The Minnesota Numeracy Initiative
Overview and Design

Prepared for:

LINCS Region 1 Regional Resource Center
Office of Vocational and Adult Education
U.S. Department of Education

Prepared by:

Kimberly A. Johnson, PhD
ATLAS Director
Hamline University School of Education

www.atlasABE.org

ACKNOWLEDGEMENTS

The Minnesota Numeracy Initiative

Table of Contents

The Minnesota Numeracy Initiative

Background

The National Assessment of Adult Literacy included a sobering statistic about numeracy in the United States: over 60% of adult learners lacking a high school diploma had *Below Basic* quantitative literacy, meaning that these adults struggled when "locating numbers and using them to perform simple quantitative operations (primarily addition) when the mathematical information is very concrete and familiar" (Kutner, Greenberg & Baer, 2006, p. 3). This and other research makes a compelling case for a need to confront and improve numeracy instruction for adult learners (Ginsburg, 2011; Tamassia, Lennon, Yamamoto & Kirsch, 2007). There is also agreement that learner needs can be addressed, at least in part, through education and professional development for adult education teachers that delivers focused, sustained math content and pedagogical preparation for teaching numeracy (Condelli, et al., 2006; Ginsburg, 2011; Swan & Swain, 2010).

The need for professional development around numeracy instruction is no different in Minnesota than it is in other states. Especially with the increasing emphasis on transitioning learners into postsecondary education and the speculation about changing requirements for the GED, state professional developers had plenty of anecdotal evidence that ABE teachers were looking for assistance with effective teaching of numeracy. Data from a statewide survey of ABE practitioners to identify background and professional development needs provided confirmation (Marchwick, 2010) that teachers lacked confidence in teaching numeracy and were looking for professional development to help.

The Minnesota Response

ABE in Minnesota is housed in the Minnesota Department of Education, and approximately 80% of MN ABE teachers hold teaching licenses, primarily in K-12 education. Professional development (PD) is provided through a multi-level system (state, region, local) and many practitioners look for PD opportunities to collect Continuing Education Units (CEU) to retain their teaching licenses. In collaboration with the state ABE PD Specialist, statewide PD activities are coordinated primarily through ATLAS (ABE Teaching and Learning Advancement System) at the Hamline University School of Education. ATLAS receives federal and state funding as a MN ABE Supplemental Service Provider to facilitate delivery of resources and PD activities to ABE teachers, administrators and support staff across the state.

In response to the need for numeracy PD in MN, state professional developers Dr. Kimberly Johnson, ATLAS Director, and Astrid Liden, ABE PD Specialist at the Minnesota Department of Education, designed and developed the Minnesota Numeracy Initiative, or MNI. In addition, four leaders in math instruction in MN from multiple contexts in the state, including large urban programs with scheduled and leveled classes, urban ESL, and a small rural drop-in environment,

were invited to form an MNI Advisory Team. The Advisory Team met for two full-day face-to-face meetings (at the start and again mid-year) and held monthly conference calls to provide content expertise and experience, advise on aspects of development, and to assist with the formative evaluation of MNI. To facilitate communication between meetings or conference calls, the MNI Advisory Team created and used a Wiggio group (Wiggio is a free online program designed to facilitate group work; information available at Wiggio.com).

Designing the Minnesota Numeracy Initiative (MNI)
All PD projects at ATLAS draw on research-based principles of effective PD (Desimone, 2009; Smith & Gillespie, 2007; Timperley, 2008; Wei, Darling-Hammond & Adamson, 2010), including a focus on duration, active learning, and subject matter content. Building on these principles, Sherman, et al. (2007) reviewed multiple adult numeracy PD initiatives across the country and identified principles of effective PD efforts specific to numeracy teaching. The design, delivery and evaluation of MNI relied primarily on these principles, which informed every aspect of the development of MNI with one major exception: MN does not currently have content standards for ABE so we were unable to integrate this into our PD work. Features of effective numeracy PD design are listed below (additional information can be found in Sherman, et al., 2007, pgs. 67-71):

- Provide multiple-session activities over an extended period of time with extended contact hours
- Use the internet and distance learning components
- Use instructional modeling and demonstration
- Develop learning communities in small geographical areas

- Implement standards-based professional development
- Integrate with other state activities
- Use an expert model coupled with the train-the-trainer model
- Implement active learning
- Assess instructor change
- Share materials to support continued learning

In designing MNI, we considered multiple factors in addition to the features of effective numeracy PD identified above, namely, efficiently using resources available to us; intentionality around sustaining and evaluating MNI; integration of MN ABE PD standards (available at http://www.atlasabe.org/pd-system/mnabe-professional-development-standards); and consideration of the potential impact of multiple competing PD activities that required time and energy from teachers and administrators. Finally, we considered other statewide PD goals and sought to integrate these into MNI, including increasing the comfort with participation in online learning and "growing" a cadre of numeracy PD providers for MN. With these in mind, we identified the following goals and objectives for MNI:

MNI Goals:
- Improved outcomes for learners through more effective numeracy instruction
- Strengthened math content knowledge and self-confidence for teachers
- Increased awareness of effective instructional strategies
- Enhanced collegiality and professionalism through collaboration
- Expanded collection of activities and lessons for practitioner use

MNI Objectives

Upon completion of MNI, participants will have:

1. strengthened math content knowledge
2. implemented effective adult numeracy instructional strategies in their classrooms
3. increased self-confidence with teaching numeracy
4. contributed to and created an ongoing, statewide electronic Community of Practice (eCoP) for professional networking, general communication, and housing and sharing resources related to numeracy
5. expanded networking and collaborative opportunities with peers
6. gained experience and confidence in providing numeracy PD
7. gained an increased level of comfort and confidence with participating in online PD

To meet our goals and objectives, MNI had three components: online courses, an electronic community of practice using Wiggio, and partner/peer mentor activities. These were organized into three phases over the course of an academic year (August – April). Highlights and activities for each of the three phases are posted below.

MNI Overview

Minnesota Numeracy Initiative		
Phase 1 *August – December*	**Phase 2** *December – February*	**Phase 3** *February – April*
• participant recruitment and selection • full-day, face-to-face, kick-off meeting • online course 1 (*Foundations of Teaching Adult Numeracy*) • weekly partner meetings during course 1 • webinar at the end of online course • ongoing participation in MNI Wiggio	• participant self-assessments and reflections on effective numeracy instruction • peer mentor/partner observations • ongoing participation in MNI Wiggio	• online course 2 (*Teaching Reasoning and Problem-Solving Strategies* • weekly partner meetings during course 2 • partner project • presentation of project at final full-day, face-to-face meeting • ongoing participation in MNI Wiggio

A detailed plan for the year's activities was created using a template that linked activities and evaluation to each specific objective of the project. This plan was used as a guide throughout the year and was a useful document for the professional developers. For participants, we developed an MNI syllabus that was distributed at the initial kick-off meeting. The syllabus provided a detailed plan and expectations for the MNI teachers. A copy of the plan and syllabus as well as agendas and tools for each phase are available in Appendices A-D.

Funding and Resources

Participants in PD activities in MN typically receive no compensation. For those with a teaching license, CEUs are needed to maintain teaching licenses. In addition to offering CEUs for participation, and because of the intense nature of MNI, ATLAS provided a $500 stipend to 24 participants who completed all components of the year-long activity. (Note: Teachers from the MN Department of Corrections are not permitted to accept stipends for PD participation, so we purchased numeracy materials for their classrooms instead.) An additional stipend was awarded to participants on the Advisory Team. As a state-level activity, MNI was funded through ATLAS, and ATLAS covered costs for the online courses and travel reimbursements for participants living outside the greater Twin Cities metropolitan area. Reimbursements for the cost of substitute teachers were also made available to programs to allow MNI teachers to attend two face-to-face meetings or if they needed to cover their own classes in order to do observations of MNI colleagues.

Generous support from LINCS Region 1 Regional Resource Center (RRC1) funded by the Office of Vocational and Adult Education (OVAE), U.S. Department of Education, made it possible to expand and evaluate MNI in meaningful ways, in particular the ability to bring course facilitators to MN for two face-to-face meetings with the cohort and to cover the cost of an outside facilitator to evaluate the effectiveness of the project. Evaluation is a critical yet often overlooked component of PD; our extensive evaluation of MNI would not have been possible without LINCS RRC1 support. For that we are very grateful.

Evaluation

Evaluation of PD activities is another important component of the work at ATLAS, and we utilize a framework adapted from Guskey (2002) for evaluation. The design of the MN PD evaluation pyramid illustrates how lower levels provide a foundation for reaching our ultimate aim of impacting student learning (see Appendix E). For example, *Level 1: Participants' Reactions* represents a measure of PD impact typically found in end-of-training evaluations; this may not be a way to measure the impact on student learning, yet we know that if participants are not satisfied with the training experience itself (the room is too cold, they can't hear the trainer, or they are bored), it often distracts from the goal of teacher learning.

Each of the additional layers works this way and supports the level above it. It is important to recognize that although success at lower levels is often necessary before results can be observed at higher levels, it is not enough to assess any one level; it is critically important in our view to track the effectiveness at each level of the model (Guskey, 2000).

For MNI, evaluation was built into the project from the beginning. With each activity designed to meet specific objectives, we considered the levels of evaluation that we sought to assess and the appropriate evaluation measures by which to assess each activity. In addition, we took the time to create a detailed list of evaluation questions to structure our evaluation. For each, we identified the audience, the data needed, and the purpose of the question (W.K. Kellogg Foundation, 2004). Data were collected frequently and in multiple ways, to provide the information needed to evaluate MNI. Data collected included:

- Pre- and post-survey for the overall project (final post-MNI survey also included questions to evaluate Phase 3)
- Weekly notecards (brief report from weekly partner meetings)
- Postings on Wiggio
- Course content such as discussion board postings and assignments
- Participant reflections and self-assessment on effective numeracy instruction
- Mini-survey following Phase 1
- Mini-survey following Phase 2

Sally Waldron of World Education served as our outside evaluator. She reviewed the collected data, held conference calls with the state team as needed, and was present for the final meeting in April where she met participants and observed final partner projects. She is currently drafting a final report. Evaluation tools are included in the Appendix E.

Findings and Reflections
Data collected were used for both formative and summative evaluation. Throughout the pilot year, we collected and considered data to inform next steps or make needed changes. For example, we were not certain how participants would react to the required partner meetings and submission of weekly notecards during the first online course. The mini-survey of Phase 1 and comments from teachers indicated that participants were meeting regularly and they valued the time with a partner. For that reason, we continued the practice for the second online course. In addition, data collected on various components also yielded valuable information to inform the planning and design of MNI for subsequent years.

All of the data collected also provided enough information to evaluate the MNI Project as a whole and to ascertain whether we had or had not met the project objectives. Although the final report has not been completed, key findings have been identified from the outside evaluation of MNI (notes from Sally Waldron; the full evaluation report for MNI will be completed in fall 2011). These findings – listed below – confirm that we have indeed met the objectives established for MNI:

- MNI reflects the features of effective professional development including duration, content focus, active learning, coherence, job-embedded, collective and collaborative, and technology-supported.
- MNI is based on sound adult numeracy pedagogy.
- Participants strengthened their math content knowledge based on their participation in MNI.
- Participants implemented effective and more varied adult numeracy instructional strategies in their classrooms.
- Participants increased their self-confidence and comfort with teaching adult numeracy.
- Participants created and contributed to an ongoing, statewide virtual Community of Practice that expanded networking, communication, resource sharing, and collaboration with their peers.
- Participants gained experience providing numeracy professional development and some are now more willing to provide numeracy professional development.
- Participants gained comfort and confidence with participating in online professional development.
- Participants can describe impacts on their adult learners resulting from implementing MNI practices in their classrooms.

The pilot year of MNI was a resounding success. Analysis of the quantitative and qualitative data collected indicates that we met our objectives, and participation in MNI has resulted in teachers changing their practices related to numeracy instruction. We are confident that the overall project model is strong and are especially pleased at the value of the partner activities integrated into the project. It was very rewarding to observe the partners and colleagues at the final meeting interact and engage with the topic and with each other. This was also apparent at the ABE Summer Institute, where many of the MNI teachers connected again and, as reported to me by one of the teachers, "We all talked about math whenever we saw each other. It was so fun!" A PD initiative that generates that much positive energy is very rewarding.

One aspect of MNI that we will consider revising for future years involves the use of the Wiggio for our eCoP. We considered multiple tools, but opted for Wiggio based on our own experiences and its familiar structure (very much like Facebook) and the fact that it is available for no cost. There is great value in utilizing an eCoP, and participants in distant areas of the

state found it especially helpful to stay connected to colleagues.   At the end of the year, the cohort has an eCoP site full of interesting resources and a way to stay connected to this particular group of individuals. There were challenges, though, to using the eCoP. One is the redundancy of having a discussion board at the Wiggio and a separate discussion board for the courses that participants were required to use. But the course discussion board closes with the course, so the Wiggio offers something that is more permanent. Overall, then, it is not the need for an eCoP that we question, but whether Wiggio is the best choice.

Most people did not use the Wiggio with any regularity. Some, including the teachers from the MN Department of Corrections, had trouble accessing the Wiggio from their workplaces. One unanticipated difficulty was a change in the Wiggio format midway through the year that required time for everyone to re-learn the functions. None of these are so serious nor has any other free online site for group work emerged that is clearly superior. Thus, for the upcoming year, we have chosen to continue using the Wiggio but will watch closely and reevaluate for the future.

Finally, the findings from the outside evaluation provide confirmation of the value of this model of PD for future initiatives. It has been inspiring to witness the growth in confidence and collegiality that have emerged from the first year. Just a brief example: It has always been a struggle to find facilitators to present at workshops and share teaching strategies around numeracy. After MNI, ten participants presented on something learned or developed during MNI at the statewide ABE Summer Institute in August 2011; two of the five presentations were facilitated together by teachers from different contexts who had never worked together before. For these reasons and more, ATLAS has added funding to run MNI with a new cohort for 2011-2012 using the same model.

Next Steps
In addition to recruiting a new cohort for MNI in 2011-2012, we are very interested in finding ways to sustain the initiative and support teachers who have participated in MNI, so all completers are eligible to participate in a second year of MNI. MNI Year 2 is informed by the same principles of effective numeracy PD and is being developed with input from the MNI Advisory Team and MNI participants. Although the plans are not yet finalized, MNI Year 2 will have a fall and spring component, and participants may choose to participate in one or both. In the fall, MNI teachers will participate in an additional online course and webinar; in the spring MNI teachers will do practitioner research projects. These will be bookended by a fall meeting at the start and a spring meeting at the end of the year. Objectives for MNI Year 2 and draft plans are presented below.

MNI Year 2 Objectives - Fall

Upon completion of MNI Year 2, participants will have:

1. improved use of effective instruction for numeracy teaching, especially for algebra
2. contributed to and sustained an ongoing, statewide electronic Community of Practice (eCoP) for professional networking, general communication, and housing and sharing resources related to numeracy
3. maintained and strengthened cohort collaboration and relationships
4. gained experience and confidence in providing numeracy PD through presentations of learning or research projects

MNI Year 2 Objectives - Spring

Upon completion of MNI Year 2, participants will have:

1. conducted a practitioner research project, including identifying a research question, outlining a manageable and appropriate method to investigate that question, and collecting and analyzing results
2. contributed to and sustained an ongoing, statewide electronic Community of Practice (eCoP) for professional networking, general communication, and housing and sharing resources related to numeracy
3. maintained and strengthened cohort collaboration and relationships
4. gained experience and confidence in providing numeracy PD through presentations of learning or research projects

MNI Year 2 Overview

Activity	Timeline
F2F workshop • Meet to reconnect as a cohort • Preview the year's activities and expectations • Bring in an outside expert to deliver workshop on algebraic thinking	Sept 2011
Online course: ***Algebra: Introducing Algebraic Reasoning***	Sept – Nov 2011
Partner work + Wiggio community	ongoing
Webinar	Jan 2012
Practitioner research – investigating numeracy issues in your own classroom • Potential option to earn graduate credit through Hamline • Final product to be presented at springF2F meeting (written products for ATLAS website)	Jan – Apr 2012
F2F meeting • Presentations • At least part of meeting to be combined with MNI 12 final meeting	Apr 2012

References

Condelli, L. , Safford-Ramus, K., Sherman, R., Coben, D.; Gal, I., & Hector-Mason, A. (2006). *A Review of the Literature in Adult Numeracy: Research and Conceptual Issues*. Washington, D.C.: American Institutes for Research.

Desimone, L.M. (2009). Improving Impact Studies of Teachers' Professional Development: Towards Better Conceptualizations and Measures. *Educational Researcher 38*(3), pp. 181-199

Ginsburg, L. (2011). Adult numeracy demand & provision. In G. Spangenberg (Ed.) *Adult Numeracy: A Reader: Four Papers from CAAL's January 2011 Roundtable on Adult Numeracy.* Council for Advancement of Adult Literacy. Available: http://www.caalusa.org/Adult.pdf

Guskey, T. R. (2002). Does it make a difference? Evaluating professional development. *Educational Leadership*, 59(6), 45-51.

Guskey, T. R. (2000). *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press.

Kutner, M., Greenberg, E. & Baer, J. (2006). *National Assessment of Adult Literacy (NAAL): A first look at the literacy of America's adults in the 21st century* (NCES 2006-470). Washington, D.C.: National Center for Education Statistics, U.S. Department of Education. Available at: http://nces.ed.gov/NAAL/PDF/2006470.PDF

Marchwick, K. (2010). *Charting the Future - Minnesota's ABE Workforce: Professional Experience, Challenges and Needs.* Adult Basic Education Teaching and Learning Advancement System (ATLAS) report. Available at: http://www.atlasabe.org/pd-system/research-surveys/abe-practitioner-survey-2009

Sherman, R., Safford-Ramus, K., Hector-Mason, A., Condelli, L., Olinger, A., & Jani, N. (2007). *An Environmental Scan of Adult Numeracy Professional Development Initiatives and Practices.* Washington, D.C.: American Institutes for Research.

Smith, C. & Gillespie, M. (2007). Research on Professional Development and Teacher change: Implications for Adult Basic Education. *Review of Adult Learning and Literacy,* 7. Available at: http://www.ncsall.net/fileadmin/resources/ann_rev/smith-gillespie-07.pdf

Swan, M. & Swain, J. (2010). The impact of a professional development programme on the practices and beliefs of numeracy teachers. *Journal of Further and Higher Education 34*(2), 165-177.

Tamassia, C., Lennon, M., Yamamoto, K. & Kirsch, I. (2007). *Adult Literacy in America: A First Look at Results from the Adult Education Program and Learner Surveys.* Princeton, NJ: Educational Testing Service. Available at: http://www.ets.org/Media/Research/pdf/ETSLITERACY_AEPS_Report.pdf

Timperley, H. (2008). Teacher professional learning and development. *Educational Practices Series-18.* Brussels, Belgium: International Academy of Education. Available at: http://www.ibe.unesco.org/fileadmin/user_upload/Publications/Educational_Practices/EdPractices_18.pdf

Wei, R. C., Darling-Hammond, L., and Adamson, F. (2010). *Professional Development in the United States: Trends and Challenges*. Dallas, TX: National Staff Development Council.

W.K. Kellogg Foundation (2004). *Logic Model Development Guide: Using Logic Models to Bring Together Planning, Evaluation, and Action*. Battle Creek, MI: W.K. Kellogg Foundation.

Appendix A

MNI Goals:

- Improved outcomes for learners through more effective numeracy instruction
- Strengthened math content knowledge and self-confidence for teachers
- Increased awareness of effective instructional strategies
- Enhanced collegiality and professionalism through collaboration
- Expanded collection of activities and lessons for practitioner use

MNI Objectives

Upon completion of MNI, participants will have:

1. strengthened math content knowledge
2. implemented effective adult numeracy instructional strategies in their classrooms
3. increased self-confidence with teaching numeracy
4. contributed to and created an ongoing, statewide electronic Community of Practice (eCoP) for professional networking, general communication, and housing and sharing resources related to numeracy
5. expanded networking and collaborative opportunities with peers
6. gained experience and confidence in providing numeracy PD
7. gained an increased level of comfort and confidence with participating in online PD

MNI aligns with following MN ABE PD Standards:

STANDARD #1: Deepens and broadens practitioners' knowledge of content areas, instructional strategies, new trends and initiatives in ABE, and assessment strategies based on research and professional wisdom to help learners meet their goals.

STANDARD #2: Prepares ABE staff to create supportive learning environments and hold high expectations for all students.

STANDARD #3: Multiple sources of data are collected and used to determine state priorities, monitor progress, and promote continuous improvement.

STANDARD #4: Uses multiple evaluation strategies to measure impact and guide improvement of future professional development.

STANDARD #5: Enhances practitioners' abilities to evaluate and apply relevant data, research, theory, evidence-based practices, and professional wisdom to their work.

STANDARD #6: Is well designed in that it takes place over time; encourages reflection and application; uses teaching and learning strategies appropriate to the intended goals; and employs a variety of delivery approaches and methods.

STANDARD #7: Models theories of adult learning and development.

STANDARD #8: Fosters program, community, regional, state and national level collaboration.

STANDARD #9: Builds learning communities that foster collaboration, peer learning, and support among practitioners.

STANDARD #10: Leadership at the state and local levels promotes effective professional development.

STANDARD #11 – draft: Provides policies, guidelines and resources to support ABE staff in accessing and benefiting from quality professional development.

STANDARD #12 – draft: Encourages and promotes comfort and effective use of technology for instructional use and professional development

MNI Components

1. **Online courses** - *Foundations of Teaching Adult Numeracy* and *Teaching Reasoning and Problem-Solving Strategies*
2. **Electronic Community of Practice –** Wiggio group for during and beyond courses
3. **Peer mentor & partner activities** – during and between courses

MNI Objective 1: Participants will strengthen or acquire new math content knowledge.		
Levels of evaluation: Teacher learning; Organizational supports; Teacher use of new knowledge and skills		
Activity	**Evaluation**	**Notes**
Online course #1: *Foundations of Teaching Adult Numeracy* a. Describe three components of numeracy – context, content, cognitive & affective b. Understand and address needs of learners with learning gaps in math c. Recognize how styles and levels of knowledge affect students' math skills d. Explain ways to build students' skills in the components of numeracy	• Course evaluation tools & assignments, including quizzes, tests, journals, assignments, and discussion board postings • Phase 1 survey (after course 1) •	• Course includes opportunity to write a math autobiography and discussion about teacher and student self confidence • Courses will include facilitated opportunities to create and implement activities and instructional strategies
Online course #2: *Teaching Reasoning and Problem-Solving Strategies* a. Understand how adults solve math problems b. Build students comfort and skills in numeracy c. Use reasoning and problem-solving strategies and activities in teaching	• Course evaluation tools & assignments, including quizzes, tests, journals, assignments, and discussion board postings • Phase 3 survey (after course 2)	• Course content includes specific instructional strategies related to reasoning and problem-solving • Courses will include facilitated opportunities to create and implement activities and instructional strategies
F2F October 15	• Turning Point (clickers)- polling of beliefs about math instruction • End of day evaluation	
F2F April 29	• Clickers, polling of math knowledge • End of day evaluation	• Since we want to groom numeracy facilitators, we should include presentation/effective facilitation skills • Final presentation by partners could maybe include a rubric for effective presentation; audience members assess and provide

	feedback	

MNI Objective 2: Participants will implement effective adult numeracy instructional strategies in their classrooms.

Levels of evaluation: Teacher learning; Organizational supports; Teacher use of new knowledge and skills

Activity	Evaluation	Notes
Online course #1: *Foundations of Teaching Adult Numeracy* a. Describe three components of numeracy – context, content, cognitive & affective b. Understand and address needs of learners with learning gaps in math c. Recognize how styles and levels of knowledge affect students' math skills d. Explain ways to build students' skills in the components of numeracy	• Course evaluation tools & assignments, including quizzes, tests, journals, assignments, and discussion board postings • Phase 1 survey (after course 1) •	• Course includes opportunity to write a math autobiography and discussion about teacher and student self confidence • Courses will include facilitated opportunities to create and implement activities and instructional strategies
Online course #2: *Teaching Reasoning and Problem-Solving Strategies* a. Understand how adults solve math problems b. Build students comfort and skills in numeracy c. Use reasoning and problem-solving strategies and activities in teaching	• Course evaluation tools & assignments, including quizzes, tests, journals, assignments, and discussion board postings • Phase 3 survey (after course 2)	• Course content includes specific instructional strategies related to reasoning and problem-solving • Courses will include facilitated opportunities to create and implement activities and instructional strategies
Peer mentoring (between courses) One required observation each way; each partner completes self-assessment tool, peer observes (give them observation tools to choose from), post-observation meeting Process: 1. Self-assessment 2. Pre-observation meeting (can be virtual or f2f) 3. Observation 4. Post-observation meeting (can be virtual or f2f) 5. Reflection	Before the start of course #2, participants will turn in their original self-assessment and the post-observation reflection	All observation tools and self-assessment tools posted on Wiggio
F2F April 29	• Partner presentations	

The Minnesota Numeracy Initiative, ATLAS, © 2011

MNI Objective 3: Participants will have increased self-confidence with teaching numeracy.		
Levels of evaluation: Teacher learning		

Activity	Evaluation	Notes
Online course #1: *Foundations of Teaching Adult Numeracy* **Online course #2**: *Teaching Reasoning and Problem-Solving Strategies*	• Math autobiographies • Phase 1 survey (after course 1) • Phase 3 survey (after course 2)	• Course includes opportunity to write a math autobiography and discussion about teacher and student self confidence
Peer mentor observations and support (in part) to build confidence	• Self-assessments and reflection • Post-observation assignments	

MNI Objective 4: Participants will have contributed to and created an ongoing, statewide virtual CoP for professional networking, general communication, and housing and sharing resources related to numeracy.		
Levels of evaluation: Teacher learning; Teacher use of new knowledge and skills		

Activity	Evaluation	Notes
MNI Wiggio for posting/sharing resources: 1. Lesson bank – lesson ideas 2. Activity bank – activities from courses, etc. 3. All peer mentoring observation tools and self-assessment tools 4. General numeracy resources	• Resources posted	
MNI Wiggio for communication/professional networking 1. Discussion board and messaging 2. Chat room; virtual communication	• Use of communication tools	• Monitor how much this is used - tally posts? • Qualitative look at exchanges on message board. • Include questions about using Wiggio for communication in final MNI evaluation

MNI Objective 5: Participants will have expanded networking and collaborative opportunities with peers.		
Levels of evaluation: Teacher learning; Teacher use of new knowledge and skills		
Activity	**Evaluation**	**Notes**
Peer mentors (during online course #1) Weekly meetings during online courses to review assignments for course, share lessons, concerns, trouble-shoot, Suggested discussion questions: (to help provide structure for those who don't know what to talk about) • What were your big a-has this week in the course? • How does what you learned this week relate to your course or your students? How will you use it? • What are you confused about? • What questions do you still have?	Weekly notecard submitted following the meeting (2 questions) 1. What did you do during this time? 2. What resources do you need? What questions do you have?	Evaluation of this process following the first course to reassess whether and how to do this for the second course: • What were the benefits of the weekly meetings? Challenges? • How did the weekly meetings support you in your online learning and/or completing the online course? • Do you have suggestions for next time?
Peer mentoring (between courses) One required observation each way; each partner completes self-assessment tool, peer observes (give them observation tools to choose from), post-observation meeting Process: 1. Self-assessment 2. Pre-observation meeting (can be virtual or f2f) 3. Observation 4. Post-observation meeting (can be virtual or f2f) 5. Reflection	Before the start of course #2, participants will turn in their original self-assessment and the post-observation reflection	All observation tools and self-assessment tools posted on Wiggio

Peer mentors (during online course #2)
 	
• Continued weekly meeting
• Perhaps collaborative resource development, tied to a mini-presentation (content TBD) to present at the April wrap-up meeting.
	1. Weekly notecard (from first course)
	2. Final presentation at wrap-up meeting
	   a. Actual presentation and/or resource produced
	   b. Associated resources, final products posted on Wiggio
		Evaluation of this process following the second course:
		
		• What were the benefits of the weekly meetings? Challenges?
		• How did the weekly meetings support you in your online learning and/or completing the online course?
		• Do you have suggestions for next year?

MNI Objective 6: Participants will have gained experience and confidence in providing numeracy PD		
Levels of evaluation: Teacher learning; Teacher use of new knowledge and skills; Organizational supports		
Activity	Evaluation	Notes
Collaborative resource development and peer presentations at April 29 wrap-up meeting	Final presentation at wrap-up meeting • Actual presentation and/or resource produced • Associated resources, final products posted on Wiggio	
Provide PD for peers at local and/or statewide venues	Brief report on PD provided; venue, topic, list of objectives and activities, number of participants	Since we want to groom numeracy facilitators, include presentation/effective facilitation skills • Final presentation by partners could maybe include a rubric for effective presentation; audience members assess and provide feedback

MNI Objective 7: Participants will have gained an increased level of comfort and confidence with participating in online PD.		
Levels of evaluation: Teacher learning		
Activity	Evaluation	Notes

Participation and completion of 2 online PD courses	1. Documented course completion and final grade
	2. Survey pre/post MNI:
	Use of technology
	   a. Currently use FB, Linked In, social networking site
	   b. Taken online courses
	   c. Discussion board or other discussion list
	   d. Webinar
	   e. Communication tools: chat, skype, online meeting
	Attitudes and comfort using technology
	   a. How frequently do you use any of the above tools?
	   b. Are you comfortable trying new tools?
	   c. How do you feel about trying the new Wiggio site?
		To encourage use of the Wiggio, the online courses will be linked through here

Participation in MNI wiggio	See above	

MNI 2010-2011 Syllabus

MNI Project Directors
Kimberly Johnson, ATLAS Director
School of Education, Hamline University
kjohnson60@hamline.edu
651-523-2646

Astrid Liden, ABE Professional Development
Specialist
Minnesota Department of Education
Astrid.Liden@state.mn.us
651-582-8424

MNI Project Administrator
Marisa Geisler, ATLAS Program
Administrator
School of Education, Hamline University
Mgeisler02@hamline.edu
651-523-2503

MNI Online Course Facilitator
Mary Barbara Hanna
mbwhanna@gmail.com

MNI Project Description and Goals

MNI is a multi-year initiative designed to improve the numeracy instruction for ABE learners in Minnesota. The goals for the 2010-2011 year include:
- Improved outcomes for learners through more effective numeracy instruction
- Strengthened math content knowledge and self-confidence for teachers
- Increased awareness of effective instructional strategies
- Enhanced collegiality and professionalism through collaboration
- Expanded collection of activities and lessons for practitioner use

MNI Project Outcomes

Upon completion of MNI, participants will have:
1. strengthened math content knowledge
2. implemented effective adult numeracy instructional strategies in their classrooms
3. increased self-confidence with teaching numeracy
4. contributed to and created an ongoing, statewide virtual community of practice for professional networking, general communication, and housing and sharing resources related to numeracy
5. expanded networking and collaborative opportunities with peers
6. gained experience and confidence in providing numeracy professional development (PD)
7. gained an increased level of comfort and confidence with participating in online PD

Process

1. Online courses

Course 1: *Foundations of Teaching Adult Numeracy*
> October 15 – December 3, 2010; course webinar: December 3 or December 7

Course 2: *Teaching Reasoning and Problem-Solving Strategies*
> February 25 – April 8, 2011

Objectives
Participants will:
1. Strengthen math content knowledge and self-confidence
2. Increase comfort and confidence with online PD
3. Create and implement numeracy activities and instructional strategies
4. Meet objectives for both courses:
    - Describe three components of numeracy – context, content, cognitive & affective
    - Understand and address needs of learners with learning gaps in math
    - Recognize how styles and levels of knowledge affect students' math skills
    - Explain ways to build students' skills in the components of numeracy
    - Understand how adults solve math problems
    - Build students comfort and skills in numeracy
    - Use reasoning and problem-solving strategies and activities in teaching

Expectations
- Schedule approximately 2-3 hours each week to work on the course
- Access the course at least 2 times per week
- Complete all course requirements

2. Electronic Community of Practice

MNI Wiggio: http://wiggio.com

Objectives
Participants will:
1. Participate in an ongoing, statewide virtual community of practice
2. Use the MNI Wiggio as a central place for professional networking, general communication, and housing and sharing resources
3. Increase comfort and confidence with using technology for PD

Expectations
- Access the online course through the MNI Wiggio
- Post resources and links that might be useful to others
- Post activities and lessons completed during the courses that may be useful to others
- Use discussion board and communication tools during and between courses

3. Partner activities

Objectives

Participants will:

1. Collaborate with a peer to complete online courses and apply course content
2. Observe other math instructors and share promising practices
3. Receive peer support in improving math instruction

Expectations

During online courses

- Weekly meetings with partner during online courses to review assignments for the course, share lessons, troubleshoot concerns, etc.
    - o Suggested discussion questions:
        - ▪ What were your big "a-ha's" this week?
        - ▪ How does what you learned this week relate to your class or your students? How will you use it?
        - ▪ What are you confused about?
        - ▪ What questions do you still have?
- Email weekly notecard to Kim and Astrid following your meeting by Friday of that week. Briefly answer the following questions:
    1. What did you do during your meeting?
    2. What resources do you need? What questions do you have?

Between online courses

- Observe each other's classes using the following process:
    1. Each teacher completes a self-assessment on effective numeracy teaching. Identify an area of teaching that you find challenging or that you would like to work on.
    2. Pre-observation meeting with partner to discuss what you'd like your partner to observe and which observation tool will be used
    3. Attend class and observe partner; complete observation tool
    4. Post-observation meeting with partner to discuss the observation
    5. Complete reflection form on the observation process
- Submit original self-assessment and post-observation reflection form to Kim and Astrid before 2/25/11.

Following online course #2

- Partner projects and presentation at MNI Wrap-up Meeting 4/29/11; for this activity, partners will:
    1. select or develop a project to create related to what you've learned in one or both of the online courses,
    2. implement that new activity or try out that new tool,
    3. reflect on the implementation,
    4. and then share your experience and your new activity/tool with colleagues.

The Minnesota Numeracy Initiative, ATLAS, ©2011

4. Numeracy PD

Objectives

Participants will:

1. Share knowledge and experience gained through MNI with colleagues
2. Increase comfort and confidence with providing numeracy PD to peers

Expectations

- Share knowledge and experience gained through MNI with colleagues at program staff meetings, ABE regionals, Summer Institute, and/or other PD events
- Provide a brief report to Kim and Astrid on any numeracy PD provided

SCHEDULE

Dates (2010-11)	Expectation(s) or Assignment(s)
10/15/10 8:00am – 4:00pm Hamline University	Full attendance and participation at MNI Kickoff Meeting
10/15/10 – 12/3/10	1. Complete online course #1: *Foundations of Teaching Numeracy* 2. Weekly partner meetings; submit weekly notecards after meetings 3. Ongoing participation in MNI Wiggio
12/3/10 or 12/7/10 2:00-3:00 pm	Participate in *Foundations* course webinar
12/3/10 – 2/25/11	Partner observation process: 1. Complete self-assessment on effective numeracy teaching 2. Pre-observation meeting with partner 3. Observation 4. Post-observation meeting with partner 5. Final reflection; submit original self-assessment and reflection before 2/25/11
2/25/11 – 4/8/11	1. Complete online course #2: *Teaching Reasoning and Problem-solving Strategies* 2. Weekly partner meetings; submit weekly notecards after meetings 3. Ongoing participation in MNI Wiggio
4/29/11 8:00am – 4:00pm MN Dept of Education	1. Full attendance and participation at MNI Wrap-up Meeting 2. Partner presentations 3. Final products (activities and/or lesson plans) posted on MNI Wiggio

Materials

- MNI Binder
- Online course materials and resources
- Activity handouts from face-to-face meetings
- Resources available on MNI Wiggio

The Minnesota Numeracy Initiative, ATLAS, ©2011
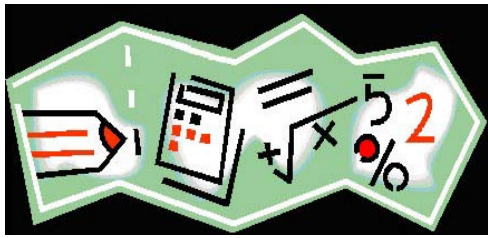
Minnesota Numeracy Initiative

An ATLAS project to advance numeracy instruction for ABE learners in Minnesota

What is MNI?
MNI is a multi-year project focused on effective numeracy instruction for adult learners. For 2010-2011, our focus will be on general professional development for all numeracy instructors, whether experienced or new to teaching math to adults. This is an intensive, interactive, hybrid (online + face-to-face) professional development activity. Objectives include:
- Improved outcomes for learners through more effective numeracy instruction.
- Strengthened math content knowledge and self-confidence for practitioners teaching numeracy.
- Increased awareness of effective instructional strategies for teaching numeracy.
- Enhanced collegiality and professionalism through collaboration with peers.
- Shared activities and lessons with MNI peers and colleagues around the state.

MNI overview
The first year, MNI will run from October 2010 – April 2011. Participants will be expected to:
1. Commit to the following (includes two face-to-face training sessions and two 6-week online courses):
   - **Friday, October 15, 2010 from 8:30 am – 4:00 pm**. MNI Kickoff to meet your colleagues and course facilitator and begin your work with MNI.
   - **October – December 2010.** Complete *Foundations of Teaching Adult Numeracy* (6-week online course) and participate in 1-hour webinar with MNI colleagues upon course completion.
   - **January 2011.** Collaborate with an MNI colleague as a peer mentor to develop and improve math instruction.
   - **February – March 2011.** Complete *Teaching Reasoning and Problem Solving Strategies* (6-week online course).
   - **Friday, April 29, 2011 from 8:30 am – 4:00 pm.** MNI conclusion with course facilitator.
2. Participate in an online network with MNI colleagues throughout the year for support; sharing activities and lessons; and feedback and reflection on instruction and your experiences.
3. Present with MNI colleagues at Summer Institute, ABE regionals, other conferences, or program staff meetings to share what you have learned.

atlas ABE Teaching & Learning Advancement System

HAMLINE UNIVERSITY

Benefits to participation

- Increased confidence and effectiveness as a numeracy instructor
- $500 stipend
- CEUs for online course completion and face-to-face training
- Certificate of completion
- Links to activities, lessons and other resources developed by colleagues and national numeracy experts
- Participation in a community of practice comprised of Minnesota numeracy instructors
- Membership in the Adult Numeracy Network (www.adultnumeracynetwork.org), which includes the Math Practitioner newsletter and samples of successful lessons and teaching practices

Who can participate?

Anyone who teaches math, from beginning to experienced teachers, could benefit from being part of this numeracy-focused professional development activity. To participate in MNI, practitioners must:

- Currently teach math, since participants will be developing and implementing math activities in the classroom
- Have approval of a supervisor to participate in MNI
- Be prepared to make a commitment for the entire initiative
- Although not required, participants are encouraged to sign up with a partner

This first year is a pilot year, so the cohort will be limited to **24 teachers**.

Application Process

The application to participate in MNI is available at **www.hamline.edu/atlas** (**new website: www.atlasABE.org**) on the MN Numeracy Initiative page *(under SIGNATURE INITIATIVES or in the right-hand menu)*. Applications will be accepted until September 10, 2010, and participants will be notified about acceptance by September 15, 2010.

atlas ABE Teaching & Learning Advancement System

H HAMLINE UNIVERSITY

Appendix B – Materials for Phase One

An ATLAS project to advance
numeracy instruction for
ABE learners in Minnesota

Application for Participation in the 2011-12 Minnesota Numeracy Initiative (MNI)

I. Applicant Information

Name	
Organization	
Street Address	
Email	
Phone number	

* NOTE: The rubric that will be used to score applications is available on the ATLAS website: www.atlasabe.org/professional/math-and-numeracy

1. Briefly describe your previous experience providing math instruction in ABE:

2. Briefly describe your previous experience providing math instruction in any other contexts:

3. Math teaching assignment:
    a) In the 2011-12 program year, what math content will you be teaching?
    b) Will you be teaching math as a stand-alone class or embedded in another class?
    c) Who will your learners be?

4. What percentage (%) of your teaching assignment for the 2011-12 program year is math instruction?
   _____ %

5. In a paragraph or two, please explain what has motivated you to consider participating in MNI, and what you hope to learn through your participation in MNI.

6. In a paragraph or two, please explain how you anticipate your participation in MNI will benefit your students.

7. How did you hear about MNI?

8. Participants are encouraged to apply for MNI with a partner with whom they can collaborate on MNI activities. Do you have a partner in mind? ___Yes ___No

If yes, partner's name:

The Minnesota Numeracy Initiative, ATLAS, ©2011

II. Requirements for Participation
(please mark an "X" in front of each of the 3 requirements)

___ I understand that if accepted to participate in MNI, I will be expected to:

1. Commit to the following (includes two face-to-face training sessions and two 6- 9 week online courses):
   - **Friday, October 14, 2011 from 8:00 am – 4:00 pm**. MNI Kickoff meeting to meet your colleagues and begin your work with MNI.
   - **Ongoing**. Collaborate with an MNI colleague to improve math instruction.
   - **October – December 2011.** Complete *Foundations of Teaching Adult Numeracy* (6-week online course) and participate in a webinar with MNI colleagues upon course completion. Meet weekly (in person or on the phone) with a partner to discuss & collaborate on course content. (approximately 4-5 hours/week)
   - **January 2012.** Work with your MNI partner to observe each other's class at least once, and submit an observation reflection.
   - **February – April 2012.** Complete *Teaching Reasoning and Problem Solving Strategies* (6-week online course). Meet weekly (in person or on the phone) with a partner to discuss & collaborate on course content. (approximately 4-5 hours/week)
   - **Friday, April 27, 2012 from 8:00 am – 4:00 pm.** MNI final meeting.
2. Participate in an online network with MNI colleagues throughout the year for support; sharing activities and lessons; and feedback and reflection on instruction and your experiences.
3. Present with MNI colleagues at program staff meetings, ABE regionals, Summer Institute, and/or other conferences to share what you have learned.

___ I understand that I will receive a $400 stipend only upon completion of the two online courses, peer observation reflection assignment, and two face-to-face training sessions listed above.

___ My supervisor is aware that I am applying to participate in the above MNI activities.

III. Minimum Technical Requirements

From ProLiteracy: "To participate in [online] courses, you must have access to a reliable computer with an Internet connection. We recommend a high speed Internet connection. For courses that include Webinar sessions, you must have the ability to be on an Internet-connected computer and a telephone at the same time. We recommend a screen resolution 800x600 or higher."

If you have questions about system and other technology requirements, please check the Math and Numeracy page under "Professional Development" on the ATLAS website: **www.atlasABE.org**.

To Submit Your Application

Please type right into this document, save it on your computer, and then email it to Marisa Squadrito Geisler, ATLAS Program Administrator, at **mgeisler02@hamline.edu**.

➤ **Deadline for applications: Wednesday, August 31**

MNI Application Rubric

MNI Project Goals:
- Improved outcomes for learners through more effective numeracy instruction
- Strengthened math content knowledge and self-confidence for teachers
- Increased awareness of effective instructional strategies
- Enhanced collegiality and professionalism through collaboration
- Expanded collection of activities and lessons for practitioner use

Criterion	Excellent	Good	Fair	Poor	TOTAL
Teaching assignment and learners (ideally >50% teaching math)	Teaching context and learners that will definitely allow for implementation of required MNI strategies *Points possible: 6*	Teaching context and learners should allow for implementation of required MNI strategies *Points possible: 4*	Some question that teaching context or learners will allow for implementation of required MNI strategies *Points possible: 2*		
Benefits to teaching and students	Clearly articulated vision of benefits to teacher and learners *Points possible: 5*	Vision of benefits to teacher and learners *Points possible: 3*	Insufficiently articulated vision of benefits to teacher and learners *Points possible: 1*		
Experience teaching math	Sufficient experience teaching math that lack of content knowledge will not be a barrier; participant will definitely be able to draw from prior math teaching experiences *Points possible: 3*	Some experience teaching math so lack of content knowledge should not be a barrier; participant should be able to draw from prior math teaching experiences *Points possible: 2*	Unclear that experience teaching math is sufficient so that lack of content knowledge will not be a barrier; unclear whether participant has sufficient experience to draw from prior math experiences *Points possible: 1*		
Other considerations: • regional distribution • administrative support • identified partners • past performance in past PD initiatives					
Notes: 					

MNI Kickoff

October 15, 2010
8:00 am - 4:00 pm
Klas Center, Hamline University

Objectives:
Participants will…

- Understand rationale for MNI as job-embedded PD
- Understand the components of MNI and required activities
- Develop a plan for successful online learning and completion of the online courses
- Understand features of effective online discussions
- Learn how to access course; begin the introductory activities for *Foundations of Teaching Adult Numeracy*
- Begin collaborative MNI work with partner; prepare for partner activities during and between courses
- Learn more about peers and identify potential collaborators (outside of MNI partner)
- Learn how to access and use the key features of the MNI Wiggio
- Learn a numeracy teaching strategy and be able to implement it in their classroom

AGENDA

- Breakfast and check-in
- Rationale for MNI
- Components of MNI and required activities
  - Online courses
  - Electronic Community of Practice – MNI Wiggio
  - Partner activities
- Introducing the online course
- LUNCH
- Partner activities: Expectations and responsibilities
- Using the MNI Wiggio
- Instructional strategy workshop
- Wrap-up and evaluation

MNI Webinar Agenda

Dec 3 2:00-3:00 pm
Dec 7 4:00-5:00 pm

Objectives

Participants will…

1. Understand expectations for end of first online course, including submission of final assignments, details about the course exam and evaluation forms, and receipt of certificates of completion.
2. Have opportunities to briefly share what they have learned from MNI participation to date that has impacted their teaching in some way.
3. Be prepared for the next phase of MNI, including
   a. Process and expectations for partner observations
   b. How to use the Teaching Numeracy Self-assessment Checklist
   c. Submission of reflections to Kim & Astrid

Agenda

1. Welcome & introduction to the webinar
2. Course wrap-up

3. Sharing
   - Each participant has one minute to respond to the following question:
     Knowing what you know now, what is one thing you will add/change/remove from your numeracy teaching practices?
   - Discussion of emerging themes & questions from the group

4. MNI Phase II
   - Introduction of the observation process
   - Introduction of Teaching Numeracy Self-assessment (shared as word doc on screen)

5. Additional time for questions/comments – optional

Appendix C – Materials for Phase Two

The Learner-centered Adult Numeracy Classroom
Teaching Numeracy Self-Assessment Checklist

Research has shown that effective adult numeracy instruction includes teaching practices drawn from three important components:
1. **Context -** the use and purpose for which an adult takes on a task with mathematical demands
2. **Content** – the mathematical knowledge that is necessary for the tasks confronted
3. **Cognitive and Affective –** the processes that enable an individual to solve problems, and thereby, link the content and context

Below are instructional practices that address one or more of the above components of numeracy.

Instructional Practice	With *0* as never and *5* as always, the frequency with which I use these practices is:	Examples of things I believe correspond to each practice:
1. Instructor embeds math learning in real world contexts, including practice that allows learners to grasp how the procedures are applied in real life situations.		*I use construction and cooking contexts for measurement using fractions.*
2. Instructor provides assignments and activities that promote critical thinking skills, including guidance for thinking critically to determine which calculations, formulas, or processes must be utilized to solve problems.		
3. Instructor uses small group discussions to promote alternative processes for solving problems.		
4. Instructor helps students develop positive habits of mind by offering challenging mathematical tasks and supporting students' *curiosity, respect for evidence, persistence, ownership,* and *reflection* about what is learned and how it is learned		

The Minnesota Numeracy Initiative, ATLAS, ©2011

5. Instructor varies activities to accommodate various learning styles and abilities of students.		
6. Instructor chooses activities and topics that help learners set goals and identify what they already know as well as what they/want need to learn.		
7. Instructor develops learners' conceptual understanding of the meaning of the procedures and of the relationships among them.		
8. Instructor helps learners acquire strategies to promote independent reasoning and problem-solving ability.		
9. Instructor facilitates a learners' development by allowing them to explore and develop their own meaning.		
10. Instructor assists learners in their development of math knowledge through "Levels of Knowing Math" (intuitive, concrete, pictorial, abstract, application, communication) or stages of understanding.		
11. Instructor asks questions that encourage learner thinking beyond recall.		I ask students to explain in small groups how they solved the problem.
12. Instructor uses both formative and summative assessment to measure learning.		I use formative assessment during teaching to ascertain the learners' prior knowledge and to see if the lesson is on the right track. I asked students to solve two problems using estimation as a summative assessment.

Assignment

The Learner-centered Adult Numeracy Classroom

Before you begin observations with your MNI partner, you will write a brief reflection of learner-centered numeracy instruction in your classroom. Start with the Teaching Numeracy Checklist. For each item, write examples of the ways you incorporate effective instructional practices into your teaching. Be specific: describe classroom practices, activities, assignments, and instruction that you believe promote a learner-centered class. Next write a short reflection of what you see as your strengths and your areas for growth. You will write a similar reflection at the end of your partner experience. Good luck and enjoy!

Reflection: What are your strengths regarding learner-centered numeracy instruction? As you reflect on your answers, what are a couple of areas you would like to concentrate on with your MNI partner?

My strengths:

Areas I'd like to explore more deeply:

Between participation in the two online courses, MNI partners will observe each other's classes using the following process:

Step 1:
- Each teacher completes a self-assessment on effective numeracy teaching. Identify your own strengths and one instructional practice that you find challenging and would like to explore more deeply.
- Submit a copy of the self-assessment to Kim and Astrid.

Step 2:
- Meet with your partner to discuss your self-assessment, specifically, what you'd like to improve in your teaching and how you would like to better integrate the instructional practice you identified as a challenge.
- Together, decide with your partner what kind of observation tool would be appropriate and what you would like your partner to observe in the class.
- Schedule a date/time for your partner to visit your class.

Step 3:
- Partner will attend the class and observe the learners and learning; partner completes the observation tool.

Step 4:
- Partner should meet soon after the observation.
- The teacher should share how s/he felt about what happened in class with the new strategy or activity.
- The observer should share what s/he observed; specifically, discuss the student's learning and reactions to the instructional strategies or activities tried.
- Together, discuss next steps: How would you tweak this strategy or activity for next time? How do you want to continue integrating this instructional practice into your teaching?

Step 5:
- Complete post-observation reflection form (posted on the Wiggio).
- Send a copy of your post-observation reflection form to Kim and Astrid before we begin next online course (by 2/25/11).

Compensation: (All questions should be directed to Marisa Geisler (mgeisler02@hamline.edu)

1. ATLAS will reimburse each program up to $150 (per teacher) to cover the cost of substitute teachers if needed. Programs should submit an invoice to Marisa.
2. ATLAS will cover mileage costs for any MNI participant who travels to do the required observation. You will need to submit an ATLAS invoice to Marisa (forms are on the ATLAS website).

Appendix D – Materials for Phase Three

MNI Final Meeting

April 29, 2011
8:00 am - 4:00 pm
Minnesota Department of Education, Conference Center B, CC-16

Objectives:
Participants will…
- Reflect on 2nd online course content and related changes in teaching practice
- Revisit beliefs about adult numeracy instruction
- Present and share information/ideas for activities or tools that will be valuable for MNI colleagues and potentially for other numeracy practitioners
- Collect information/ideas from activities or tools from MNI colleagues that will be valuable in their own contexts
- Gain experience and practical feedback on effective presentation skills for numeracy topics
- Learn about plans for 2011-12 MNI activities
- Share and celebrate successes of MNI participation

AGENDA
- Breakfast and check-in
- Welcome & warm-up
- Reflecting on *Teaching Reasoning and Problem Solving Strategies*
- Inductive reasoning
- Adult numeracy instruction belief statements
- Partner presentations
- LUNCH
- Partner presentations
- Plans for MNI 2011-12
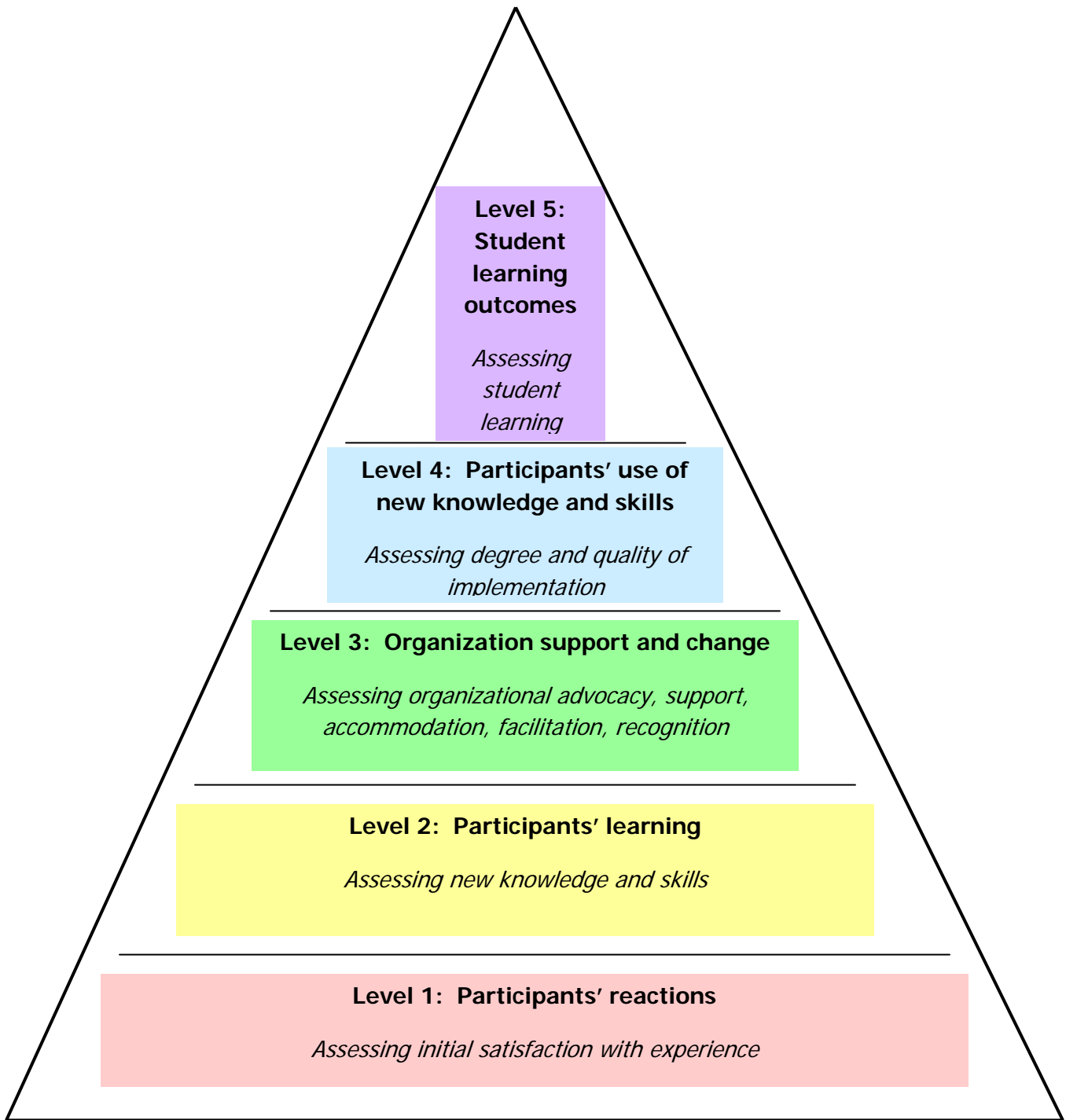- Sharing & celebrating successes

MNI Final Project Ideas
Mary Barbara Hanna

Idea 1 Create a mathematical equation or word problem that represents the "transfer of learning" that occurred during this year. That is, select two or three new ideas acquired and discuss implementation and results (positive, negative) in the classroom.	**Idea 2** Build a model that blends "constructivist theory" and "Levels of Math Knowledge." This model should demonstrate how constructivism enables an instructor to assess a student's math knowledge and then helps them progress through the various levels.
Idea 3 Using the paper on "Content, Context, and Cognitive and Affective Components," from the first online course, create a rubric that enables instructors to determine consideration of all three elements in instruction and assessment. Make sure to include instructions on its' use and definition of terms.	**Idea 4** Create an Awareness Campaign that promotes "Teacher as Facilitator" and use of "Habits of Mind" in the classroom. (The challenge with this project is the topic of "Habits of Mind" is the last lesson of the second online course. If people express an interest in this particular project, we can release that information a little earlier to them?)

Appendix E – MNI Evaluation Tools

Level 5: Student learning outcomes

Assessing student learning

Level 4: Participants' use of new knowledge and skills

Assessing degree and quality of implementation

Level 3: Organization support and change

Assessing organizational advocacy, support, accommodation, facilitation, recognition

Level 2: Participants' learning

Assessing new knowledge and skills

Level 1: Participants' reactions

Assessing initial satisfaction with experience

Five Levels of Professional Development Evaluation
(adapted from Guskey, 2002)

For professional developers:
1) ensure teachers enjoy the experience
2) ensure teachers learn something
3) ensure supports for change/implementation are in place
4) ensure opportunities and awareness of how to use new knowledge and skills
5) see what the impact is on students

MNI Evaluation Questions

Audience *(who needs this info?)*	Question *(matched to project objectives and levels of evaluation)*	Indicators *(data)*	How will the information be useful?
PD Staff; MNI Participants; MNI Administrators; State funders	Have the participants strengthened or acquired new math content knowledge? Subquestions: Should this be tied to specific objectives for each course?	-course assignments & discussion board postings -webinar discussions -pre and post MNI surveys	Demonstrate Increase in math content knowledge (response to data showing this is a need).
	Have teachers increased self-confidence in teaching numeracy as a result of participation in MNI? Subquestions: Are there specific areas they feel more confident about or areas they still feel they are lacking in confidence?	-course assignments & discussion board postings -webinar discussions -pre and post MNI surveys -self-assessments & reflections -post-observation reflection	Demonstrate increase in self-confidence (response to data showing this is a need). Identify areas that need to be addressed in the future.
	Have teachers implemented effective instructional strategies gained from participating in MNI?	-course assignments & discussion board postings -webinar discussions -pre and post MNI surveys -self-assessments & reflections -post-observation reflection -post phase 2 survey	Document teacher learning and use of new skills.
	How did the partner relationship and weekly meetings support or hinder teachers' participation in MNI activities?	-weekly notecards -post phase 1 survey -post phase 3 survey	Identify needed changes for future & inform design of future PD activities
	How did the partner relationship and weekly meetings support or hinder teachers' understanding of course content?	-weekly notecards -post phase 1 survey -post phase 3 survey	Document teacher learning and use of new skills. Identify needed changes for future.

	What impact did the partner relationship and required weekly meetings have on teaching?	-weekly notecards -post phase 1 survey -post phase 3 survey	
	What did teachers learn from observing their partner and how did that impact their own numeracy instruction?	-post-observation reflection -post phase 2 survey	
	What did teachers learn from being observed and how did that impact their numeracy instruction?	-self-assessments & reflections -post-observation reflection -post phase 2 survey	
PD staff; Administrators	How did local organizational supports help or hinder participation in MNI activities?	-post phase 1 survey -post phase 3 survey -post MNI survey -post MNI administrator survey	Document and track effectiveness of organizational supports for MNI. Identify needed changes for future.
	How did local organizational supports help or hinder the implementation of new instructional strategies?	-post phase 1 survey -post phase 3 survey -post MNI survey -post MNI administrator survey	
	How did local organizational structures help or hinder participation in MNI activities?	-course assignments & discussion board postings -post MNI survey -post MNI administrator survey	
	How did local organizational structures help or hinder the implementation of new instructional strategies?	-course assignments & discussion board postings -webinar discussions -post MNI survey -post MNI administrator survey	
PD staff	How did state PD provider supports help or hinder teachers' participation in MNI activities?	-post phase 1 survey -post phase 3 survey -post MNI survey	Inform decisions about future PD provider support activities.
	How did state PD provider supports help or hinder the implementation of new instructional strategies?	-post phase 1 survey -post phase 3 survey -post MNI survey	
	How did online course facilitator supports help or hinder teachers' understanding of course content?	-post phase 1 survey -post phase 3 survey -post MNI survey	Inform decisions about future online course facilitator support activities.

The Minnesota Numeracy Initiative, ATLAS, ©2011

	How did online course facilitator supports help or hinder the implementation of new instructional strategies?	-post phase 1 survey -post phase 3 survey -post MNI survey	
	How has the Wiggio (ECoP) helped to promote or not promote networking and general communications regarding numeracy instruction?	-discussion postings on wiggio -pre/post MNI survey	Determine whether to use this tool in the future and how to use it. Identify needed changes for future.
	How has the Wiggio (ECoP) help to promote or not promote sharing of numeracy resources?	-discussion and resource postings on wiggio -pre/post MNI survey	
	Did participants get enough supports or training for the peer mentoring process to make it valuable? Subquestion: If not, what are the training needs?	-post phase 2 survey -post observation reflection	Document and track effectiveness of organizational supports for MNI. Identify needed changes for future.
	Do participants feel more confident about providing numeracy PD to peers?	-pre/post MNI survey -post phase 3 survey	Determine if this is an effective way to help foster new numeracy PD leaders in the state.
	Did participants provide PD at local and/or statewide venues?	-pre/post MNI survey -post phase 3 survey	
PD staff (Outside funders may find this a useful tool)	How valuable was the self-assessment tool? Subquestions: Did it promote reflection? Did it help instructors identify an aspect of teaching to focus on during partner observation process?	-post phase 2 survey -self-assessments and reflection -post observation reflection	Document teacher learning and use of new skills. Need to decide to continue use of tool or modify/change tool.

PD staff State funders	Do teachers feel more comfortable and confident about participating in online courses?	-post phase 1 survey -post phase 3 survey -pre/post MNI survey	Determine if this is an effective way to encourage participation in online PD. Identify needed changes for future.
	Do teachers feel more comfortable and confident about participating in webinar?	-post phase 1 survey -pre/post MNI survey	
	Do teachers feel more comfortable and confident about participating in an online networking tool (ECoP)?	-post phase 1 survey -post phase 3 survey -pre/post MNI survey	
	Are teachers going to be more likely to take an online course as a result of participation in MNI courses? If not, why not?	-pre/post MNI survey	
	Are teachers going to be more likely to participate in a webinar as a result of participation in MNI? If not, why not?	-pre/post MNI survey	
	Are teachers going to be more likely to participate in an ECoP as a result of participation in MNI? If not, why not?	-pre/post MNI survey	
State funders	What is the impact on student learning?	-post MNI survey (maybe some anecdotal information from teachers?)	Document PD to student outcomes. Encourage future support.
	Is the program cost effective?	???	Encourage future support.
	Do the benefits justify the cost?	???	

The Minnesota Numeracy Initiative, ATLAS, ©2011

MNI-11 Pre-Survey

(This provides an overview of topics and questions asked; the complete survey is available online at
https://www.surveymonkey.com/s/mni11presurvey)

Demographics
1. What is your professional development region?
2. How long have you been teaching in ABE?
3. Which are you, full-time or part-time (as defined by your program)?
4. What percentage of your current teaching load is math?
5. In what context do you teach math?
6. If you teach math embedded in another class, in what class(es) is your math instruction embedded?
7. Do you combine teaching math and language to English language learners?
8. If you do combine teaching math and language, to what level ESL students do you teach math?
9. What is your training in math instruction?
10. How long have you been teaching math in any context?
11. How long have you been teaching math to adult learners?
12. Which of the following math content areas do you currently teach?

Knowledge and Confidence with Numeracy
13. Rate your comfort level with teaching each of the following math content areas…
14. Rate your comfort level with the following…
15. What are some pros and cons about having learners work in groups to learn math?
16. How do you determine what math topics to teach?
17. Why do your students want to study math?
18. What tools (informal and/or formal) do you use to assess your students' level of math knowledge?
19. How do you use those tools to inform instruction?
20. What do you like most about teaching math?
21. What do you find most challenging about teaching math?
22. What attitudes or ideas about math do you bring to the classroom that are helpful to your teaching?
23. What attitudes or ideas about math do you bring the classroom that may be detrimental to your teaching (if any)?
24. What are common ways (positive and negative) that learners express their attitudes and/or past experiences with math?
25. What do you do when a student displays signs of math anxiety?
26. How do you cope with a situation where you do not feel confident in your mathematical ability?

Technology
27. Do you currently use FaceBook, Linked In, Ning, Wiggio, or other social networking sites?
28. How do you feel about trying the MNI Wiggio site?
29. Have you ever taken an online course?
30. How do you feel about trying the online numeracy courses?
31. Have you ever participated in a webinar?
32. Have you ever contributed to an online discussion board?
33. Are you currently subscribed to a listserv/email discussion list?
34. Have you ever posted a comment or question on a listserv/email discussion list?
35. How frequently do you use any of the following online communication tools?
36. In general, are you comfortable trying new technology tools?

Partner Work and Collaboration

37. How have you collaborated with a peer for teaching?

Numeracy Presentations

38. In what context(s) have you presented or delivered numeracy professional development (PD) in the past?

MNI-11 Post-Survey

(This provides an overview of topics and questions asked; the complete survey is available online at https://www.surveymonkey.com/s/mni_final-fy11)

Phase Three

1. During the second online course, what would you say were the benefits of the weekly partner meetings?
2. What were the challenges of the weekly partner meetings?
3. How did the weekly meetings support you in your online learning and/or completing the second online course?
4. Do you have any suggestions for changes in the structure of the partner work for next year?
5. In what ways did your program and/or administrator support you as you worked through MNI Phase 3 (second online course; partner meetings; final project; final meeting 4/29/11)?
6. In what ways could your program and/or administrator have been more supportive?
7. What supports from the online course facilitator and course technical staff were most helpful to you during this second course?
8. In what ways could the course facilitator and course technical staff have been more supportive?
9. How did MDE staff and ATLAS staff support you as you worked through MNI Phase 3 (second online course; partner meetings; final project; final meeting 4/29/11)?
10. In what ways could MDE or ATLAS staff have been more supportive?
11. Please comment on the value of the final meeting. What did you gain from participating in the final meeting? Please be as specific as possible.
12. What suggestions would you make for next time? Please be as specific as possible.

Knowledge and Confidence with Numeracy

13. Based on your participation in MNI this year, are you more comfortable teaching any of the following content areas than you were before? Check all that apply: •(Please explain these changes and comment on any of these items.)
14. As a result of your participation in MNI, do you feel that your math content knowledge has been strengthened in any way? How?
15. Based on your participation in MNI this year, are you more comfortable teaching ESL learners? Please explain.
16. As a result of your participation in MNI, have your beliefs about learners working together in groups changed? If so, how?
17. As a result of your participation in MNI this year, has your approach to determining what math topics to teach changed? If so, how?
18. As a result of your participation in MNI this year, have you used different tools –formal or informal – to assess your students' level of math knowledge? If so, how?
19. As a result of your participation in MNI this year, has your use of assessment tools to inform instruction changed? If so, how?
20. As a result of your participation in MNI, have your attitudes or ideas about math changed? How do these impact your teaching?
21. As a result of your participation in MNI, what do you do differently now when a student displays signs of math anxiety?
22. As a result of your participation in MNI, how do you now cope with a situation where you do not feel confident in your mathematical ability?

Technology

23. How useful did you find the MNI wiggio to be? Please explain.
24. What did you like about the MNI wiggio?
25. What did you dislike about the MNI wiggio?
26. What suggestions do you have for ways we might use the MNI wiggio site in the future?
27. You completed 2 online courses as part of MNI. Based on that experience, how likely are you to take an online professional development course in the future? Please explain.
28. How likely are you to participate in a webinar in the future? Please explain.
29. How likely are you to participate in an online professional networking site (such as Wiggio) in the future? Please explain.

Partner Work and Collaboration

30. As part of MNI, you had the opportunity to observe and collaborate with a peer for teaching. How likely are you to collaborate with a peer in the future and in what way? Please explain.

Numeracy Presentations

31. With the exception of the presentation at our final MNI meeting on April 29, in what contexts have you presented on an MNI topic (or a numeracy topic) during the last year?
32. As a result of your participation in MNI, are you more willing to present or deliver numeracy PD? Please explain.

General MNI

33. How do you believe your students have been impacted by your experience as an MNI teacher?
34. Please feel free to provide additional comments, questions or feedback on any aspect of MNI.

MNI-11 Phase 1 Mini-Survey

(online at https://www.surveymonkey.com/s/mni_phase1)

1. What were the benefits of the weekly partner meetings?
2. What were the challenges of the weekly partner meetings?
3. How did the weekly meetings support you in your online learning and/or completing the online course?
4. Do you have any suggestions for changes in the structure of the partner work for the next online course?
5. In what ways did your program and/or administrator support you as you worked through MNI Phase I (MNI Kickoff; first online course; partner meetings)?
6. In what ways could your program and/or administrator be more supportive?
7. What supports from the course facilitator and course technical staff were most helpful to you during this first course?
8. In what ways could the course facilitator and course technical staff be more supportive?
9. How did MDE staff and ATLAS staff support you as you worked through MNI Phase I?
10. In what ways could MDE or ATLAS staff be more supportive?
11. Please feel free to provide additional comments, questions or feedback on MNI Phase I.

MNI-11 Phase 2 Mini-Survey

(online at https://www.surveymonkey.com/s/mni_observations)

1. In what ways was the self-assessment tool helpful?
2. What modifications (if any) to the assessment tool would you recommend?
3. What did you find valuable about the partner observation process? Please be specific.
4. What were the challenges of the partner observation process?
5. Did you receive the support and training needed to effectively carry out the partner observation process? If not, what additional support or training would have been helpful?
6. What changes (if any) to the partner observation process would you recommend for next year?
7. Please feel free to provide additional comments, questions or feedback on the self-assessment tool and partner observation process.