

The Marriage of UDL and CPM (College Preparatory Mathematics)

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Abstract

Oconomowoc Area School District is in its sixth year of UDL implementation. By the fourth year of implementation, teachers understood the “why” and the “what” of UDL, but the overarching question was how does UDL work in structured content areas like mathematics that require strict fidelity? What does it look, sound, and feel like to truly apply the UDL framework to actual classroom practice in a College Preparatory Mathematics (CPM) classroom? In our session, we will explore how UDL is the perfect complement to any content relationship. Through Collective Teacher Efficacy and Collaborative Planning/Teacher Partnerships, UDL, and content area curriculum like CPM, really are stronger together.

Keywords

CPM (College Preparatory Mathematics); Collective Teacher Efficacy; Mathematics Design Team; Inclusive Practices; Social Equity; Collaborative Planning/Teaching

INTRODUCTION

Love doesn't always happen at first sight. When UDL was first implemented in the Oconomowoc Area School District, it seemed to be a good compliment to the literacy curriculum. But in mathematics, especially, a newly implemented CPM curriculum, it took several years for teachers to realize they needed a little UDL love in their life. Like any curriculum designed without acknowledging learner variability, CPM was found to have inherent learning barriers. Initially, it was evaluated through a UDL lens, and judged to have great potential for multiple means of representation, engagement, and action/expression. Predictable barriers in the curriculum around vocabulary, heavy language and reading expectations, social/emotional skills needed during team work, etc., were commonly reported. Empirical, data driven evidence showed that though CPM was a solid curriculum, it wasn't adequate to address learner variability. After flirting with UDL in theory, teachers using the CPM curriculum realized that they needed to fully implement UDL in order to help students become expert learners.

BACKGROUND:

The Need for UDL: Our “Why”

In 2012, Oconomowoc Area School District, through the leadership of Lisa Dawes, Student Services Director, started the journey toward providing more socially equitable opportunities for all our students, and made a conscious decision to adopt more inclusive practices.

Inclusive teaching practices were established by teachers, parent panels, and other stakeholders working in collaboration. Cross-Categorical educators were given training to support their role as co-teachers. Students with disabilities were transitioned from more segregated instruction to inclusive learning environments with their non-disabled peers. It is important to note that our “need for change” in the form of UDL, arose from the Social Equity Audit. We realized we needed a framework that would connect it *all*.

Figure 1: Framework that Connects it All for ALL.



Figure 1: All for ALL framework demonstrating how curriculum social equity, inclusive practices, collaborative teamwork, teacher efficacy and UDL connect.

THE WHAT?

WHAT is UDL?

UDL is a framework used to improve and optimize teaching and learning for all learners based on scientific insights into how humans learn. UDL became the framework we use to support all students. UDL and Social Equity are interde-

pendent. I firmly believe that, had we not embarked on the Social Equity work early on, our progress in UDL implementation would not be where it is today.

1.1 WHAT is CPM? (College Preparatory Mathematics)

According to the CPM website, <https://cpm.org/why-cpm>, CPM (College Preparatory Mathematics) focuses on how students best learn and retain mathematics. Students using CPM Core Connections learn problem solving strategies, and questioning techniques. They investigate, analyze critically, gather and construct evidence, and make rigorous arguments to justify their thinking. With the CPM instructional materials, students can tackle mathematical ideas applied in everyday contexts to help them make sense of otherwise abstract principles. Students are taught how to gather and organize information about problems, break down problems into smaller parts, and look for patterns that lead to solutions. Students often learn in collaboration with others, sharing information, expertise, and ideas.

CPM has certain lesson components or structures that are present when implementing with fidelity:

1. Launch and Lesson Introduction
2. Explore with Classwork and Teamwork
3. Summary and Closure
4. Review and Preview
5. Assessments for Learning

1.2 THE HOW? Taking UDL from Theory to Practice in the CPM Classroom

1.3 Collective Teacher Efficacy

John Hattie, author of *Visible Learning*, describes Collective Teacher Efficacy as the collective belief of teachers in their ability to positively affect students. In our district, every teacher is expected to teach all students, a non-negotiable proposition. Our beliefs, inclusive practices, and collaborative partnerships rally teachers to come together to find solutions in order to best meet the needs of our learners. With the UDL Framework, we know that together, we are stronger and can do so much more.

Powerful Partnerships

In marriage, it is always a good idea to get the parents' blessing. Well, the same proves to be true for the UDL/CPM union. After teachers worked tirelessly to implement CPM to fidelity, they expressed a need for "approval" from CPM experts to apply Universal Design Principles to the structured curriculum. Teachers knew it was the right work that the UDL framework could provide the answers needed, but sought validation. Curriculum and Instruction Director, John Flannery, Universal Design for Learning Facilitator/Coach, Kim Schiefelbein and Thomas Stricklin (CPM Instructional Coach), formed a powerful

partnership that "blessed" the marriage of CPM and UDL. Yes, one can still teach CPM with fidelity and apply the Principles of UDL! The real work started to happen when the masters of content, math pedagogy, strategy, and UDL design, came together at the same table to make data-informed decisions that would enhance CPM instruction.

1.3.1 CPM-UDL Crosswalk Planning Tool

As a result of the powerful partnership, the CPM-UDL Crosswalk Planning Tool was designed so that CPM Teachers and Collaborative Teams could begin to brainstorm around removing barriers within CPM. CPM has five key lesson phases: 1) Launch and Lesson Introduction (Understanding the problem and mathematical context), 2) Explore with Classwork and Teamwork (Students engage in the problem as the teacher moves about the classroom), 3) Summary and Closure (Teacher guides students to reach the mathematical goals of the problem and to connect to new understanding and prior math goals), 4) Review and Preview (Mixed sets of math problems allow students to practice and support mastery over time), and 5) Assessments for Learning (Standards based assessments are designed and given to reveal students' mathematical thinking. Using the CPM-UDL Crosswalk Planning tool, teachers identified potential barriers in the curriculum and brainstormed solutions to those barriers using the UDL framework. Please see the CPM-UDL Crosswalk Planning Tool, <https://goo.gl/xc4272>.

1.4 Math Design Team: Core Leaders

A group of 13 Core Math Teachers, ranging from 6th grade to 12th grade, were selected to design and build out Professional Development days for district Math Leaders (6-12) that would occur over the course of four Professional Development Days, and through job embedded opportunities throughout the 2019-2020 school year. The Math Design Team first took a hard look at the data. They homed in on the most common barriers, designated the "Crazy 8". The Math Design Team utilized the CPM-UDL Crosswalk Tool as a guide. The Crosswalk Tool became the springboard for all subsequent Professional Development Days.

1.4.1 Planning of District Professional Development Days

The Math Design Team took the District Math Leaders (6-12) through a similar process where they analyzed student data, looked for trends/barriers, and arrived at UDL solutions. The question of "How" do we do it, guided our collective work in Math Professional Learning Communities (Collaborative Grade level teams) for the rest of the year

1.4.2 Job Embedded Professional Development: Pineapple Visits: strengthening collective efficacy, establishing look-fors and addressing barriers

As a part of on-going job embedded PD, our Math Design Team core leaders have engaged in visiting each other's classrooms to strengthen their UDL practices, and remove barriers. In the future, Math Design Teams will become the "model lab sites" from which job embedded learning can continue to occur through vertical/horizontal teams. It is our hope that a culture of shared collaboration will continue to foster openness in all of our teachers to grow and learn from one another, thus strengthening Collective Teacher Efficacy.

1.5 Collaborative Teams: Intentional Proactive Planning/Co-Serving

Within the Professional Learning Communities, there are very intentional partnerships that focus on collaborative team approaches to meet the needs of all of our learners. In the Oconomowoc Area School District, as part of our Social Equity work, we refer to our Special Educators as Learning Strategists. Together, Learning Strategists, Content area teachers, and paraprofessionals intentionally and proactively plan lessons, design the learning environment, and engage learners through the UDL framework to meet the variability of our learners. Co-planning and co-serving (through a variety of models) is the norm for these collaborative teams. Lauren and Kerry will provide tangible examples of our Collaborative Team approach in action.

CLOSING

Like any marriage, the union of CPM and UDL takes work. Constant communication and reflection are critical skills that will make this marriage a successful one. There will always be variability; there will always

be barriers. Together with our content experts and the UDL framework, we can implement effective mathematical instruction that encourages our student to be "Expert Learners" and develop skills in collaboration and effective communication as they prepare for life after school.

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