



Year 2, Quarter 2 Report

The Context of SHAPE

The Schools and Higher Education Advancing Public Education (SHAPE) program began in 2012 with the goal of creating a collaborative model between public schools and universities to improve learning and teaching across the preschool to doctorate spectrum. The second round of SHAPE extends this goal with an emphasis on 21st century learning and teaching through the following initiatives: International Baccalaureate, Dual Language Immersion, Global Competence, Early Interventions, STEM, Arts Integration, Universal Design for Learning, Professional Learning Communities, and Digital Learning. Innovation through each of these initiatives is helping to shape the picture of what twenty-first century learning and teaching look like from preschool through doctoral level education.

As SHAPE evolves, four hallmarks of twenty-first century learning in MCPS and at UM are surfacing. Each of those 21st century learning hallmarks and the SHAPE initiatives that support them are listed in the table below.

| 21 Century Learning Hallmarks | SHAPE Initiatives |
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| Inquiry-based learning that helps solve problems in novel, creative ways | International Baccalaureate STEM Arts Integration Professional Learning Communities Blended Learning |
| Blended learning | Blended Learning STEM Universal Design for Learning Early Interventions |
| Expanded cognitive flexibility through dual language learning and global awareness | Dual Language Immersion Global Competence International Baccalaureate |
| Equity | Early Interventions Universal Design for Learning Professional Learning Communities Blended Learning International Baccalaureate Arts Integration |

Initiative Updates



The International Baccalaureate initiative continues to make steady headway in research, teaching, and student engagement. In the second quarter, Dr. Lucila Rudge presented her research findings on the development and implementation process of IB at the 37th International Society for Teacher Education Conference in Århus, Denmark. She has adapted this paper into a manuscript entitled, “A Self-Study of Factors Affecting the Collaboration Between University and School Professionals,” which she has submitted to the *International Journal of Teacher Education and Professional Development*. Dr. Rudge is likewise working on another manuscript, “Bridging Theory Into Practice: Experiences of an IB Science High School Teacher Candidate,” with Althea Gyde, one of the graduate students in the IB program at UM. Another UM master’s student, Madiha Syeda, was part of the first IB cohort at UM; she completed and defended her master’s thesis, “Fostering International Mindedness in International Baccalaureate Classrooms: A Case Study of Two Teachers,” this spring. The IB cohort program in Teaching and Learning has thus far produced two graduates with three additional students doing their student teaching in IB schools in India, Berlin, and Alaska. With one student seeking out an opportunity for student teaching Berlin, the Office of Field Experience is now in the process of creating a streamlined procedure for IB candidates to identify and work with potential student teaching sites as well as establish formal partnerships with two IB World Schools in Brazil and Australia, respectively. A new cohort of seven IB candidates began their coursework this summer, four of whom are seeking Diploma Program certification and three of whom are seeking Primary Years Program certification. Though there was international interest in joining the IB certificate program at UM this spring, the University’s current funding model for the program for international students is not attractive, nor is the face-to-face requirement of the summer intensive course. Dr. Rudge is working on creating a funding model for the program that is competitive and attractive as she redesigns the summer intensive course to be delivered asynchronously online.

One of the most exciting developments in the IB initiative came from IB students at Big Sky High School. The students developed and ran a Bring Your Own Brain symposium focused on climate change, which ran 12-16 June at the University and was livestreamed. Notable thinkers in education and on climate change, such as Henry Giroux, John Foran, Derrick Jensen, and Noam Chomsky, spoke at the symposium. On average between 250 and 300 people attended the symposium daily, and dozens joined remotely online. The symposium was so successful that the Sierra Club has offered to fund the symposium going forward, and the group of students who planned the symposium this year has been invited to Scotland to participate in a similar conference in 2018.

Within MCPS the IB programs at Hellgate and Big Sky High Schools have grown such that both schools are expanding their course offerings for the 2017-2018 academic year in math, psychology, art and music theory. To support this expansion, MCPS and UM are hosting an IB Summer Institute in August at the Phyllis J. Washington College of Education and Human Sciences, and MCPS has purchased IB curricular materials and Chromebooks to provide students opportunities to experience the enhanced IB materials online. These efforts will almost certainly result in student growth, and the [University is now recognizing both standard level and higher level IB coursework](#) as it does Advanced Placement coursework. In addition to growth of IB in Missoula high schools, Lewis and Clark Elementary School was featured in the IB World Magazine as an exemplar school for the “principled action” that second grade students take toward becoming “globally minded citizens.” Second graders at Lewis and Clark this past year raised over \$2400 for the Bangura Project, which promotes the use of clean water practices in Sierra Leone. This story, among others, can be followed on [Twitter](#) @IBWorldmag using the hashtag #IBcommunitystories.



In the second quarter, there were several new developments in the Dual Language Immersion initiative. Notably, beginning in the 2017-2018 academic year, Paxson Elementary will fully immerse K-2 students in Spanish-English with 50% of their instruction in Spanish and 50% of their instruction in English as the school hired two new Spanish speaking teachers. Students in grades 3-5 will continue to receive one-third of their instruction in Spanish and two-thirds of their instruction in English. To bolster teachers’ efforts in tailoring learning for students, the final period of each day will be devoted to offering tiered support for students in both Spanish and English across the full range of subject areas taught. Over the past year, Paxson teachers—with their principal, Peter Halloran—have worked to streamline their dual language immersion model and refine their own learnings about student progress. To this end, teachers have committed to a two-day professional development workshop in August where they will score the SOPA/ELLOPA video interviews with students and explore how the results might reshape or refine the school’s curriculum and the teachers’ instructional practices. Drs. Kate Brayko and Pablo Requena will help facilitate this discussion and will incorporate research from the Center for Applied Linguistics in order to have a fruitful discussion. This will, no doubt, help lay a foundation for the process of designing and initiating dual language immersion programming at Washington Middle School. In the coming year, students new to Paxson will experience revised and brand new programming to support their Spanish-language learning. First, new students will be able to participate in a two-week “Spanish Boot Camp” taught by an MCPS Spanish teacher this summer. Second, students will be able to participate in a Spanish club after school that will be part of a practicum course Dr. Pablo Requena has designed for UM

students who are both interested in the process of learning Spanish and working with elementary aged children.

Within the teacher education program at UM, Drs. Requena and Brayko have continued to provide coaching for new immersion teachers and teacher candidates doing clinical work at Paxson. In fact, Dr. Brayko has also incorporated elements of Indigenous language dual language immersion in the Early Literacy (P-3) course she teaches. This spring her class wrote a book incorporating Cree vocabulary, which they had learned from students on the Rocky Boy reservation. Brayko has disseminated her findings through international conference presentations with Dr. Jingjing Sun as well as co-authoring a presentation to be delivered at MEA-MFT this fall with graduate student, Navin Mandahir.



The Global Competence initiative has focused on outreach and the creation of the Global Learning Summer Institute during the second quarter. Jeanne Loftus and her staff at the University met with seven rising seniors and 10 parents in the area about the Global Learning Pathway, UM's new IB articulation standards, and opportunities for studying abroad during the first year of college. Loftus has also been working to identify partner universities that are interested in hosting first year students and whose primary language of instruction is

English and/or Spanish. In addition to amplifying study abroad opportunities for Global Learning Pathway students, Loftus has revamped the Global Learning Summer Institute, which runs from 10-21 July 2017. This two-week program is geared toward MCPS rising ninth through twelfth graders, bringing them to UM's campus to engage with global issues and university faculty, while asking them to work on a competitive project focused on solving a specific social issue. Groups will present their projects on 21 July, competing for \$1500 in prize money. Seven MCPS students, two MCPS teachers, four UM students, and 14 UM faculty, staff, and administrators are participating in the Institute. MCPS faculty and students who have participated in the Institute will share their experiences with the school board at an August meeting.



Work in the STEM initiative has continued to focus on Project Lead the Way (PLTW) and computational thinking during the second quarter. Fully integrating PLTW into the teacher education curriculum at UM for candidates who will become licensed K-8 teachers, Dr. Lisa Blank has likewise worked with Big Sky High School and Dr. Rich Bridges in the UM

Department of Biomedical and Pharmaceutical Sciences to co-sponsor a PLTW biomedical conference for high school students who presented their capstone projects, which they completed in collaboration with UM biomedical faculty. Dr. Blank has also provided PLTW Launch trainings for K-5 teachers. Two of the trainings were held in Missoula, one was held in Billings, and one was held in Bozeman. Area schools are supporting these teachers, making more than 15 modules available to use in K-5 classrooms in science, technology, engineering, and math. At the secondary level, two high school teachers and three middle school teachers completed PLTW training in preparation for courses they will be teaching in the fall of 2017. To understand how teachers are implementing PLTW and the effects of PLTW on student achievement, Dr. Blank and doctoral candidate Kory Johnston have been conducting collaborative research. Currently, they are preparing an article manuscript entitled, "Project Lead the Way: Montana Outcomes for STEM Learning," which looks at MontCAS student testing data across PLTW Launch pathways. Johnston has received Internal Review Board approval to begin her dissertation work on how teachers are using PLTW in their classrooms. She will begin collecting interview data in the fall of 2017 with elementary principals in MCPS where she teaches. Like UM, MCPS is keenly interested in her findings in order to refine STEM offering and support for teachers.

As part of the computational thinking component of the STEM initiative, Dr. Blank worked with Dr. Yolanda Reimer of UM's Computer Science department as well as computer science faculty from Montana State University, Montana Tech, and Salish Kootenai College to offer a professional development course in Python programming for 20 teachers 12-16 June 2017. Teachers from Missoula, Broadview, Polson, Wolf Point, Glasgow, Red Lodge, Corvallis, Arlee, Ronan, and Stanford participated. Four of these teachers will be teaching Python to their high school students this coming fall. As they do this, Dr. Blank will collect and analyze data to evaluate the UM course.



On 5-6 June, Karen Erickson from the Kennedy Center conducted, "Mapping the Journey: Planning Effective Residencies for Students" for teaching artists in theatre, dance, visual art, music, storytelling, and media arts.¹ This workshop, which is part of a four-part series on arts integration, was designed to help teaching artists more consistently work with

¹ Though not directly funded by SHAPE, 30 full-time and five part-time graduate students attended courses in the Creative Pulse graduate program, during summer 2017. 98% of the graduate students are K-12 classroom teachers and arts specialists from Montana and throughout the country. Arts Integration Seminars included "The Body and It's Role in Learning", "Drama in the Classroom," "Digital Technology in the Arts," and "Art & Insanity." In addition to participating in these seminars, graduate students attended Arts Apprenticeships in singing, creative movement, clay, and artistic books. The apprenticeships highlighted artistic processes (Explore, Create, Perform, Respond) and integrated thinking skills (creative thinking, critical thinking, collaboration and communication).

classroom teachers in integrating the arts throughout the curriculum.

UM and MCPS sent two teaching artists and three classroom teachers to the Kennedy Center in Washington, DC. Tabitha Beard, a visual art teacher, Jordan Dehline, a dance teaching artist, Mindy Hammitt, seventh grade teacher at CS Porter, MaryBeth Jourdonnais, Kindergarten teacher at Hawthorne, Kinza Cusic, primary teacher at Lowell, and Chief Charlo principal, Vinnie Giammona, attended a training seminar for teaching artists at the Kennedy Center in Washington, DC on 26-28 June. Those attending the seminar in DC will design arts integration strategies. In conjunction with this, Jackalynn Snow and Julie Robitaille of MCPS worked with K-8 principals to map out an arts integration plan to roll out during the 2017-2018 academic year. This roll out will be evaluated the subsequent fall.



Over the past quarter, work in Early Interventions has been focused on the expansion of Parent Teacher Home Visits among MCPS elementary schools and ongoing research that supports parents and teachers in working with three to five year-olds. In the 2016-2017 academic year, kindergarten teachers at Rattlesnake Elementary conducted home visits for each new kindergarten student, which resulted in a very positive parent response. This same year, kindergarten teachers at Franklin and Paxson Elementary Schools completed their first year with Academic Parent Teacher Teams to which students and their families responded very favorably, and which resulted in academic improvement for students. In the 2017-2018 academic year, the Academic Parent Teacher Teams will expand to all grade levels at Paxson, and teams from Chief Charlo and Hawthorne Elementary Schools.

Work at UM during the second quarter has focused on the development of a research design for the implementation of early screener by parents and teachers. With the hiring of a graduate assistant and the submission of the research proposal to the Institutional Review Board at UM, research will be ramped up in the third and fourth quarters. In addition to the ongoing review of digital providers and materials that might deliver and/or complement the early interventions assessment, Dr. Atkins has been talking with programmers in Washington, DC about developing a possible app for the screener.



The work for the Universal Design for Learning (UDL) initiative has continued to train pre- and in-service teachers as well as provide training for UM faculty. Dr. Morgen Alwell is teaching C&I.518: Inclusion and Collaboration, which has eight secondary teachers, 10 elementary teachers, nine preschool teachers, two administrators, and two doctoral students. This

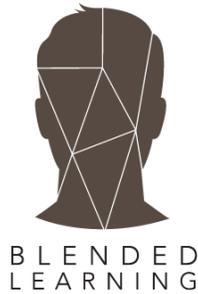
course is designed around UDL principles that utilize multiple modalities for instruction and learning. With this summer's 31 preschool, elementary, and secondary teachers incorporating UDL practices into their pedagogies, over 1000 students will have the opportunity to experience a robust, fully inclusive learning environment. Multiplied over multiple semesters, thousands of K-12 students will benefit. In addition to teaching Inclusion and Collaboration, Dr. Alwell has been working with Dr. Trent Atkins in Teaching and Learning and Dr. Dan Lee Educational Leadership to design a course for teacher-leaders on inclusive practices in conjunction with the Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR). They anticipate piloting the course in the coming year. Currently, Dr. Alwell is in the process of planning for two research projects that examine the implementation and impact of UDL in K-12 settings and a faculty inquiry group that supports university faculty in adopting UDL practices in their teaching.

Coupled with Dr. Alwell's work, MCPS sponsored a Google Fest in April and identified pairs of teachers from CS Porter Middle School and Cold Springs and Hawthorne Elementary Schools to receive in-depth training and support in co-teaching to more deeply implement UDL and create laboratory classrooms model effective, inclusive practices. The Google Fest highlighted two instructional tools oriented for inclusion that teachers across subject areas and grade levels can use: [Read and Write](#), a browser plugin, and [Bookshare](#), a site that offers over 500,000 accessible books.



As noted in the quarter one report for this year, the Professional Learning Communities initiative is transitioning at the University, and it will likewise take on a new focus in MCPS. As a result of our joint participation in the Carnegie Foundation's annual summit on improvement in education, UM is in the process of designing a user experience research study examining professional development for new and seasoned teachers. In this study, we will investigate the process of becoming a teacher and the process of teacher professionalization through PLCs and other forms of professional development. Through a robust literature review, the creation of journey maps, interviewing pre- and in-service teachers and principals, and through participant observation, we anticipate being able to develop methods of professional development and processes in PLCs grounded in improvement science.² Within MCPS, K-12 teachers will have time daily during the 2017-2018 academic year for team collaboration to focus on shared units of study. Teachers will work across grade levels to create vertically-aligned formative assessments and lesson activities with which teachers will use common grading practices.

² Anthony Bryk, et al. *Learning to Improve: How America's Schools Can Get Better at Getting Better*. Cambridge, M.A.: Harvard University Press, 2015.



During the second quarter, the Montana Digital Academy wrapped up its course on blended learning for teacher and school administrators this spring with four teams from Lolo, Hamilton, and Whitefish completing the class (three administrators and five teachers). The teams developed blended learning projects, which ranged from kindergarten teachers using technology to add depth to their reading lessons to high school students using blended learning to earn advanced college credits to middle school students using technology centers to differentiate their learning experiences.

Within MCPS Hellgate and Big Sky High Schools have purchased Chromebook carts to support IB students. Teachers at these schools participated in the 2015 and 2017 Google Cadres to bolster their use of digital learning tools through Chromebooks.