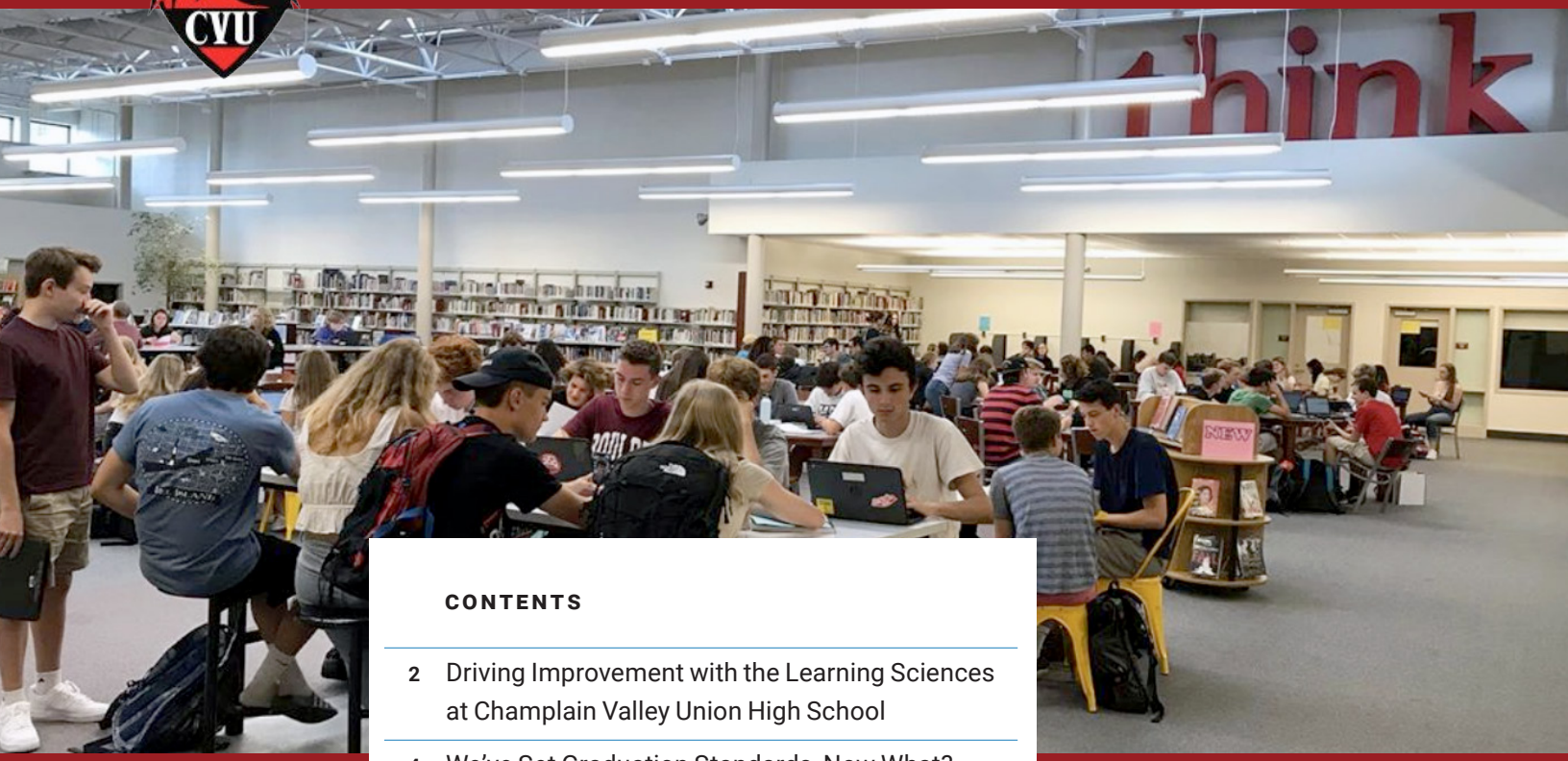
JAN 2020

MASTERY TRANSCRIPT CONSORTIUM™

mastery.org

Driving Improvement with the Learning Sciences at Champlain Valley Union High School

CHRIS STURGIS, LearningEdge



CONTENTS

Driving Improvement with the Learning Sciences at Champlain Valley Union High School

"Each semester, a group of students at Champlain Valley Union High School (CVU) in Vermont participate in redesigning school. In Think Tank, a class led by instructional coaches Emily Rinkema and Stan Williams, students visit the question of HOW schools should be designed and WHY they need to change.

In Think Tank, students learn about the brain, learning, motivation, and the latest educational research. They look at innovative models around the world as well as their own experiences to understand the design choices that are made and the impact on learning. The bookcases in Rinkema and Williams' office are filled with books used in the Think Tank class: The Art of Changing the Brain, Drive, Switch, What Schools Could Be, and Most Likely to Succeed. They are dedicated to bringing new research and ideas to the students in Think Tank...and encouraging students to seek emerging ideas themselves. (Click here to see their recommended reading.)

During the semester, students discover that learning is an active process. Learners need to be actively engaged in learning and thinking; believe they can learn (growth mindset), manage their emotional response to learning (self-regulation), and manage their thinking processes (meta-cognition). They learn about motivation theory and how to design classrooms so that students have autonomy, purpose, and opportunity for mastery. They discover that prior knowledge needs to be taken into consideration to help make connections and to make sure they have the pre-requisite skills...and if they don't, to help them develop them. Catherine, an alumnae of Think Tank explained, "I learned about how much I didn't know about learning." Beckett, another alumnae, said, "I stopped going through the motions and started to think of myself as a learner. I realized that I can make choices about what I want to learn about, not just what is going to help me get into college. I'm excited about what I learn now."

Students then select one area in which to go deeper. Josie, another alumnae of Think Tank explained, "We dived into personalized projects. Each of us tackled something that interested us and designed our own solutions to the problem." Students have looked at badging and classroom design. Several projects have looked at the stress that develops as part of the college admissions process and the shame that rejection can bring. Their ideas have contributed to changes in classroom seating, increased student mental health awareness, led to the creation of a student congress, and informed the creation of new transcript models.

The research on learning is also driving the transition at Champlain Valley Union High School to standards-based learning. As with every case study I write, there is a need to navigate the terminology used by schools. We usually hear the phrase standards-based in reference to grading (standards-referenced or standards-based) and curriculum that is based upon state standards. CVU and the Champlain Valley School District (CVSD) have developed a method of instruction and assessment they call standards-based learning. And indeed it is based on how we learn as well as what we expect students to learn. The CVSD website on standards-based learning explains it best:

Standards-based learning is not a program. It is not a system. It is not a new-fangled-next-best-thing kit. It is teaching based on what we know about the brain, about students, and about how to maximize learning. As we become more and more knowledgeable about learning thanks to education research and neuroscience, it becomes our responsibility to use this knowledge to improve what we do. That should not be a choice; when we know better, we need to do better. That means that how we teach should always be changing, just as other professionals change practice based on the newest findings in their fields.

Standards-based learning is not new at Champlain Valley Union. The high school began to incorporate brain science twenty years ago. Twelve years ago, Rinkema and Williams started down the path toward standards-based learning when they were able to take a sabbatical to better understand differentiation. The understanding that schools need to be designed around the research on learning has taken hold and led to a redesign of instruction and assessment. In fact, the entire district values what standards-based instruction means for helping students learn. This doesn't mean every teacher values it, nor that every teacher is highly skilled in the instructional and assessment practices needed to implement it effectively. What it does mean is that standards-based instruction is a core part of CVSD.

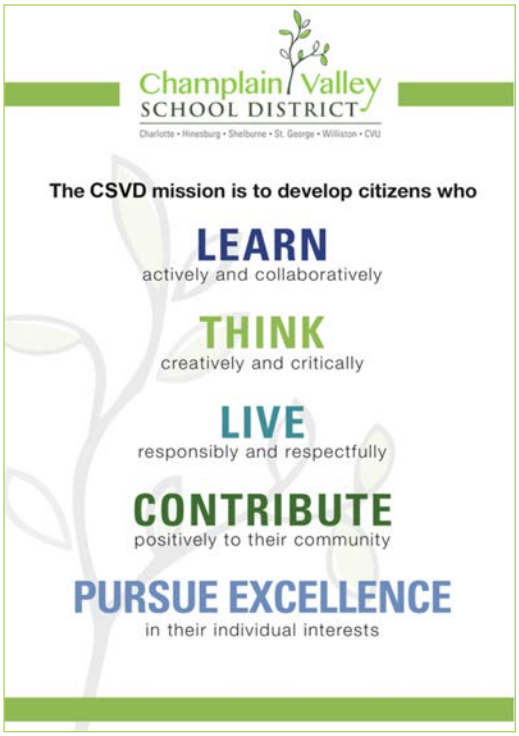
The research on how we learn is the WHY driving change and improvement at Champlain Valley Union High School.

This doesn't mean they have all the answers. However, they do have the commitment to figure it out. Rinkema and Williams noted, "It takes a lot of trust, confidence, and humility to transform schools. We have to keep investing in building a community of trust with students, families, and administrators. The ninth grade Core Program helps us to do just that. We onboard our ninth graders together in a cohort. The parents learn they can trust that we are going to take care of their kids and that their kids are going to be successful. Then, when we make changes and we have some hiccups along the way, we have enough trust, confidence, and humility to say, 'We tried it and got it wrong. But we'll figure it out and get it right.' Parents can trust us to make sure that their senior is going to be okay."

I will be quoting Emily Rinkema and Stan Williams as one voice throughout the series, as talking to them is such a quick back-and-forth that I often failed to capture who said what. Anyone who has spent time with them is sure to understand that the experience is one of engaging with tremendous brilliance, dedication and heartfelt creativity.

We've Set Graduation Standards, Now What?

"We are taking big steps forward in how we think about graduation. It makes a huge difference to think about a proficiency-based diploma compared to one that is based on completing a number of different courses. It makes us think much more intentionally about what students experience and learn during high school," said instructional coaches Emily Rinkema and Stan Williams at Champlain Valley Union High School.



In fact, all districts in Vermont are or should be thinking differently about graduation. That's because in 2020, students are expected to be graduating based on demonstrating proficiency rather than just having completed the required number of courses. In 2013, two major policies were established in Vermont that set a new direction for education: the legislature passed Act 77, the Flexible Pathways Initiative, and the State Board of Education approved Rule 2000: Education Quality Standards (EQS). Together, these policies began a transition toward a personalized, proficiency-based education system. The elements of these policies — such as personalized learning plans, flexible pathways, and opportunity to earn credits through demonstrating proficiency — create an alternative, more customized education model that can replace the one-size-fits-all approach of the traditional school model.

In traditional high school graduation requirements, states list the number of math courses, the number of science courses, etc. A proficiency-based graduation requirement sets a floor for what all students should know and be able to do. The hope is that districts pay attention to those students who are "off-track" early on — starting in ninth grade or even in middle school — to help them accelerate their learning. But if that doesn't happen, the assumption is that students should be able to access additional years of education. The goal isn't to prevent students from graduating if they don't have the skills. It's a form of a promise.

We will help you build the skills you need to be successful … even if it takes more time. You might also call it accountability.

Rinkema and Williams commented, "Vermont's state policy has allowed us the freedom to keep pushing forward. They've offered consistent direction and opportunity to learn from other districts with effective models. The state hasn't been bureaucratic or heavy handed. What they emphasize is that we clarify the graduation standards and show how the high school experience is connecting to those standards."

For districts that want to take advantage of the state policies (there are of course some districts doing the minimal and hoping it will all go away), one of the important steps is to clarify exactly what knowledge and skills they expect students to develop. Personalized, proficiency-based systems may still use credits and courses. However, it is important to define the graduation expectations. This often starts with developing a graduate profile that can then be translated into a core set of graduation standards. Some districts are thinking of this as a foundational level of proficiency or credit. Advanced courses and/or recognition of higher levels of proficiency may be demonstrated through Advanced Placement, a project completed through an internship at a technology company, remaking an engine at a job at a car mechanics shop, or pursuing a passion project such as passing local regulation to eliminate the use of plastic bags. (Please note: the Mastery Transcript is being designed to recognize foundational and advanced mastery credits. It's important for students to be able to distinguish themselves, whether in school academics or other personalized interests developed beyond the school walls.)

Champlain Valley School District (CVSD) engaged the community to create a mission statement that is about much more than meeting all the academic standards. They want graduates of CVSD to be:

- citizens who **LEARN** actively and collaboratively,
- **THINK** creatively and critically,
- **LIVE** responsibly and respectfully,
- **CONTRIBUTE** positively to their community, and,
- **DEVELOP EXCELLENCE** in their individual interests

After developing the mission statement, the next step was to create the graduation standards. Champlain Valley School District created fourteen academic graduation standards. A fifteenth graduation standard is the expectation that students have learned to learn and have the habits of learning that will help them be successful in college, careers, and their lives. These graduation standards are currently being revised based on student data and teacher feedback, so may look different by the beginning of next year.

Champlain Valley Union High School
Graduation Standards 2019–2020

Creative and Practical Problem Solving (Academic)

a. Generate a variety of solutions, supported by evidence.
b. Interpret information and derive meaning through the use of inference, empathy, metaphor, or imagination.
c. Frame questions, make predictions, experiment with possibility, and design strategies
d. Develop and use generalizations, models, or abstractions.
e. Set goals, make informed decisions, and take constructive risks.

Clear and Effective Communication (Academic)

a. Understand and use discipline-specific vocabulary.
b. Demonstrate organized and purposeful communication.
c. Adjust communication to suit the purpose, context, and audience.
d. Demonstrate standard conventions of expression including oral, written, performed, and emerging technologies.
e. Participate and collaborate effectively and respectfully to enhance the learning environment.

Informed and Integrative Thinking (Academic)

a. Use evidence and reasoning to effectively support ideas or solutions.
b. Identify main and supporting ideas, patterns, trends, clues and relationships in sources of information.
c. Analyze, evaluate, and synthesize information and perspectives to build understanding.
d. Evaluate the accuracy, bias, and usefulness of information.

Self Direction (Habits of Learning)

a. Take initiative in, and responsibility for learning.

Learning Targets:

→ **CVUHabit:** I attend class, and I have the materials and mindset to learn.
→ **CVUHabit**: I reflect on my actions, choices, and strategies and how they affect my learning.
→ **CVUHabit**: I communicate questions, ideas, stuck points or conflicts.

CVU has put into place many of the pieces necessary to create a high school experience that will guide every student in developing all fifteen of these graduation standards.

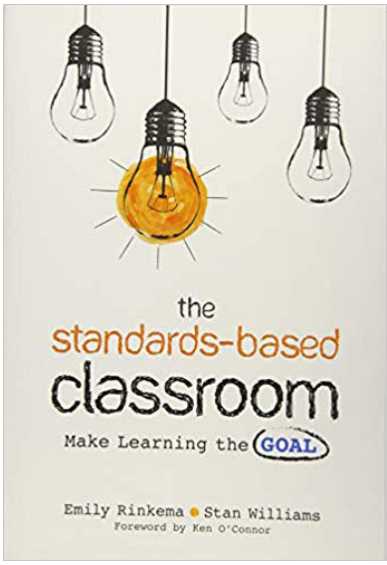
- Every teacher is familiar with the CVU learning model (called standards-based learning) and most, but not all, are actively developing their capacity to provide learning experiences and instruction.
- Common curriculum documents (using a curriculum framework of Know-Understand-and-Do) and agreed upon learning targets and scales for all common courses have been developed to create consistency across the school.
- Learning targets have been tagged within the JumpRope grading book to the graduation standards so that students, parents, and teachers can see where progress is being made and where more attention is needed.
- Standards-based grading has been implemented using a scale of 1-4, with the 3 being the target, and these scores are tracked and reported in JumpRope.

Currently, a strong emphasis is being placed on gathering and calibrating evidence in order to ensure the integrity of the data. Many of the weekly professional learning communities are focused on this goal, with teachers designing assessments, looking at student work, and revising their targets and scales. The next step will be to analyze the data in early 2020 to determine where students are across disciplines and over time, and to set school-wide goals for the following year.

Although there has been progress in changing how the high school operates to make sure that students are fully developing the skills outlined in the graduation standards, they're not done yet. CVU reminds their team and community, "*[W]e have a long way to go before we can feel confident saying students have shown proficiency in our graduation standards. The work will be complex, difficult, and confusing, but our students are worth it.*"

Yes, their students, and yours, are absolutely worth it.

Starting with the Big Blue Head: Standards-Based Learning at Champlain Valley Union



Every time I glance at the cover of the book "The Standards-Based Classroom: Make Learning the Goal" by Emily Rinkema and Stan Williams, I imagine the day when every district has written a book that outlines their beliefs about how students learn and the model of teaching.

I imagine the day when districts and schools have deep capacity in the research on learning and use it with utmost intentionality to make decisions.

I imagine students, parents, and new teachers reading the book (why can't we write one for the elementary school level?) to become familiar with the learning model and understand how districts and schools are operating in ways that reinforce learning. And when they aren't, in raising the question, *Are we really doing what is best for kids and their learning?*

I recommend reading *The Standards-Based Classroom: Make Learning the Goa*l to understand the approach being used at Champlain Valley School District (CVSD). You may not end up adopting it, but the book will sharpen your thinking about designing a comprehensive learning model. It will certainly help you understand what it means to develop a learning model for your mastery-based (or competency-based or proficiency-based) system. I'm going to draw from the book in this article, and I'll mark the pages as I go along.

The Culture of Champlain Valley Union High School

Any learning model is rooted in the culture of a school and how well suited it is to the students, parents, and community it serves. The primary feature of the school culture at Champlain Valley Union High School (CVU) is trust. For a large school serving about 1,400 students, they've been able to build high levels of trust among students, among teachers, and between students and teachers. There are only three school rules: Take care of yourself; Take care of each other; Take care of this place. Hall passes aren't required. There are free blocks instead of study halls. If for any reason classes are canceled, students are free to find a way to spend their time. Students can wear hats, and they can eat and drink in class.

The high levels of trust have been invaluable in shifting toward an education model that focuses on learning and reduces the emphasis on ranking students. It's also been a precious resource in implementation when things don't go as expected. It's safe to say that trust is one of the ingredients of creating an organizational culture of learning.

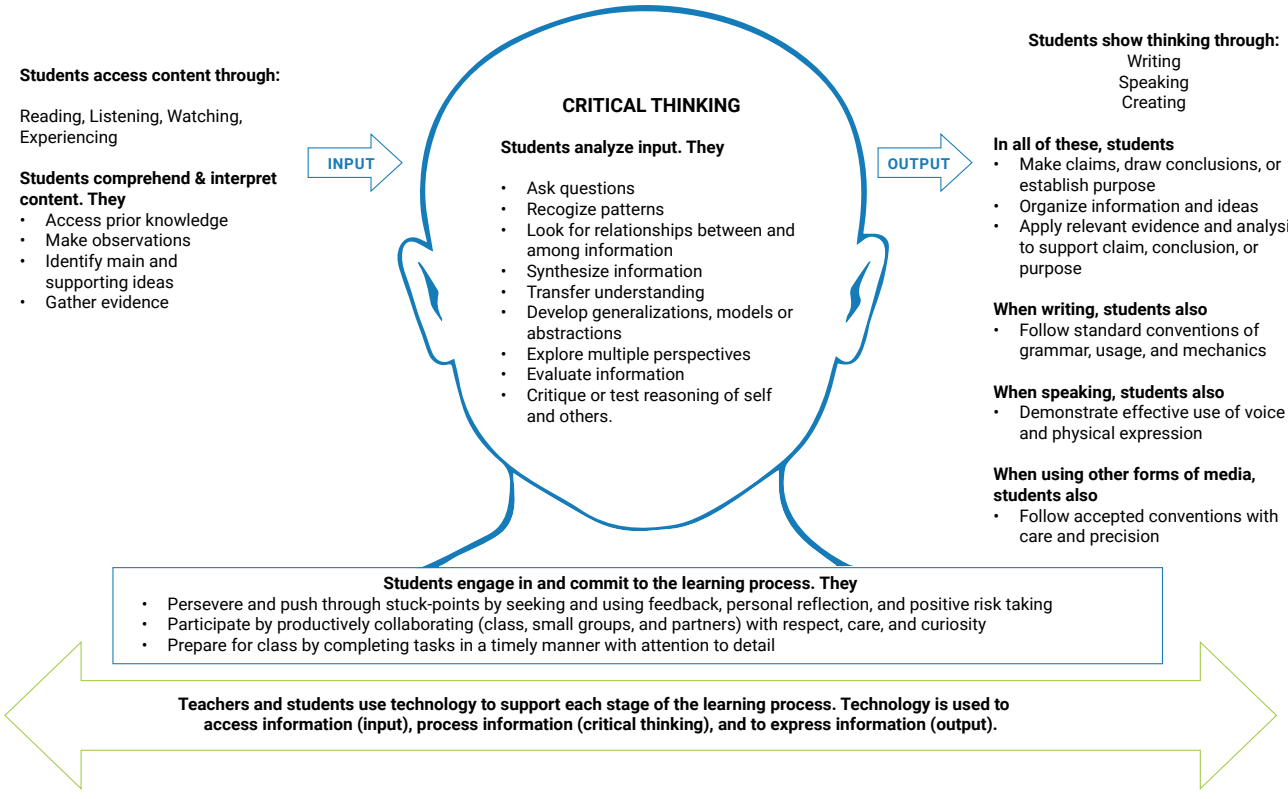
The Big Blue Head

One of the first things the team at CVU did was outline their understanding of the learning process. They call it the 'The Big Blue Head' (the original version was printed on blue paper). As you can see from the picture below calling it the Big Blue Head feels entirely appropriate. But you could also refer to as the CVU Theory of Learning and Teaching.

The Big Blue Head summarizes the learning process. It's not just the memorization process, which many cognitive neuroscientists describe in terms of working memory and retrieval. It's the process of thinking critically. It's a step that most districts have skipped over in trying to transform their schools. The tendency is to implement new practices and structures using a model of learning that starts with a student as an empty vessel rather than someone who is asking questions, recognizing patterns, and generalizing understanding.

I know that many looking at the Big Blue Head will ask about the role of emotion in learning. CVU and CVSD are aware of the important role that emotion plays in learning and is drawing on CASL resources to build their capacity. That said, many schools will want to include the amygdala and limbic system in drawing out the Big Blue Head as well as the importance of students being able to manage their emotions and feeling safe in the process of learning.

In our conversation, Rinkema and Williams mentioned that over time, teachers can begin to know their students as thinkers. It's not something that happens quickly. But with enough opportunity, in conversation, observation, and looking at student work, teachers can learn how students are thinking their way through problems. It suggests to me that we might be at the beginning of an entire new way of understanding students. If we design schools to enhance relationships,



we can better understand students' interests, social-emotional lives, development…and how they are progressing as thinkers.

Know-Understand-Do

Standards-based learning at Champlain Valley Union High School is an instructional and assessment model based on what we know about how the brain works, what we know about learning, and what we know about motivation. It's an approach to teaching that seeks to maximize learning.

Standards-based learning starts with articulating desired results because "the brain wants to know where it's going." Thus, teachers need to have a clear understanding of what they want students to learn. Many schools simply turn to the state standards. However, CVU uses the K-U-D format, originally developed by Carol Ann Tomlinson, to shape curriculum. Teachers identify what students will *K*now, *U*nderstand and be able to *D*o by the end of a period of learning. The expectations for what students are able to do is the learning target. The learning targets are skills "that demonstrate their knowledge and understanding of the content." Learning targets have scales that describe a learning progression that shapes instruction, assessment, and feedback. Students are seeing the value of standards-based learning. One student explained, I've grown to like standards-based learning.
It's more practical. It's easier to find purpose in what I'm learning about. I can even see how we can use what we are learning in everyday life." (Check out p. 11 in *The Standards-Based Classroom* for more. You may also want to read the description at CVU Learns or look at templates.)

In many districts, there is some confusion or perhaps a tension about the relationship between content and skills. If a district goes too far down the path of talking only about skills, it's likely some parents will get nervous and demand more content. If a district only emphasizes content, it's easy for everything to slip back toward memorization and comprehension. Whether it is Webb's Depth of Knowledge or Bloom's taxonomy or any other framework, the higher levels emphasize skills such as analysis, evaluation, and synthesis. This all requires thinking, not just memorization. Remember, thinking is hard. No one can do it all day, all the time. It's not just about getting the right answer. It's about applying content using skills. Rinkema and Williams emphasized, "When you have the focus on skills, students learn the content even better." They also noted that the conversation has shifted. Instead of teachers talking about what they cover, they understand how their courses are developing student skills that build upon each other. There is a shift from teachers understanding themselves as independent workers to a more collaborative intentionality around helping students meet the learning targets.

When CVU first started down the path of using K-U-D, every teacher was writing their own learning targets and scales. Some developed six learning targets for a semester, others wrote forty. Over time, they've found that a general rule is to aim for 8-12 learning targets over the year for one class (or 4-6 in one semester). Teachers who were teaching common courses worked together to create the learning targets, and are now beginning to use common scales. This is creating the reliability needed to make a proficiency-based diploma effective, as it reduces the inconsistency that haunts today's diplomas, where students with sixth grade reading skills can graduate in some districts.

CVU has developed scales to guide teachers in their skill development. Below is the scale for developing K-U-Ds.

Developing K-U-Ds

I have course curriculum documents.	I have course K-U-Ds and unit descriptions and/or expectations.	**I use unit K-U-Ds to drive my instruction and assessment.**	I use my unit K-U-Ds with students to clearly communicate goals and expectations for learning.

See Chapter 1 in The Standards-Based Classroom

The use of learning targets and scales also opened up conversations with special educators regarding the difference between accommodations and modifications. When accommodations are needed, the learning targets and scales remain the same. The accommodation might be more time on tasks, listening to a book rather than reading it, or the ability to get up for a break. Modifications are needed if it is determined that the learning targets are inappropriate for the learner. (See Chapter 4 in The Standards-Based Classroom.)

Moving Towards Brain Friendly: Standards-Based Learning at Champlain Valley Union

Effective Instruction

The principles of standards-based learning and the most recent research on the learning sciences emphasize the role of teachers in helping students to *discover* the curriculum rather than *delivering* the curriculum. As Rinkema and Williams commented, "We want to students using content, living it, not memorizing it."

The K-U-D framework helps to clarify that in order to apply the content and skills, students are going to be involved with critical thinking. And critical thinking, just like any other skill, can be broken down into smaller pieces and modeled to students. Finally, standards-based learning requires teachers to think carefully about the learning target, their instruction and how evidence of learning will be demonstrated. If students are going to learn how to approach a problem through critical thinking, shouldn't the instruction, assignments, and homework promote critical thinking as well? A student in a science class with below grade level writing skills shouldn't receive a lower score for their writing if they were able to provide evidence of the science learning target, should they? Intentionality is a strong theme in CVU's standards-based learning approach.

As the 120 teachers at CVU began to use the learning targets (described in Part 1), they found that it was going to require them to shift their teaching. CVU turned to the Big Blue Head (also described in Part 1) to guide conversations about instruction in hopes of building a school-wide understanding of effective instruction. CVU has developed scales to guide teachers in their skill development. Below is the scale for designing effective instruction.

Designing Instruction

Most of my instructional time focuses on content delivery.	I split my instructional time between content delivery and student activities.	**I introduce and model skills that I will assess, and students use them to practice with the content.**	I directly instruct the skills my students will need to acquire and apply deep content knowledge.

See Chapter 7 in The Standards-Based Classroom

Introducing a new model of teaching and learning requires humility. It was a point that was raised repeatedly by Emily Rinkema and Stan Williams, instructional coaches at Champlain Valley Union High School (CVU). We are all learners. We are all going to make mistakes along the way. The important thing is to be able to learn from those mistakes. As teachers become more intentional about aligning intruction with the higher order skills they soon found themselves outside of their confort zone. It's difficult for a professional to go to work every day feeling that they are going to bumble and stumble somewhere during the day. The CVU leadership team found that helping the adults to feel comfortable being outside of their comfort zone became an important part of their job.

Assessing Learning: Summative Assessments

In standards-based learning, summative assessments should assess the learning targets: the Dos. CVU approaches summative assessments as "an opportunity for students to show us what they learned, and an opportunity for us to see how successful we were with the unit." Rinkema and Williams used the experience of a soccer coach to explain summative assessments, "You've had all the weeks of practice and scrimmages. The game is like a summative assessment. The teacher pulls back and says "Let's see what you can do.' After the game the coach jumps back in and works with team members where they are weak. What's important is to be able to see what the student can do clearly. You want as little assessment fog as possible."

Rinkema and Williams emphasize two points regarding summative assessments. First, neither teachers nor students should be surprised on how students did on a summative assessment. If teachers are monitoring student progress, they'll already know where students are weak and where they are strong. In fact, students should be able to tell you how they did at the end of an assessment. No surprises.

Second, the goal is for all students to be successful on the summative assessment. This philosophy is in direct conflict with the culture of ranking that permeates our schools and society. We have to ask ourselves, "*Why would we ever want students to fail?*" CVU has a Learning Center that students can access any time during the day if they need extra help. Revision, re-dos, and re-takes are all acceptable if a student doesn't succeed in demonstrating the learning target the first time around. Again, no one should be surprised if a revision or re-do is needed. The question schools need to be asking is, "*What is preventing us from making sure students have the instruction and support they need to be successful before the summative?*"

Below is the scale to guide teachers in developing their skills related to summative assessments.

Summatively Assessing Learning

I design summative assessments that mostly address knowledge of my unit or course content.	I design summative assessments that provide evidence of student achievement of the K-U-D.	**I design summative assessments that provide reliable, individual evidence of student achievement of the K-U-D.**	I design summative assessments that allow students to demonstrate achievement of the K-U-D in an authentic, engaging way.

See Chapter 5 in The Standards-Based Classroom

Rinkema and Williams added that when used well summative assessments can help to create a stronger community of learners. They explained, "When students understand that they are all trying to get to a common destination they will help each other along the way. The summative assessment is that destination. It can help create a stronger culture of learning." All students are moving towards graduation. With each learning target tied to a graduation standard they can see their path forward.

Students explained to me that many of the STEM teachers still tend to use tests for summative assessments. Some of the humanities teachers will offer other options. A few teachers will even offer students the opportunity to decide how they would like to submit evidence of learning. One student told me she preferred the tests, "I like the idea of applying learning. But I'm better at memorizing." There is still a lot of work to do at CVU with assessment literacy, but each year teachers are becoming more intentional about the design of their assessments and ensuring that they gather evidence of the targets in order to inform instruction.

I asked Rinkema and Williams what role summative assessments play in standards-based learning. Are they really necessary when the focus is so clearly on learning? I expected them to suggest that we might be able to do without them altogether as some purists in the competency-based education argue. Instead, they argued that "summative assessments trigger reflection and accountability." The summative assessments help students to take a look at their growth, allowing them to reflect on where they started and where they are at a given point of time. They can help students create their own goals for improving, and summative scores can always change throughout the year as new evidence of learning is demonstrated.

For schools and districts, the summative assessments can create the data needed for continuous improvement. Understanding where students are in achieving the learning targets at some points in time can be used to help answer a number of different questions. How are the FRL students doing compared to middle/upper income students? How are students of color progressing compared to their white peers? Are some teachers better able to help students achieve some learning targets? Do students in some teachers' classes take longer or achieve at lower levels as compared to other teachers? Assessment for learning is invaluable to the learning process. However intentionally designed summatives can help provide the data to districts and schools to hold themselves accountable.

Assessing Learning: Formative Assessments

After reviewing content, introducing concepts, and modeling skills, the time comes for students to practice. Students need lots of opportunities to practice; some will need more than others to master the skill. Practice is also an opportunity for teachers to understand where students might have a misconception about a concept or need help in breaking down complex processes into manageable steps. The three most important things about formative assessment according to CVU's standards-based learning approach is:

1. Make sure that the practice is designed around the learning target. It's important to have homework and assignments be on target so that teachers can see where students might need help.
2. Second, reduce risk. If students feel that they are being judged or graded, some might be motivated by the competition, but those who are struggling the most are likely to simply shut down. Who wants to be told they are a failure?

3. Make sure students receive effective feedback in a timely fashion. This means teachers have to change instruction so that they can do more observing to understand where students are learning and where they are stumbling...and then organize targeted instruction for the next class.

The scale to guide teachers intheir skill development in formative assessment is below.

As in any school involved in the transformation from traditional to mastery, not every teacher learns, adjusts, and adapts at the same pace or in the same way. Several students mentioned the variation in how teachers are implementing standards-based learning in their classrooms. One noted that the age of the teacher really matters. Younger teachers are more open to developing new approaches. They also had compassion for the older teachers. One student commented, "Teachers with 30 years of experience have been using one approach their whole life. It's hard to break habits." Another noted, "STEM is more traditional and slow to get into it."

Others wished there was more consistency across classes. One student complained, "It's really confusing when it varies from class to class. You don't know what to expect and you have to spend time trying to figure it out."

Rinkema and Williams agreed that the instruction and assessment strategies run the gamut right now. "We have teachers who have developed powerful instructional strategies for critical thinking that are aligned with the learning targets, but still use multiple choice tests as their primary method of summative assessment. Or there are mismatches where the assessments are beautifully aligned, but the instruction hasn't caught up. And then there are some that just love their content and want their students to love it too, and can't see how a focus on skills could actually improve content retention. However, it's safe to say that we are all moving toward brain friendly practices and away from brain hostile ones."

Rinkema and Williams were emphatic, "The more understanding about the brain we have, the better."

Formatively Assessing Learning

I design formative assessments related to my content.	I provide practice time and design formative assessments that are related to my content and learning targets.	**I design non-scored practice activities and intentional formative assessments to provide reliable individual evidence of achievement toward learning targets.**	I design a variety of individual and collaborative practice activities that encourage risk taking; my formative assessments provide reliable, individual evidence of achievement toward learning targets in a way that matches or builds to how students will be summatively assessed.

See Chapter 6 in The Standards-Based Classroom

Grading is Your GPS at Champlain Valley Union

Change isn't easy. Adam Bunting, principal of Champlain Valley Union High School (CVU), described his job as "juggling glass balls." It takes well developed listening skills, the ability to engage others effectively in problem-solving, and never-ending confidence that the team can fully implement standards-based learning to keep all those balls in the air. The team at CVU has moved the entire school through the process of creating learning targets and scales using the K-U-D framework.

But now the hard work of aligning teaching and assessing student learning is upon them. Nearly every teacher at CVU has become a learner — learning about the research on learning, developing instructional practices for higher order learning such as critical thinking, and designing intentional assessments that can help build student skills and effectively monitor their progress.

This article looks at grading, one of the most powerful and challenging areas of aligning a school around learning.

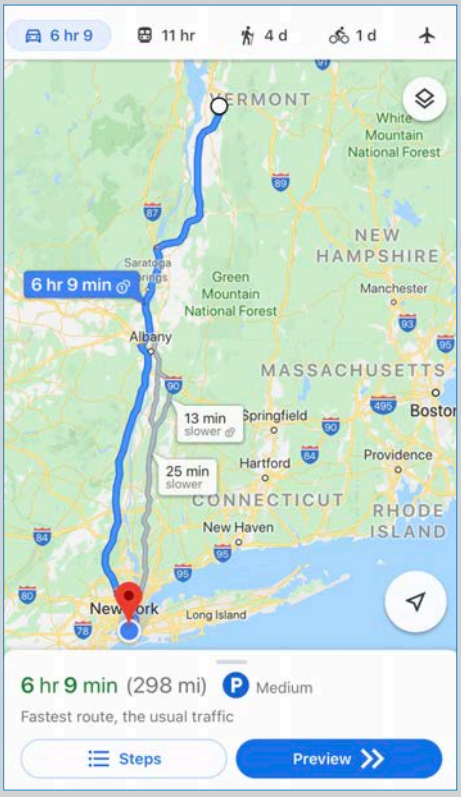
Think of Grading as Your Learning GPS

One of the most difficult things that districts and schools are encountering in the transition to mastery learning is grading. Too often, the shift from A-F to 1-4 seems to be just a shift from letters to numbers. Fours are interpreted as As, threes as Bs. The only difference is that the F has become the Not Yet Proficient. Some schools never take the important step back to rethink about why student work needs to be "graded," how to transition in ways that are consistent with the research on learning, and how to construct policies that reinforce learning. They approach the change to standards-based grading as if it were simply a practice rather than understanding it as a tsunami-sized philosophical change.

CVU is one of the few schools I've visited that has intentionally and thoughtfully aligned grading policy with the goal of maximizing learning. It starts with their use of grading through the metaphorical lens of a Global Positioning System (GPS). The learning targets are the destination. How students perform on summative assessments are the blue dots that mark the path they are taking. If students are going a bit off-course (possibly because they are going deeper in areas that are of high interest) or taking a bit longer, they may need more coaching, intensive instruction, and support. But they are all going to get to the same destination eventually. That's what mastery learning (also referred to as competency-based or proficiency-based) is about: ensuring every student succeeds.

CVU explains their approach in a FAQ on standards-based learning:

1. **Articulate**: Educators design Learning Targets for their classes aligned with national, state, and local standards. These targets clearly articulate what students should know, understand, and be able to do for each unit of study. The targets are like the "destinations" in a GPS. We decide where we want to go, and we enter the location—we need to be specific about our destinations in order to get the best directions. Teachers, students, and parents are aware of the destinations, so there is no mystery about where we are headed.
2. **Differentiate**: Educators examine the strengths and needs of each student and determine strategies to help all students meet or exceed the articulated standards. Think of this as the actual map to the destination. Not all students are starting from the same location, so the routes they take may differ. It is the teacher's job to know the map (and students) well enough to anticipate roadblocks, determine alternate routes, or to suggest scenic opportunities. In most cases, the students have the same destinations, but how and when they get there may vary.
3. **Communicate**: Educators report student progress and achievement at the end of each unit of study. These reports are aligned with the articulated Learning Targets. Think of these reports as the "blue dot" on a GPS. At any given time, we know our exact location towards the destination. The blue dot tells us where we are and how far we are from where we want to be. This is what the standards reports do as well: they let teachers, students, and parents know where the learners are in relation to specific destinations.



Foundational Questions:

1. Where do we want our learners to go? (learning targets)
2. How do we know where they are along the way? (assessments)
3. How do we help them move towards or beyond the destination? (instruction)
4. How do we communicate where they are? (grading & reporting)

The idea of a learning GPS (or LPS, if you will) helps to answer four foundational questions:

- Where do we want our learners to go?
- How do we know where they are along the way?
- How do we help them move toward or beyond the destination?
- How do we communicate where they are?

Communicating Progress Toward Your Destination

The purpose of grades at CVU is to communicate student progress toward achieving learning targets and graduation standards. For the purpose of clarity, I'm going to refer to CVU's standards-based grades as scores and scoring and use grades and grading to refer to traditional grading that only gives students one chance on an assessment and is used to rank students based on the GPA.

At CVU, students receive scores for each of the course learning targets. Learning targets are all tagged to one of the graduation standards. Ratings on habits of learning, aimed at giving students feedback on becoming self-directed learners, are separated from academics.

When students are having difficulty attaining a learning target, teachers can engage students in reflecting on how their habits are shaping their learning as well as identifying gaps or misconceptions that may be inhibiting understanding or the application of content.

Teachers enter scores into JumpRope, CVU's grade book, using a four-point scoring system. Note that all targets have scales that articulate the specific levels as they relate to that skill, but the general levels are:

4.0 Student work shows excellence in the target skill.
3.0 Student work shows achievement of the target skill.
2.0 Student work shows approaching achievement of the target skill.
1.0 Student work shows little evidence of achievement of the target skill.
N Student work shows no evidence of achievement of the target skill.
I Work is missing or too incomplete to determine an accurate score.

As in most other districts, a 3 represents demonstrating proficiency on the learning target. Based on faculty requests, the decision was made to give teachers the choice to score with more differentiation using half-numbers, such as 2.5 or 3.5. However, they are firm that there shouldn't be smaller increments, as it would put them back on the slippery slope of spending time and energy justifying the rating and taking time away from the teaching and learning.

CVU does its best to keep the focus on learning, not grades. However, three times a year, CVU turns on the grade conversion so students and parents can see letter grades and GPA. The 3.5 becomes an A- and 4.0 becomes an A+. The conversion is commonly applied so there is consistency across teachers. Of course, the letter grades are then converted back into the GPA in response to the demand from the NCAA, merit scholarships, and college admissions.

CVU keeps the focus on learning by giving students until the end of the course to re-submit evidence of learning and change their scores...and thus their grades and GPA. Teachers are expected to publish re-assessment plans so students know what they need to do to submit evidence of their achievement.

Instructional coaches Emily Rinkema and Stan Williams commented that if they could do it all over, they would suggest using words and not numbers in defining the scoring system. However, even if they had been able to move

away from numbers, the need for students to be able to differentiate themselves would still have put pressure to find a middle ground in the transition to standards-based learning.

As always, the students I spoke with know the rules of the game. They know that their most recent summative scores on the learning targets determine the grade. They know how the scores are converted to the composite letter grade.

The standards-based grading has helped to keep the focus on learning. But the pressures of the NCAA, scholarships, and college admissions is a powerful counter-force to put the focus on getting a high GPA. In speaking with students, I also wondered if the power of peers in the lives of teenagers is also at play. They describe their interest in each other's grades as competitive, but I also heard it as a way to fit in with a group. Regardless of the reason, students are ambivalent about grades. They know that the A-F grades and GPA contribute little to learning, yet feel the pressure to play the grade game.

Catherine and Josie, two seniors in the midst of submitting college applications, highlighted the tension. Catherine set off by explaining the damaging aspects of traditional grades, "It can build confidence. Or it can shut you down. Lots of kids don't want to talk about grades because it is a confidence drainer." She then shifted to what grades mean to her relationship with her friends. "Our group of friends is academically competitive. We always ask each other, 'What did you get on the test?' Grades help us see where we fit in." Her friend Josie added, "We talk about how we did on a test. But we don't talk about traditional grades much. We know we are different learners. We know our strengths. We know the grades don't matter in the big picture. But they mean everything right now." Looking down, she repeated, "Grades are everything right now." For these two young women, grades increased anxiety and decreased the fun and sense of purpose that comes from learning.

Preparing for the Mastery Transcript

CVU has been developing their standards-based learning model for over seven years. Progress, although challenging at times, has been steady. The district has now embraced standards-based learning as well. However, Rinkema and Williams lamented, "We've hit a ceiling with the current transcript. The GPA overpowers and wipes out all the good learning. The reduction of a student's education to a single number is unfair to our students and their unique learning stories." Thus, they are turning to the Mastery Transcript with hope that the efforts of the nearly 300 schools in the Mastery Transcript Consortium will build the influence that is needed to create an alternative to the current college admissions process.

As one of the schools beta-testing the Mastery Transcript, CVU has had to think through the difference between the two types of mastery credits: foundational and advanced. The foundational credits are going to be those that are required to graduate. Advanced credits are the ones that are "going to let students shine." The challenge is that it is important to let any student shine and demonstrate their more advanced skills. A student should be able to demonstrate advanced credit in physics through an AP, taking a college course or doing an internship in an aerospace company that designs a component of a product.

Traditionally, AP has been the primary avenue for students to demonstrate their higher skills and increase their GPA. Colleges and universities want to know how many AP courses were offered to determine the degree to which students took advantage of higher level courses. Moreover, the AP courses as currently designed are more aligned with the

beliefs of traditional high school courses than that of standards-based learning. Curriculum is covered. Content is valued over skills. Learning targets are opaque.

If they are going to stay true to the philosophy behind standards-based learning that values intrinsic motivation, CVU will need to help students understand that advanced credits doesn't mean that you took more AP. It doesn't mean that you are showing that you are smarter than other students. Advanced means pursuing excellence. Advanced means diving into something you are really curious about and engaging in problem-solving. The hope is that all students should have lots of advanced credits that communicate their passions and strengths. Advanced credits will help students distinguish themselves from one another. There will always be some students that just drive towards more and more advanced credits. However, they may find that demonstrating excellence is more fun and more challenging than getting a 5 on an AP exam.

Snapping Standards-Based Learning and Differentiation into Place at CVU

"You can't do standards-based learning if you don't differentiate," emphasized Emily Rinkema and Stan Williams, instructional coaches at Champlain Valley Union High School. "Students come into your classroom with a range of knowledge and skills. We used to focus on teaching the curriculum and hoping students would learn. In standards-based learning, the focus is on making sure students are learning. That means differentiating instruction."

CVU's path toward standards-based learning started with differentiation. The idea of differentiation has been around since Carol Tomlinson's efforts in the 1970s. At CVU, where classes have been heterogeneous for over 20 years, differentiation was necessary to teaching and learning. But simply put, effective differentiation was very difficult to do.

Rinkema and Williams took a sabbatical in 2008 to see if they could figure out a systematic way of differentiating their classrooms. They said, "As we developed a deeper understanding of what is needed to differentiate, it led us down the path to standards-based learning. We realized that you needed to understand two things. First, you need to know exactly what you want students to know, understand, and do. Second, you have to know what students need to learn. You have to understand their readiness in comparison to the specific learning target. You have to understand what growth you want to develop."

What they learned is that you can't differentiate without standards-based learning. That's right. Standards-based learning and differentiation are highly interdependent — two sides of the same coin. You can't do one without the other. Rinkema and Williams explained, "Without the learning targets, what are you differentiating? If you have common learning targets, differentiation just makes sense. Everything snaps into place."

Flexible Grouping Based on Readiness

But how can a teacher differentiate by readiness when they have thirty students in a classroom? Once teachers know their students' readiness and develop a sense of their path toward reaching the learning target, the next step is flexible grouping. Below is CVU's response to Frequently Asked Questions on differentiation:

Q: Isn't grouping by readiness just tracking?

A: The difference between grouping and tracking is that groups change based on data or interest, and tracks stay the same over a long period of time. When we group by readiness, we need to do so based on specific data, not overall impressions or

grades. For example, if I have just given a math quiz with three concepts on it, I might make groups for the next class based on their performance on one of the concepts — the group might only be for 20 minutes, and I will have three groups: one that nailed it on the quiz (I will provide this group with a challenge problem that uses the concept in a new way — a more complex way, or one with distracting information, perhaps); one that was close, but made minor errors (I will provide this group with an example and more practice — perhaps a group problem that they need to come to consensus on and explain); and one that clearly needs reteaching (this is the group I might focus on for the 20 minutes — providing reteaching in a smaller group, and then re-checking understanding). If I find that it's always the same kids in the same groups, then I will find other ways to group throughout the week to mix things up — I might have a group problem activity with three different sets of content, for example.

Q: Won't kids know they're in the "dummy group" and won't that make them feel bad?

A: Kids want to feel successful, and the purpose of flexible grouping by readiness is to allow students a greater possibility to feel this success. Our suggestion is to be as transparent as possible right from the beginning of the year. Let kids know that your job is to assess where they are and respond to that, and sometimes that will mean working in groups with other students who have similar strengths or needs in a particular area. A strong classroom community will prevent students from making negative comments, particularly when they know that the purpose of class is to learn what we don't know, not just show what we know. We have found that after about a week, kids stop asking why we put them in different groups — they trust that we are doing it for a good reason and that it will help them be successful in the class.

Q: When I'm working with one group, how do I keep the rest of the groups on task?

A: It takes some practice to manage groups well, but it's worth it. Here are some suggestions:

- Use your room to help you — take a few minutes to rearrange the tables/desks in a way that meets your purpose.
- Plan the small group instruction to take 20 minutes or less — that way the other groups are only on their own for a manageable amount of time before you touch base with them.
- Provide tasks for the other groups that don't require you — having written directions for those groups can help, so that if they get stuck, they know what to do next. With a little training, students will learn to rely on each other and themselves for the short amount of time they won't have access to you.
- Have established anchor tasks that the other students can work on — this might be an ongoing assignment like a blog or a journal, or could be high engagement activities like computer quiz games that help reinforce skills and knowledge.
- In rare occasions when you need to move to a different room with a small group, use your colleagues. Work out trades — will you come in and watch part of my class for 20 minutes on Tuesday and I'll do the same for you?

CVU considers flexible grouping a cornerstone of good instruction in standards-based learning. However, it is constrained by the one-teacher one-classroom structure of the traditional educational model. Rinkema and Williams mentioned that they wished there could be more co-teaching, as the collaboration is beneficial in so many ways, including greater ease in managing flexible grouping. In New Zealand, those schools that are modernizing, what they refer to as personalizing, are redesigning their facilities

for co-teaching with 2-3 teachers and multi-age classrooms.

Differentiating by Readiness: Supporting Teachers

Instructional support and training are provided to teachers based on their readiness and interest. Although most teachers are making the shift toward instructional approaches that have students actively engaged in learning in the classroom (such as projects and the workshop model), there are still some teachers who are hanging onto the idea that their job is to deliver content. Obviously it is very difficult, if not impossible, to differentiate and do flexible grouping if lecture is the primary mode of instruction. Teachers don't have adequate opportunity to observe and generate evidence for formative assessments. Thus, instructional coaches work with teachers to develop their capacity for differentiation based on the teacher's readiness using the scale below.

As described in detail in Chapter 8 in The Standards-Based Classroom: Making Learning the Goal by Rinkema and Williams, CVU helps teachers learn to differentiate by working through a template that identifies:

- learning target and scale to identify where they are in relationship to the learning target;

- sorting students into four groups based on formative assessments that indicate where they are on the scale;
- defining ways they might move each group forward toward the next stage on the scale; and,
- planning for the instruction, activities, and outcomes for each group.

The approach of standards-based learning and differentiation is also applied to professional learning. Teachers receive coaching and professional development according to their own readiness based on learning targets and scales.

Differentiating by Readiness

I encourage students who are struggling with my learning to get help outside of class.	I use class time to differentiate instruction and/or activities for students who struggle with my learing targets.	**I differentiate instruction and/or activities based on data from formative assessments in order to move all students forward on my scales.**	I use a variety of strategies, structures and models to differentiate instruction and/ or activities for all students.

Implementing Standards-Based Learning at Champlain Valley Union

Champlain Valley Union High School (CVU) is living and breathing standards-based learning. Step by step, it's being implemented throughout the high school. For the past three years, it's also been a district-wide approach so that students are now arriving from the four district middle schools with the mindsets and skills to own their learning.

Every district and school has to develop their implementation plan and roll-out strategy based on their own context, school readiness, and where the leaders are that will take the ideas and run with them. There simply isn't one best implementation strategy for managing the transition to mastery learning. Below are a few of the highlights of CVU's transition steps.

Starting with the Brain Sciences Groundwork

It's impossible to capture the amount of groundwork that was put into place at CVU before they started the shift to standards-based learning. It's a story of a school that is filled with leaders and values leadership. It's a story of a school that is also a learning organization. The ideas and the groundwork have been slowing cooking for nearly twenty years. Its possible to trace it back almost twenty years ago with a schoolwide effort to study the research on learning and the brain sciences. Teachers started understanding that there were brain friendly and brain hostile practices. But that wasn't enough to change practice.

The next stage was learning. Learning about what other schools were doing. Learning about what the research says. Learning about different sets of practices. The principal at the time, Sean McMannon, recognized that investing in their professional learning could become an asset to the school. There was lots of investigation going on the school. Two teachers, Emily Rinkema and Stan Williams, with a hunger to figure out how they could better differentiate their instruction to meet

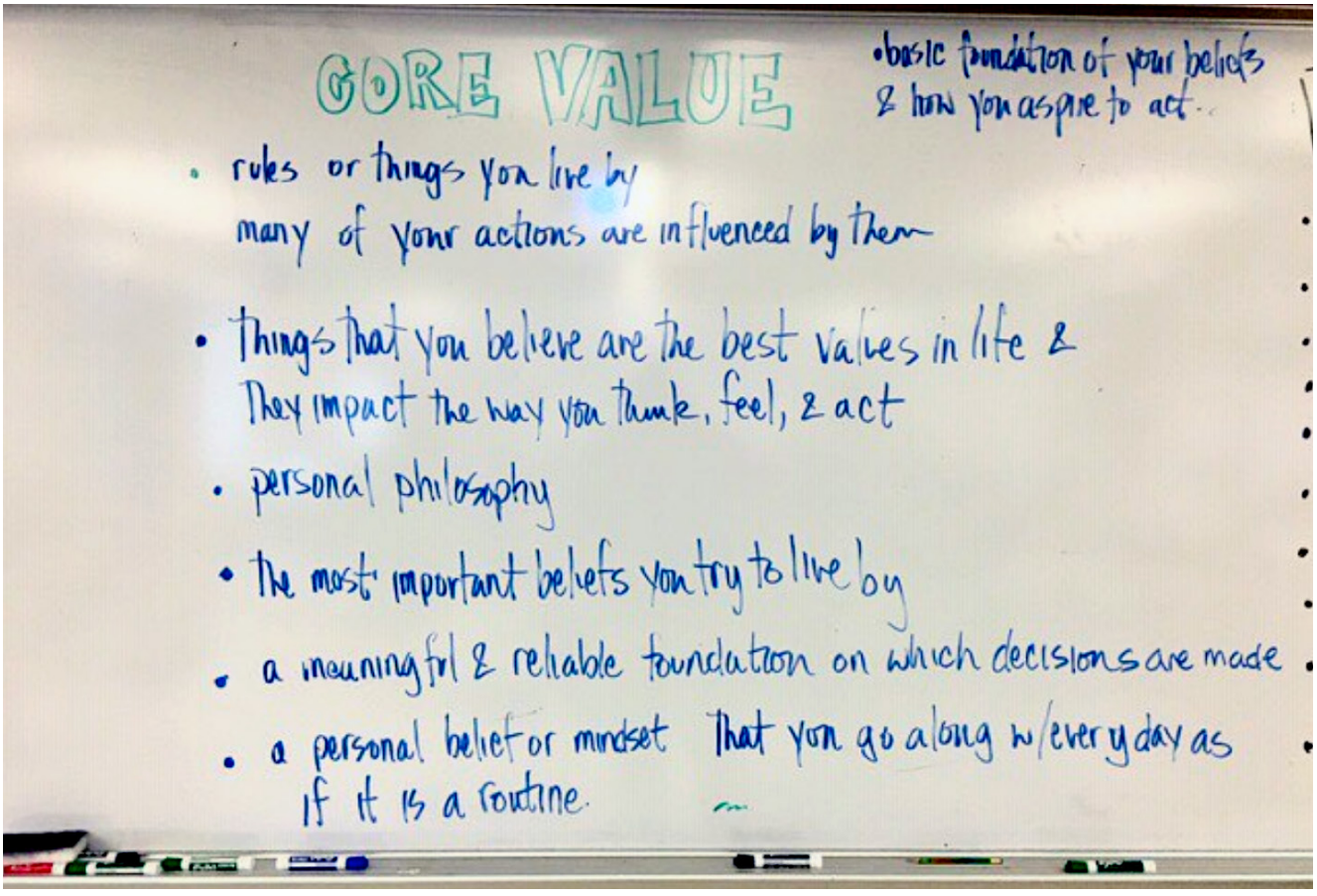
the needs of students, were given a part-time schedule so they could start talking to people outside of school. What they came back with was the seed of what has now become the standards-based learning approach described in their book *The Standards-Based Classroom: Making Learning the Goal*. They are the first to say that they may have brought the seed but it was a truly collaborative experience in shaping a new model of education.

The culture at CVU was already strong in terms of trust and respect. However, teachers needed to believe that they could design a school that was aligned with the research on learning. This required leadership to recognize that failure and mistakes are opportunities for learning, not reprimanding. Principals Jeff Evans now working at the district and current principal Adam Bunting embody this leadership quality: steadily pushing forward while leaving room for error, reflection, and mid-course corrections.

CORE Program

CVU introduced standards-based learning through their ninth-grade Core program. As students enter CVU, they are placed in one of four houses with 80-90 other students. A team of four teachers work closely with the students during that first year to help them prepare for high school. Within that first year of standards-based learning, the number of course failures dropped dramatically. Why? Because by focusing on specific learning targets and requiring evidence of learning, teachers could see the problems earlier. By tracking learning more clearly and closely, teachers could intervene earlier. It became harder to fail a course.

When CVU was ready to make the shift to standards-based grading, they introduced it through the Core program as well. The collaborative team structure helps teachers



work through the kinks of any new process or practice. It is also a helpful roll-out strategy to introduce new practices to ninth graders rather than managing the chaos that comes when introducing new practice to upper level students.

The Core program continues to play an important function in onboarding students to standards-based learning. Students who have spent nine years in schools that demand compliance and deliver curriculum have learned how to survive in that environment. Asking them to take risks, to be willing to make mistakes and learn from them, and to own their learning means that trust needs to be built between teachers and students and among the students. The small size of the Core houses helps.

Rinkema and Williams noted that it takes time to build that trust. "Kids can become anxious and uncomfortable when they start learning in this new way," they said. "We say to kids, 'You will have to think and thinking is hard. But we are going to help you develop the skills you need to think hard and solve challenging problems. In two months, you are going to feel a lot better.'" They continued, "Students are going to fail at first but they need to know that's okay. In order to learn, we have to be open to failure. And we have to learn how to fail so that we learn. Kids have never been encouraged to fail. Teachers haven't been either. And being willing to fail is absolutely necessary for thinking."

In response to my questions about struggling students, Rinkema and Williams said, "There are a handful of students who will take longer than two months before they are willing to take the risk. It can take three months or more for them to learn to trust their teachers enough to be comfortable being uncomfortable. Eventually, they build confidence in themselves and in their teachers. They know they are going to figure it out or the teacher is going to step in to help them."

Standards-Based Professional Learning

A strong part of CVU's implementation strategy is a well-developed learning model and an investment in building teacher capacity. The leadership team at CVU believes that new practices require new understanding and new skills.

CVU's standards-based learning model is one of the most developed I've seen in my visits to over a hundred schools. It's so well developed that it's been documented in a book. It's so well documented that the team at CVU has been able to create learning targets and scales for the skills and knowledge teachers need in order to implement it effectively. This means that teachers can self-assess where they are on the different sets of skills and select the one or two (or more) that they are going to improve. This also means that instructional coaches can personalize support to teachers.

As an organization, the school can track their capacity building.

Here are a few of the scales that define the skills teachers need to have or develop (From *The Standards-Based Classroom: Making Learning the Goal*.) They'll give you a sense of the design and progression that shapes CVU's professional learning strategy. You can find other examples in the earlier articles that provide an overview of standards-based learning.

Professional learning is provided in multiple ways. It's not an add-on or something done on specific days. It's an ongoing and core aspect of how CVU operates. At times, there have been school-wide professional learning opportunities such as when the Know-Understand-Do (KUD) framework was first introduced. Professional learning communities are highly valued and nurtured. They are the place where teachers can work together to build shared understanding, look at student work, and develop and finetune their KUD, rubrics, and scales. Currently, there is a strong emphasis across the school to further strengthen scales as they begin to link them with the graduation standards. Four half-time instructional coaches also work with teachers on a more individual basis.

One thing we can be certain of, there will be more learning taking place at CVU.

Creating Learning Targets

I create/use learning targets that assess specific content and/or are mostly discrete tasks or activities.	I create/use learning targets that are scalable (complexity can be raised or lowered).	**I create/use learning targets that are scalable and transferable within and/or across units.**	I create/use learning targets that are aligned and calibrated within common courses or across disciplines.

Building Learning Scales

I provide descriptions of my expectations for assignments.	I develop/use rubrics that list or describe expectations for assignments.	**I develop/use instructional scales for each of my learning targets that define the increasing complexity of the skill progression.**	I develop/use benchmark sheets with exemplars to show each level of progression.

Mastery Transcript Consortium™ (MTC) is a global network of schools co-designing a new high school transcript that reflects the unique skills, strengths, and interests of each learner — and that supports educators as they deliver personalized, authentic, student-centered learning and prepare students for success in college, career and life.

www.mastery.org