**Universal Design for Learning**

**And Technology**

As we have expanded our understanding of how we learn and the barriers that inhibit this growth, we have come to believe two important facts; first is that learning is not “one size fits all” and second is that if we continue to ignore the resources provided by the digital revolution we are cutting off many very useful tools to which kids can strongly relate. Using these new and developing resources can affect the learning process at each of the three processes in learning; the affective process, recognition and strategic expressions of learning.

As cognitive and pedagogical research have expanded over the last decades, we have seen more and more that the learning process is nearly as varied as our fingerprints and just as important to identifying us. Furthermore, as we learn from researchers like Todd Rose, we now can see that there is not even an “average” learner and if we design schools for the average we will meet almost nobody’s needs. But, if we, “design for the edges” we can not only meet the needs of the typically relegated learners, but we can provide numerous opportunities for teachers and students to find those learning holes and use the many scaffolded learning tools to fill them in. Of course, this sort of instructional focus creates an enormous burden on teachers who must attempt to create these varied and diverse lessons that may need different instructions for differently skilled learners. Fortunately, since the body of pedagogical and cognitive study is heading towards these ideas as founded and important, the researchers and engineers have answered the call and begun to use our seemingly limitless technological advances to bring these theories into practice with new and ever more diversified access points. Now, teachers can look through the myriad of technological resources and find new ways to meet student needs in all three of the areas laid out by Universal Design for Learning (UDL).

The first step, according to UDL, is “affective learning” in which the student’s mind is largely making preparations for the learning process. The active mind here is looking for topics of study and methods of gathering input that strike the young brain as attractive. In this stage, something as simple as a computer or even a digital tablet can be an amazing resource. With the infinite information available on the Internet students could browse millions of titles to find reading sources that cover their favorite topics in order to find reading materials that could hold their interest, often a problem when kids must read in school. Some programs can also provide varied and flexible learning processes within the text. By questioning students during the learning events, some programs can scale activities by making questions harder or easier depending on how a student responds to a previous inquiry.

As we move to step two of UDL’s learning formula, “recognition,” we can get a look at where technology can be most useful. In this step, we can engage with one of our oldest understood new ides, that students learn best in a variety of ways, broadly seen as visual, auditory or kinesthetic. Thanks to the flexibility and variability of digital resources, nearly any activity can be engaged with by any of the three learning types. Let’s look at a social studies exercise to see how this could true. If we were creating a lesson about early Canadian expansion west into modern day Manitoba and Saskatchewan we could use a program for a computer that would be useful to any learner type. For the visual learner, they could read a speech from Louis Riel or watch one of several videos about his life and work as a founding father of the Metis people. For the auditory learner, the same speech could be played as an audio file or the same video could be watched. For the kinesthetic learner, they could work in a small group and act out a scene from Riel’s trial. And, just as important as these various methods seek to address specific strengths, or weaknesses, the varied stimulus could easily be helpful to all learner types.

In the final step of learning, according to UDL, the strategic learning process, we can see again the power of technology to create choice in targeting assessment for learning. Using computers and tablet apps we can create assessment opportunities that vary from a traditional rote exam – or one that will scale difficulties with each right or wrong answer – up to using readily available programs to create cartoons or music videos that could show how the Metis rallied behind their leader during difficult times. We could use an image search to gather photos and illustrations to make a collage that shows the development of the Metis culture since Riel. Another student, also of a more kinesthetic type, could create an interactive map showing the main routes of the fur traders in the newly opened west. Or, for an auditory learner, maybe they could learn and recite Riel’s closing arguments in his trial. Once more, as we saw in the recognition stage, the choices and resources available to students and teachers as they try and create a more accessible learning environment are vast, numerous and growing all the time.

UDL theory is based on the premise of creating numerous opportunities for engagement, representation and expression so as to provide as many possible avenues in order to provide a learning process that is attuned to the individual student. Technology is an invaluable asset to this since the Internet provides an almost limitless source of materials that can be found and shaped to fit individualized learning styles. This fact fits perfectly with UDL since one of its main principles is that learning environments must be, at their most basic, variable and flexible.