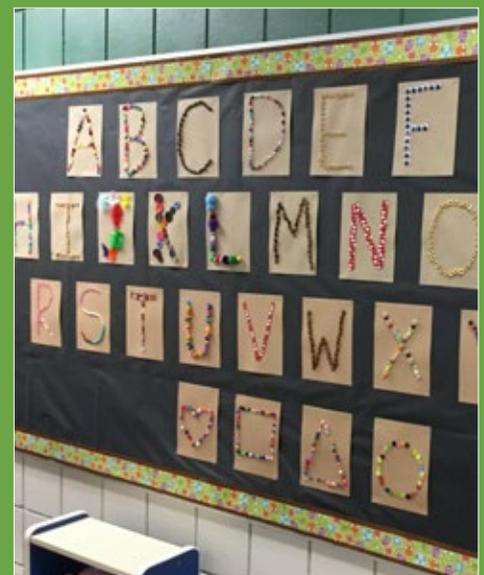
Check out this QR code to see the winning video!



STRONG CONNECTIONS at Kleefeld

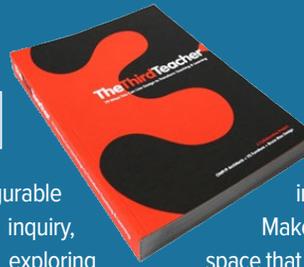
ABC wall made from loose parts during Strong Connections with both morning and afternoon classes. Students really enjoyed this centre as they were given the opportunity to pick which objects they wanted to use to build their letter. It was a lot of fun and the result is a beautiful wall made by their own hands.

- Gloria Dueck, Kleefeld School



BOOKSHELF

 SUPER'S PICK



The Third Teacher: 79 Ways You Can Use Design to Transform Teaching and Learning

By Inc. OWP/P Cannon Design, VS Furniture, and Bruce Mau Design (2010)

Take a piece of paper and fold it in two. On one side of the paper draw your current classroom or 'learning space' (a gym, library, science lab, etc.) and provide as much detail as possible. On the other side of the paper map out what you think would be the ideal learning environment for you and your students. What would that learning space look like? Would the learning space offer experiences for your students that would heighten their multi-sensory awareness? Allow for choice, risk-taking and the open sharing of ideas? Experience a sense of wonder and feel encouraged to explore, play with big ideas, share those ideas, and take responsibility for their own learning? Would your learning space facilitate small or large group discussions;

have flexible and reconfigurable spaces; include active areas for inquiry, investigation, quiet thinking and exploring technology?

Overwhelming? Yes! Need some ideas to help get you started? The Third Teacher is not a 'how to book' but a collection of ideas from educators who understand the link between how children learn and a learning environment that will help best support student learning.

The book is a collection of interviews, facts, statistics and stories presented as 79 practical design ideas that are based on what is currently being done around the world to create successful social and physical learning spaces. Each idea comes with a message or reminder that stimulates thought and conversation. As an example, idea #14 - Multiple Intelligences: Allow students time and space to choose what they want to do - their choices will illuminate their

individual strengths; or Idea #23 Make classrooms agile: A learning space that can be reconfigured on a dime will engage different kinds of learners and teachers.

The Third Teacher is combination of quotes, photos and cases studies that are easy to read and refer back to the ideas now and then to help you think of things differently when setting up your classroom or a learning activity. It is a book that will challenge the way you think, help you explore all aspects of your school's learning environments and will facilitate collaboration, critical thinking, communication and creativity amongst staff.

If you are comfortable with sharing your classroom designs with me, please send me a PDF copy of the drawing (cgudziunas@hsd.ca) and I will share the designs with our Learning Coaches. Enjoy the book!

- Chris Gudziunas, Assistant Superintendent

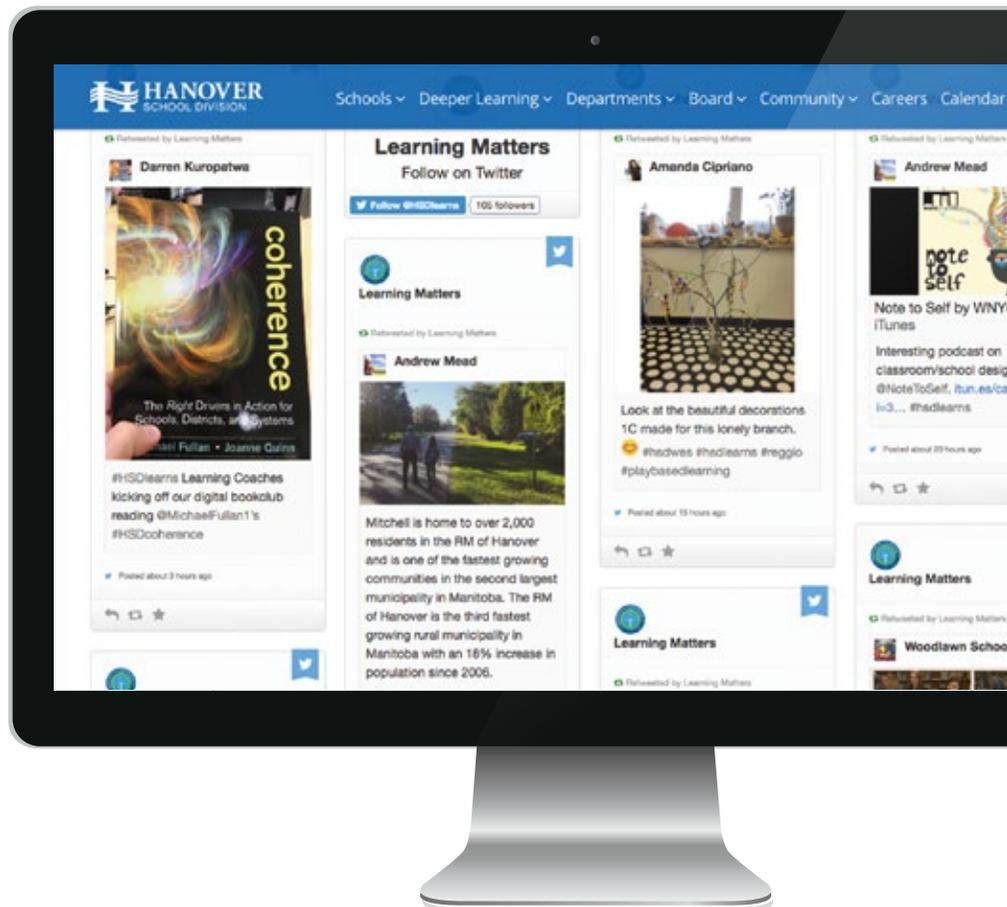
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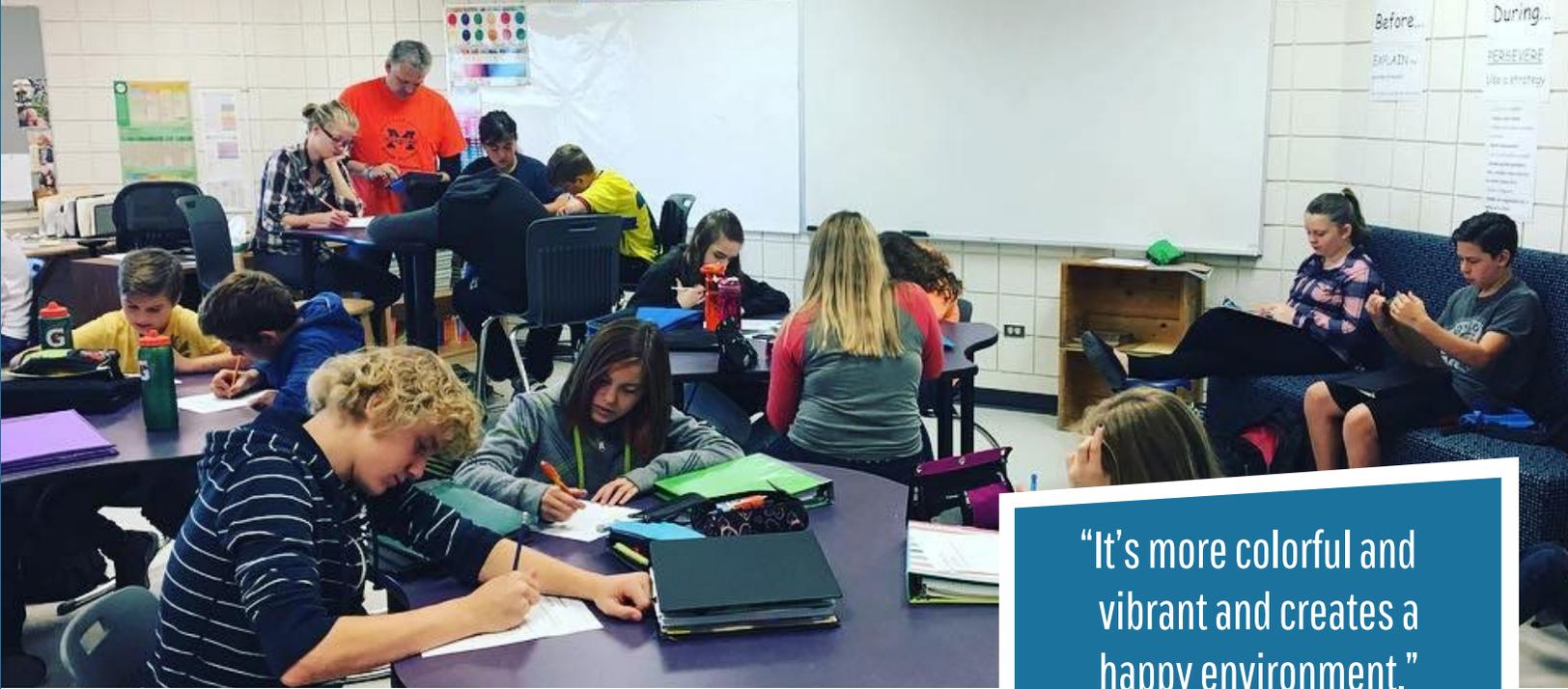
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Follow us at @HSDLearns





“It’s more colorful and vibrant and creates a happy environment.”

MMS Student

IN OUR SCHOOLS

PREPARING CLASSROOMS FOR A CULTURE OF DEEPER LEARNING at MMS

The art of thinking flourishes within an emotionally, intellectually and physically safe learning environment that is carefully constructed by the classroom teacher. Learning environments that are dynamic enable students to develop a deep understanding of core content and can use that knowledge to solve problems, think critically, communicate effectively, and be self-reflective about their learning.

In the spring of 2016, two classrooms were remodeled with these ideas in mind. Furniture was purchased that encourage students to share and move while they learn. Classrooms were retrofitted with low and high work spaces, Hokki stools (stools that wobble), and other comfortable chairs for students to use. Four desks were left in each of the classrooms and teachers noticed that students would choose the new furniture rather sitting in typical

classroom desks. Also, additional whiteboards were installed to encourage vertical learning spaces which allows for easy sharing between groups of students.

MMS students and staff agree that creating a learning space to encourage collaboration and communication helps learning.

attention and they are actively listening. I noticed a change in my students immediately in terms of their emotions, they were more alive in the classroom. Having the students choose a seat based on what they feel will create the best learning environment for them, gave them some ownership in the classroom.”

– Mr. Tufford

These rooms have been so successful that other teachers within MMS have been using the rooms to see how their students react and enjoy the space. The school will be developing a three year plan to purchase more flexible seating for other classrooms to encourage collaboration, communication and to ensure that our students have the best opportunities to become effective and deep learners.

– Andrew Mead, Mitchell Middle School

“It’s comfortable, lets you move around and helps your brain focus.”

MMS Student

“The new furniture complements what we try to do in the classroom. The ease of collaboration, the natural peer tutoring structure, and the opportunities afforded for movement within the classroom has increased engagement. If I had to be in a classroom for a full day, this is the kind of classroom I would want to be in.” – Mr. Martens

“I love the feeling I get as a teacher when I can see everyone’s face, I know that I have their

“It’s better for group work.”

MMS Student

“It suits people’s different learning styles”

MMS Student



CALENDAR

SAGE PD Day

Oct. 21

**EY/MY In-Service
SY Admin Day**

Oct. 31

School Bus Safety Week

Oct. 17-21

**Public Consultation
on Budget**

Oct. 25

**SY In-Service
EY/MY Admin Day**

Nov. 14

IN OUR SCHOOLS

CREATING A RICH LEARNING ENVIRONMENT OF NUMERACY at Southwood School

At Southwood School, we have had the pleasure of working with a group of our teachers on the components that make up a balanced numeracy program. One of these elements is a rich learning environment of numeracy. We looked at the *Laney Sammons Guided Math Framework* which emphasized the importance an environment of numeracy “environments rich in mathematical opportunities for children are essential if we want our children to develop a thorough understanding of mathematics.” An environment rich in numeracy has many components. One of these components is the physical arrangement of the classroom including the furniture, which provides students with the opportunities to collaborate and allow for mathematical conversations to develop. Many of our teachers have created a non-permanent vertical learning space within their classroom to support this collaboration and to make their thinking visible.

Another component of the numeracy environment is creating a safe learning environment for students to feel supported in their learning and willing to make mistakes and take risks. We want students to explore mathematics and develop the confidence to share their thinking in and this allows students the opportunity to learn from one

another. We also want the walls of our classroom to demonstrate the learning and math discoveries of the students and this includes anchor charts that can prompt classroom routines or strategies that have been discovered through engaging math experiences.

Finally, using math related literature in the classroom is another way to create an environment rich in numeracy. Literature can provide the beginning of an investigation or a problem solving context or provoke other math related explorations. For example, “*Amanda Beans Amazing Dream*” is an excellent book which supports multiplication.

We want our students to develop a growth mindset which can be supported and nurtured in a numeracy rich environment. We are striving for a classroom environment that surrounds students with real-life math tasks, data analysis, math walls, instruments of measure, mathematical communication, class-created math charts, graphic organizers, manipulatives, and loose parts. When we add all of these elements together it equals a rich numeracy learning environment for our students.

- Lisa Coulter, Southwood School



Hanover School Division
5 Chrysler Gate, Steinbach, Manitoba R5G 0E2
204-326-6471

Executive Editor:

Randy Dueck, Superintendent CEO

Associate Editor:

Chris Gudziunas, Asst. Superintendent

Associate Editor:

Rick Ardies, Asst. Superintendent

Managing Editor:

Bob Wiebe, Communications Manager

Article Submissions:

communications@hdsd.ca

www.hsd.ca  @HanoverSD