

Program Administrative Handbook for Local Directors
Adult Education
Wyoming

Chapter 9: Research & Evidence Based Instructional Practices for the AE Classroom

I. Helping Adults Learn

As an educator and a professional, you are an adult learner and so are the adults entering your program. The material may change and the learning strategies you apply in the classroom may differ; but it is important to remember that we all bring a unique constellation of learning experiences to the table. Articles and information from the Teaching Excellence in Adult Literacy (TEAL) Project, the Align & Redesign Project, and the Teaching Skills That Matter Project, along with others will help explain the characteristics of adult learners and provide the new instructors with tips and techniques for working with adult learners. A good resource for learning about adult learners is the LINCS website: <https://lincs.ed.gov/>.

Aspects of an Adult Learner

The Need to Know	<ul style="list-style-type: none">• Adults need to understand the benefits of learning something new
Make Learning Relevant	<ul style="list-style-type: none">• Contextualize instruction around a student's identified career track whenever possible. This helps to make learning relevant and of value to their life.
Readiness to Learn	<ul style="list-style-type: none">• Adults are ready to learn new material when their life has a need for it, not only developmentally but in application.
The Learner's Self-Concept	<ul style="list-style-type: none">• As educators we can help learners move from dependency on the instructor to self-directedness (dependency on themselves) for their own learning.
The Role of the Learner's Experience	<ul style="list-style-type: none">• Educators can emphasize individualization in the learning process & understand that each learner has his/her own past experiences that have led up to this educational moment in time.
Motivation	<ul style="list-style-type: none">• Most adults are intrinsically motivated to learn new material, especially when external forces are at stake (e.g. a job promotion, change in family lifestyle, etc.)

II. Adult Learning Theories

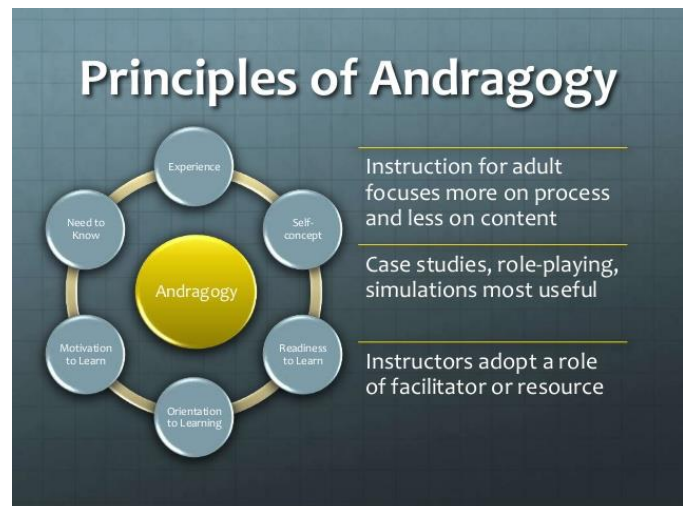
There are many learning theories when it comes to adult learners, and each theory has unique applications and techniques associated with it. Different theories and techniques will resonate better with students based on their primary learning style. Some of the top learning theories in the adult learning space include Andragogy, Transformative Learning, Experiential Learning, and Project-Based Learning.

<https://www.wgu.edu/blog/adult-learning-theories-principles2004.html>

Andragogy

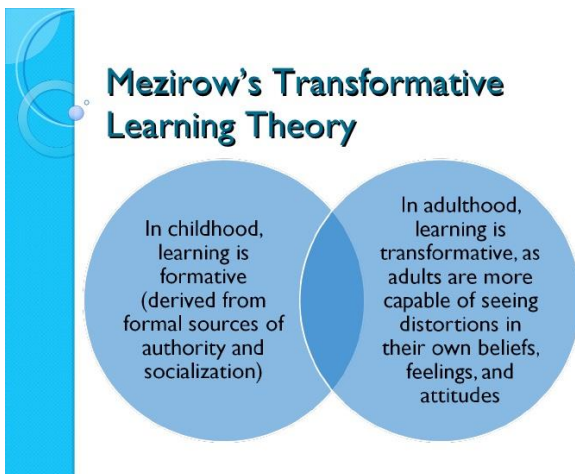
Malcolm Knowles popularized the concept of andragogy in 1980. Andragogy is the “art and science of helping adults learn” and Malcolm Knowles contrasted it with pedagogy, which is the art and science of helping children learn. Knowles and the andragogy theory says that adult learners are different from children in many ways, including:

- They need to know why they should learn something.
- They need internal motivation.
- They want to know how learning will help them specifically.
- They bring prior knowledge and experience that form a foundation for their learning.
- They are self-directed and want to take charge of their learning journey.
- They find the most relevance from task-oriented learning that aligns with their own realities.



Andragogy learning theories focus on giving students an understanding of why they are doing something, lots of hands-on experiences, and less instruction so they can tackle things themselves. The andragogy adult learning theory isn't without criticism—some suggest that the andragogy adult learning theory doesn't take other cultures into consideration well enough. While there are pros and cons, many students find andragogy is extremely accurate and helpful as they work to continue their education and learning.

Transformative Learning

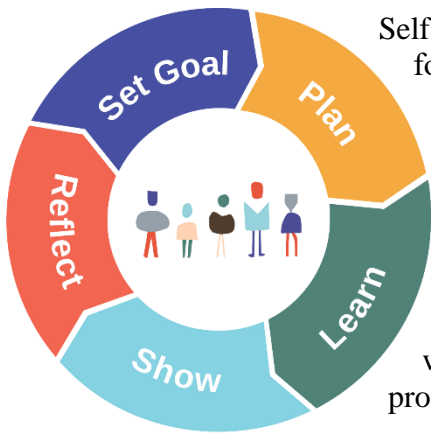


Jack Mezirow developed this learning theory in the 1970's. The transformative adult learning theory (sometimes called transformational learning) is focused on changing the way learners think about the world around them, and how they think about themselves. For example, learners studying religions of the world may gain new perspectives on their principles and thoughts about regions and cultures as they learn more about different religions. Their assumptions may change based on what they learn. Sometimes transformative learning utilizes dilemmas and situations to challenge your assumptions and principles. Learners then use critical thinking and questioning to evaluate their underlying beliefs and assumptions, and learn from what

they realize about themselves in the process. Mezirow saw transformative learning as a rational process, where learners challenge and discuss to expand their understanding.

There is criticism that transformative learning doesn't account well for relationships, feelings, and cultural contexts, making learners feel unsafe or nervous to share their thoughts with teachers or other learners in an educational setting. There are ups and downs with transformative learning, and many adult learners find that working to change their underlying beliefs can be rewarding and demanding at the same time.

Self-Directed Learning



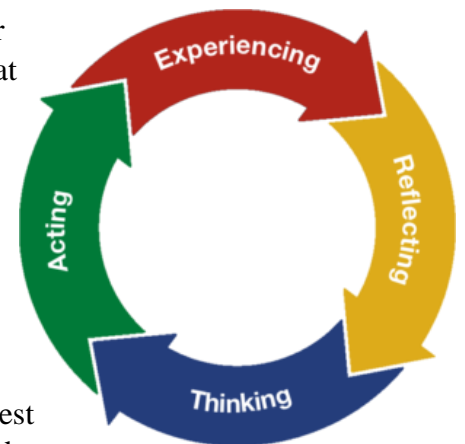
Self-directed learning is an interesting adult learning theory that has been around for hundreds of years. It became a more formal theory in the 1970's with Alan Tough and is used by teachers in a variety of educational settings to help improve adult learning. Self-directed learning (sometimes called self-direction learning) is the process where individuals take initiative in their learning—they plan, carry out, and evaluate their learning experiences without the help of others. Learners set goals, determine their educational or training needs, implement a plan, and more to enhance their own learning. Self-directed learning may happen outside the classroom or inside of it, with students working by themselves or collaborating as part of their self-directed learning process.

Criticism for this self-directed approach comes from those who say that some adult learners lack the confidence and understanding to do self-directed learning well. Critics also say that not all adults want to pursue self-directed learning. But for many adults, self-directed learning happens naturally without anyone explaining it or suggesting it. Adult learners are more prone to self-directed learning because they are often excited about their education and feel confident in their ability to take it on themselves. For many adult students, self-directed learning is a fantastic way to learn.

Experiential Learning

David Kolb championed this theory in the 1970's, drawing on the work of other psychologists and theorists. Experiential learning theory focuses on the idea that adults are shaped by their experiences, and that the best learning comes from making sense of your experiences. Instead of memorizing facts and figures, experiential learning is a more hands-on and reflective learning style. Adult learners are able to utilize this theory and learn by doing, instead of just hearing or reading about something. Role-play, hands on experiences, and more are all part of experiential learning.

Critics of experiential learning say that there are many benefits to non-experiential learning that can be overlooked with this theory. These critics suggest that there is great value on goals, metrics, decision-making, and details that can be overlooked in experiential learning. Many adult learners find that this more hands-on approach is a great option for them. Instead of reading or memorizing, adult learners can utilize their past life experiences and their current understanding to improve their education.



Project-Based Learning

As early as 1900, John Dewey supported a “learning by doing” method of education. Project-based learning (sometimes called problem-based learning) is similar to experiential and action learning in that the overall idea is to actually do something to help you learn, instead of reading or hearing about it. Project-based learning utilizes real-world scenarios and creates projects for students that they could encounter in a job in the future. Students can choose their own projects and pursue things they are interested in, which is a great option for adult learners who need real-world applications from their learning.

The major criticism of project based learning is that the outcomes aren’t proven. There isn’t enough evidence to show that project-based learning is as effective as other learning methods. But many adult learners find that this kind of learning is hugely beneficial for them as they apply what they have been taught to their career, giving them direct access to seeing what they can do with their knowledge. Each theory provides constructs and/or models for us to consider in determining how our students learn. As our understanding of the principles, assumptions, and theories of adult education are broadened, we deepen the tool kit we use to reach our students.

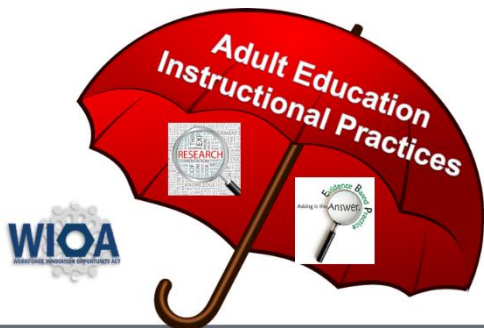
Elements Of Project Based Learning



Learning Team

For the latest news and information on Project Based Learning, visit us at www.learningteam.com

III. Research & Evidence Based Instructional Practices



WIOA mandates that all AE programs in the United States utilize research and evidenced based instructional practices in the classroom. Representative examples of some of the most commonly used practices for Adult Education classrooms in Wyoming are discussed in this chapter.

Programs are expected to provide a framework for instruction and assessing the competencies adults need in order to function effectively in society. Evidence and research-based instruction

that embeds the Wyoming Adult Education standards and college and career readiness standards are to be considered best practice in observations of instructors.

A. Webb's DOK

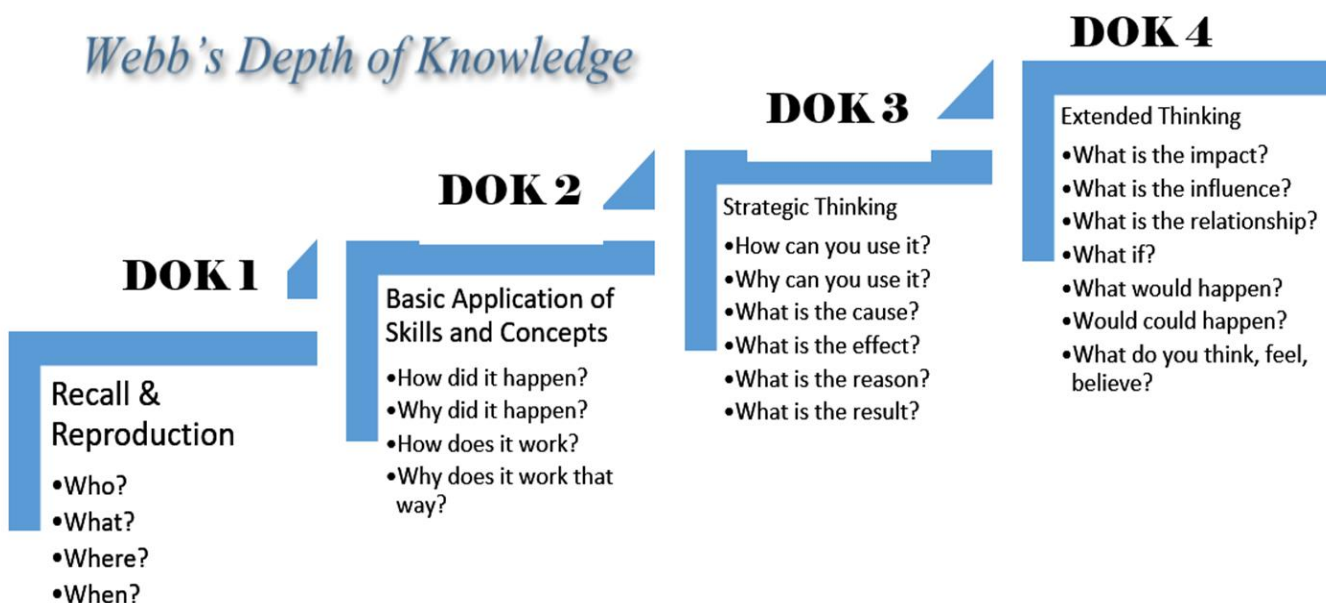


<https://www.youtube.com/watch?v=gO9k2xbbbwx>

DOK Level	Title of Level
1	Recall and Reproduction
2	Skills and Concepts
3	Short-term Strategic Thinking
4	Extended Thinking

Webb (1997) developed a process and criteria for systematically analyzing the alignment between standards and standardized assessments. Since then the process and criteria have demonstrated application to reviewing curricular alignment as well. This body of work offers the Depth of Knowledge (DOK) model employed to analyze the cognitive expectation demanded by standards, curricular activities and assessment tasks (Webb, 1997). The model is based upon the assumption that curricular elements may all be categorized based upon the cognitive demands required to produce an acceptable response. Each grouping of tasks reflects a different level of cognitive expectation, or depth of knowledge, required to complete the task. It should be noted that the term knowledge, as it is used here, is intended to broadly encompass all forms of knowledge (i.e. procedural, declarative, etc.).

Webb's Depth of Knowledge



Level 1-Recall & Reproduction

Curricular elements that fall into this category involve basic tasks that require students to recall or reproduce knowledge and/or skills. The subject matter content at this particular level usually involves working with facts, terms and/or properties of objects. It may also involve use of simple procedures and/or formulas. There is little transformation or extended processing of the target knowledge required by the tasks that fall into this category. Key words that often denote this particular level include: list, identify and define. A student answering a Level 1 item either knows the answer or does not; that is, the answer does not need to be “figured out” or “solved.”

Possible Products				
Quiz	List	Collection	Podcast	Social Bookmarking
Definition	Workbook	Explanation	Categorizing/Tagging	Searching
Fact	Reproduction	Show & Tell	Commenting	Googling
Worksheet	Vocabulary Quiz	Outline	Bullet\ting	Test
Recitation	Blog	Highlighting	Label	Example
Wiki	Social Networking			

Roles			
Instructor		Student	
Directs	Tells	Responds	Absorbs
Shows	Examines	Remembers	Recognizes
Questions	Evaluates	Memorizes	Describes
Demonstrates	Listens	Explains	Translates
Compares	Contrasts	Restates	Demonstrates
Examines		Interprets	

Potential Activities:

- Develop a concept map showing a process or describing a topic.
- Make a timeline
 - ✓ Write a list of keywords you know about...
 - ✓ Make a chart showing...
 - ✓ Recite a fact related to...
 - ✓ Write in your own words...
- Cut out, or draw a picture that illustrates an event, process, or story.
- Report or present to the class.
- Make a cartoon strip showing the sequence of an event, process, or story.
- Write and perform...
- Write a brief outline and explain the event, process, or story.
- Write a summary report of the event
- Prepare a flow chart that illustrates the sequence of events.
- Paraphrase a chapter in the book
- Retell in your own words
- Outline the main points
- Recall, restate, remember, or recognize a fact, term, or property (Recognizing, listing, describing, identifying, retrieving, naming, locating, finding)
- Using basic calculation tasks involving only one step (i.e. addition, subtraction, etc), complete the following...
- Locate or retrieve information in verbatim form.
- Straight-forward recognition tasks related to identifying features, objects and/or steps that don't vary greatly in form (i.e. recognizing features of basic tools).
- Writing tasks that involve applying a standard set of conventions and or criteria that should eventually be automated (i.e. using punctuation, spelling, etc)
- Basic measurement tasks that involve one step (i.e. using a ruler to measure length)
- Use this simple formula where at least one of the unknowns are provided to...
- Locating information in maps, charts, tables, graphs, and drawing

Level 2-Working with Skills and Concepts

Level 2 includes the engagement of some mental processing beyond recalling or reproducing a response. This level generally requires students to contrast or compare people, places, events and concepts; convert information from one form to another; classify or sort items into meaningful categories ; describe or explain issues and problems, patterns , cause and effect, significance or impact, relationships, points of view or processes. A Level 2 “describe or explain” would require students to go beyond a description or explanation of recalled information to describe or explain a result or “how” or “why.” The learner should make use of information in a context different from the one in which it was learned.

Elements found in a curriculum that fall in this category involve working with or applying skills and/or concepts to tasks related to the field of study in a laboratory setting. The subject matter content at this particular level usually involves working with a set of principles, categories, heuristics, and protocols. At this level students are asked to transform/process target knowledge before responding. Example mental processes that often denote this particular level include: summarize, estimate, organize, classify, and infer.

Possible Products			
photograph	Presentation	Reverse-engineering	Blog commenting
Illustration	Interview	Cracking codes	Blog reflecting
Simulation	Performance	Linking	Moderating
Sculpture	Dairy	Mashing	Testing(Alpha/Beta)
Demonstration	Journal	Relationship Mind Maps	Validating

Roles			
Instructor		Student	
Shows	Facilitates	Solves problems	Demonstrates use of knowledge
Observes	Evaluates	Calculates	Compiles
Organizes	Questions	Completes	Illustrates
		Constructs	

Potential Activities:

- Classify a series of steps
- Construct a model to demonstrate how it looks or works
- Practices a play and perform in class
- Make a diorama to illustrate an event
- Write a diary/blog entry
- Make a scrapbook about the area of study
- Make a topographic map
- Make up puzzle or game about the topic
- Write an explanation about this topic for others
- Make a model
- Routine application tasks (i.e. applying a simple set of rules or protocols to a laboratory situation the same way each time)
- Explaining the meaning of a concept and/or explaining how to perform a particular task
- Stating relationships among a number of concepts and or principles
- More complex recognition tasks that involve recognizing concepts and processes that may vary in how they “appear”
- More complex calculation tasks (i.e. multi-step calculations such as standard deviation)
- Research projects and writing activities that involve locating, collecting, organizing and displaying information (i.e. writing a report with the purpose to inform; meeting all steps of the writing process)
- Measurement tasks that occur over a period of time and involve aggregating/organizing the data collected in to basic presentation forms such as a simple table or graph

Level 3-Short-term Strategic Thinking

Items falling into this category demand a short-term use of higher order thinking processes, such as analysis and evaluation, to solve real-world problems with predictable outcomes. Stating one’s reasoning is a key marker of tasks that fall into this particular category. The expectation established for tasks at this level tends to require coordination of knowledge and skill from multiple subject-matter areas to carry out processes and reach a solution in a project-based setting. Key processes that often denote this particular level include: analyze, explain and support with evidence, generalize, and create.

Possible Products				
Graph	Survey	Debate	Conclusion	Podcast
Spreadsheet	Database	Panel	Program	Publishing
Checklist	Mobile	Report	Film	Wiki-ing
Chart	Abstract	Evaluating	Animation	
Outline	Report	Investigation	Video cast	

Roles				
Instructor		Student		
Probes	Guides	Discusses	Uncovers	Argues
Observes	Evaluates	Debates	Thinks deeply	Tests
Acts as a resource	Questions	Examines	Questions	Calculates
Organizes	Dissects	Judges	Disputes	Compares
Clarifies	Accepts	Assesses	Decides	Selects
Guides		Justifies		

Potential Activities:

- Use a Venn Diagram that shows how two topics are the same and different
- Design a questionnaire to gather information
- Survey classmates/industry members to find out what they think about a particular topics
- Make a flow chart to show the critical stages.
- Classify the actions of the characters in book
- Prepare a report about an area of study
- Conduct an investigation to produce information to support a view
- Write a letter to the editor after evaluation product
- Prepare and conduct a debate
- Prepare a list of criteria to judge
- Write a persuasive speech arguing for/against...
- Make a booklet about five rules you see as important. Convince others.
- Form a panel to discuss viewpoints on...
- Write a letter to... advertising on changes needed
- Prepare a case to present your view about
- Short-term tasks and projects placing a strong emphasis on transferring knowledge to solve predictable problems
- Explaining and/or working with abstract terms and concepts
- Recognition tasks when the environment observed is real-world and often contains extraneous information which must be sorted through
- Complex calculation problems presented that draw upon multiple processes
- Writing and or explaining tasks that require altering a message to “fit” an audience
- Creating graphs, tables and charts where students must reason through and organize the information with instructor prompts
- Identifying a research question and/or designing investigations to answer a question
- Tasks that involve proposing solutions or making predictions

Level 4-Extended Strategic Thinking

Curricular elements assigned to this level demand extended use of higher order thinking processes such as synthesis, reflection, assessment and adjustment of plans over time. Students are engaged in conducting investigations to solve real-world problems with unpredictable outcomes. Employing and sustaining strategic thinking processes over a longer period of time to solve the problem is a key feature of curricular objectives that are assigned to this level. Key strategic thinking processes that denote this particular level include: synthesize, reflect, conduct, and manage.

Possible Products			
Film	Project	New game	Newspaper
Story	Plan	Song	Media product

Roles				
Instructor		Student		
Facilitates	Extends	Designs	Formulates	Plans
Reflects	Analyses	Takes risks	Modifies	Creates
Evaluates		Proposes		

Potential Activities:

- Applying information to solve ill-defined problems in novel situations
- Tasks that require a number of cognitive and physical skills in order to complete
- Writing and/or research tasks that involve formulating and testing hypotheses over time
- Tasks that require students to make multiple strategic and procedural decisions as they are presented with new information throughout the course of the event
- Tasks that require perspective taking and collaboration with a group of individuals
- Creating graphs, tables, and charts where students must reason through and organize the information without instructor prompts
- Writing tasks that have a strong emphasis on persuasion
- Devise a way to...
- Develop a menu for a new restaurant using a variety of healthy foods
- Sell an idea
- Write a jingle to advertise a new product
- Conduct an internship in industry where students are faced with real-world, unpredictable problem

B. Differentiated Instruction



<https://www.youtube.com/watch?v=8BVvImZcnkw>

DI in Online Instruction: <https://www.youtube.com/watch?v=UfxChKDZDP4>

Differentiating instruction is defined as the planning and delivery of classroom instruction that considers the varied levels of readiness, learning needs, and interests of each student in the class. Instructors practice this by using a range of routines and tools to engage learners at varying levels of readiness in multiple ways and by offering students options for demonstrating their understanding and mastery of the material.

Differentiating instruction encompasses an instructors' response to learner differences by adapting curriculum and instruction on six dimensions:

Figure 9.1: Dimensions of DI

Teacher Dependent

1. Content
2. Process
3. Product



Learner Dependent

1. Interest
2. Process
3. Product

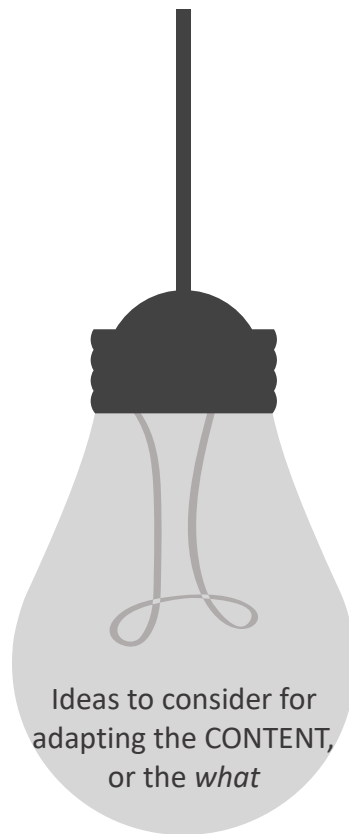
Getting Started Using DI in the Classroom

Take it one dimension at a time. Look at instructor’s teaching styles—try to have them vary the content, process, or product for a particular lesson or across a unit. Look at your learners—get to know something more about their interests, profiles, or readiness. Consider incorporating the ideas shown on the next couple of pages into classroom management, instruction, and approaches.

Using DI in the Classroom: Teacher Dependent Dimension

Content

- 1) Change the complexity of the lesson by varying the complexity along the lines of concretet, symbolic or abstract explorations.
- 2) Vary the resources provided for lesson by utilizing narrative, informational, multimedia, experts and guests.
- 3) Vary the context of the clesson through different classrooms, programs, communities, and virtual environments



Product

- 1) Expecting student work that reflects multiple intelligences
- 2) Consider all eight intelligences in planning: verbal-linguistic, mathematical-logical, musical-rhythmic, visual-spatial, bodily kinesthetic, interpersonal, intrapersonal, and naturalist.
- 3) Assessing completeness through various means
- 4) Collect and use portfolio, rubrics, peer reviews, and performance-based learning.
- 5) Get quick feedback through paperless routines such as thumbs up/down, ranking with fingers 1–5, etc.

Process

- 1) Change how direct instruction is delivered. Work variously with the whole group, small groups & individuals. Reconsider how material is framed; try breaking up a lesson or unit in a new way to chunk & compress material.
- 2) Change your cooperative activies are structured. Arrange flexible, changeable grups & peer activities. Provide roles & clear expectations for group members.
- 3) Change the way you structure inquiry. Use problem-based learning, service learning, and performance-based experiences.

Using DI in the Classroom: Leader Dependent Dimension



Interests

What are your students' interests? Take time to find out through methods such as the following:

- 1) journals and response to prompts. For example:
 - If you had your GED or college degree tomorrow, what would you want to be doing?
 - What is one job you would want to have and why?
- 2) Informal conversations and ice breakers
- 3) Sharing opportunities with the whole class
- 4) Community events



Profiles

Ideas to consider for accommodating learner **profiles (strengths, weaknesses, gaps)**:

- 1) Disability screening results—know how to accommodate learning and attention difficulties
- 2) Cultural and linguistic factors
- 3) Health and wellness factors
- 4) Age and years out of school setting
- 5) Past educational and academic experiences



Readiness

Beyond test scores, think about what you know about your learners' **readiness** as evidenced by:

- Past educational achievement
- Background knowledge
- Self-efficacy (How do they attribute success and effort?)

Differentiated Instruction

What is Differentiated Instruction?

Differentiation is an instructional process in which teachers proactively accommodate curriculum, instruction, learning activities, and student products to maximize each student's growth and individual success by meeting their learning needs.



Listening to audio books really helps me remember.

Working together in a group helped me understand.

I built a diorama to illustrate the story.

I like the online interactive tasks best.

I prefer to just read the assignment quietly.

Giving an oral book report is easier for me.

Differentiated Instruction helps students follow their own paths to learning.

Differentiated Instruction

Differentiated instruction is an approach that enables instructors to plan strategically to meet the needs of every learner. The approach encompasses planning and delivery of instruction, classroom management techniques, and expectations of learners' performance that take into consideration the diversity and varied levels of readiness, interests, and learning profiles of learners.

About Differentiated Instruction

Differentiated instruction is an approach that enables instructors to plan strategically to meet the needs of every learner. It is rooted in the belief that there is variability among any group of learners and that instructors should adjust instruction accordingly (Tomlinson, 1999, 2001, 2003). The approach encompasses the planning and delivery of instruction, classroom management techniques, and expectations of learners' performance that take into consideration the diversity and varied levels of readiness, interests, and learning profiles of the learners.

Differentiated instruction can be looked at as an instructor's response to learner differences by adapting curriculum and instruction on six dimensions, including how the instructor approaches the (1) **content** (the *what* of the lesson), (2) **process** (the *how* of the lesson), and (3) expected **product** (the learner-produced result), and takes into consideration the learner's (4) **interest**, (5) **profile** (their learning strengths, weaknesses and gaps), and (6) **readiness**. These adaptations can be planned to happen simultaneously, in sequence, or as needed depending on the circumstance and goals of instruction. Teaching small groups of learners, grouped based on instructional approach and learner profile, is a cornerstone of differentiated instruction.

How Does It Work in Adult Education?

Here is an example. An instructor who is teaching writing (the **content**) in an adult basic education (ABE) class needs to understand the various learners' **readiness** to write independently or collaboratively, the supports they might need to engage in the

process based on their learning **profiles**, the quality and quantity of the learner **product** to be expected, and the learners' **interests**. Some of this understanding will come from professional observation of the learners over time; some of it will come from informal assessments gathered from previous writing assignments.

Planning is critical. For instance, knowing that some learners need templates, prompts, or advance organizers to prepare them to write, or software to assist them with spelling, means that the necessary supports, such as use of the computer lab for the use of concept-mapping software and word processors, need to be planned for in advance. Perhaps a colleague who has more experience with a particular level or type of learner can collaborate or team teach a small group to better meet their needs. Perhaps a more advanced peer learner can run a small group or provide technology assistance.

An instructor teaching persuasive essays (the **content**) may begin with a study of various models such as op-ed pieces from the local newspaper to identify the elements of such an essay. The class may spend time brainstorming to elicit learners' **interests** in various "hot topics" of the day, while creating lists of vocabulary words to support composition. Deciding on a couple of key topics, learners may be grouped to continue to generate possible argument points. A scribe in the group can generate a web or advance organizer that captures the discussion. Learners can then be regrouped according to the level of support they need (their **profile** and **readiness**) for composition (the **process**).

Those who can compose on their own can work independently or in dyads to conduct further research on the Internet to provide evidence for their argument; those who need technical support can work in the computer lab with the instructor and an advanced peer, possibly with a pre-created outline or template; those who cannot compose on their own can work in a smaller group with a tutor or the instructor to generate a group essay that learners can each then work on for editing and revising. Conferencing with each learner can be another opportunity for accommodating learners' **readiness** by focusing only on the mechanics,

grammar, or organizational elements that the writer is able to master. Final products can be shared in various ways: published by the learners to a blog or submitted to a newspaper, posted in the classroom, read to the class, etc. The essays, the **products**, which result from the group will be varied in their complexity and sophistication, yet all learners will have engaged in the process and basic key elements of a persuasive essay (brainstorming, planning, outlining, composing, editing, revising, and sharing).

How Can Technology Help?

Technology tools can help make this coordination more efficient by providing productivity support for instructors, by providing supports for learners at varying levels of readiness, and by offering learners options for demonstrating their understanding and mastery of the material. To see how technology can help, see the TEAL Center fact sheet, *Technology-Supported Writing Instruction*.

Managing Differentiated Instruction

Classroom management to coordinate flexible groupings and projects is a key component of applying differentiated instruction. Following are some ideas for creating and coordinating groups in a multi-level, differentiated class:

- Set up stations in the classroom where different learning groups can work simultaneously. Such stations naturally invite flexible grouping.
 - Encourage peer-to-peer learning and mentoring and help learners learn to be tutors.
 - Ask volunteers to lead small group instruction stations.
- Structure problem-based learning (PBL) to have learners actively solve problems, either individually or in small groups.
 - Use [WebQuests \(http://webquest.org/index.php\)](http://webquest.org/index.php) as PBL for teams of learners; these inquiry-based projects are pre-arranged and many have teaching supports (lesson plans, tips, handouts, and additional materials) linked to them.
 - Share reflections with other instructors leading problem-based learning at www.Edutopia.org.
- Assign tiered activities to allow learners to work on the same concepts but with varying degrees of complexity.
 - Find texts on a single, encompassing topic (for example, climate change) in various levels of complexity and readability.
 - Encourage learners to find audio books and digital text at their interest level rather than their independent reading level.
- Employ compacting: assess learners' knowledge and skills before beginning a unit of study and allow learners to move to advanced work based on their pre-assessment.
 - Find ways to give credit for independent study and advancement if a learner is particularly motivated or interested in a topic.
 - Help learners supplement class instruction with online classes or learning opportunities such as webinars, online chats, blogs, social networks, or daily content blasts (e-mails such as a *Word of the day*, or *This day in history*, can be a boost to vocabulary and content knowledge).
- Institute chunking, or breaking assignments and activities into smaller, more manageable parts, and providing more structured directions for each part.
 - Have learners make personalized lists of tasks to complete the chunks in a specified but flexible timeframe.
 - Encourage self-study, especially when learners have to "stop out" of regular attendance.
- Model differentiation by keeping grades and scores in a variety of ways.
 - Use portfolios as a means for reflecting on learner growth over time, and encourage learners to critique their growth.
 - Keep scores and observations in a spreadsheet that can be sorted flexibly to reveal natural groups.



What's the Research?

This TEAL Center fact sheet draws on two NCSALL *Focus on the Basics* articles (Corley, 2005; Silver-Pacuilla, 2007), and resources created by the Center for Implementing Technology in Education (www.cited.org, see the Research section).

For adult education, the principles of differentiating instruction are not new: engaging learners based on their interests, creating activities based on learners' needs and roles, and recognizing and honoring the diversity in any classroom. Applying these principles informed by the analysis of formal and informal assessment data may require a new way of working, however, as well as enhanced coordination among instructors within a program, lesson planning, and instructional delivery. See related TEAL Center fact sheets on Student-centered Learning (No. 6), Lesson Planning (No. 8), and Adult Learning Theory (No. 11).

References

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Authors: TEAL Center staff

Adapted from two NCSALL *Focus on the Basics* articles, Vol. 7 Issue C and Vol. 8 Issue D.

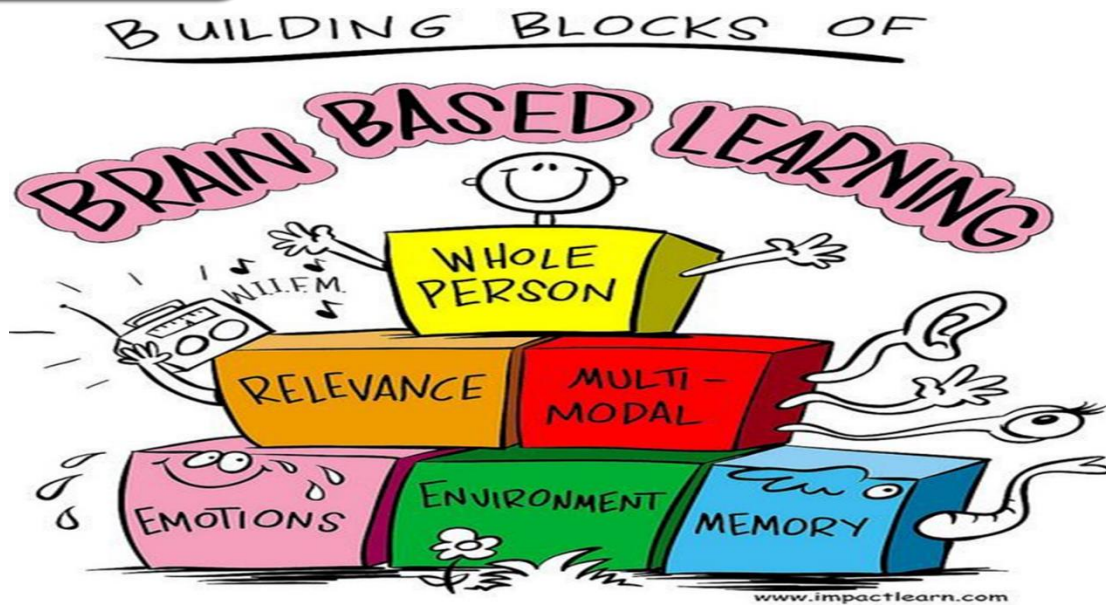
About the TEAL Center: The Teaching Excellence in Adult Literacy (TEAL) Center is a project of the U.S. Department of Education, Office of Vocational and Adult Education (OVAE), designed to improve the quality of teaching in adult education in the content areas.

C. Brain Based Learning



Watch Video

<https://www.youtube.com/watch?v=3Xgzhlm4i3g&t=770s>



Brain-based learning refers to teaching methods, lesson designs, and school programs that are **based** on the latest scientific research about how the **brain** learns, including such factors as cognitive development—how students learn differently as they age, grow, and mature socially, emotionally, and cognitively.

This type of education provides a biologically driven framework for teaching and learning, and helps explain recurring learning behaviors. It is a meta-concept that includes an eclectic mix of techniques. Currently, these techniques stress allowing teachers to connect learning to students' real life experiences.

A brief overview of BBL is available on a slideshare at: <https://www.slideshare.net/annetitong/brain-based-learning-23123104>.

Brain-based learning plays a large role in the Career Services courses in Wyoming.

Resources for BBL

- 1) Readings on Brain Based Learning can be found in Appendix #1 to this Chapter.
- 2) <https://blog.edmentum.com/5-brain-based-learning-strategies-boost-learning-retention-and-focus>
- 3) <https://www.thinkingmaps.com/what-do-we-mean-by-brain-based-teaching/>
- 4) <https://www.waterford.org/education/brain-based-learning/>

D. Participatory Learning: Creating a Learning Community (Align & Redesign, by Dr. Laura Weisel)

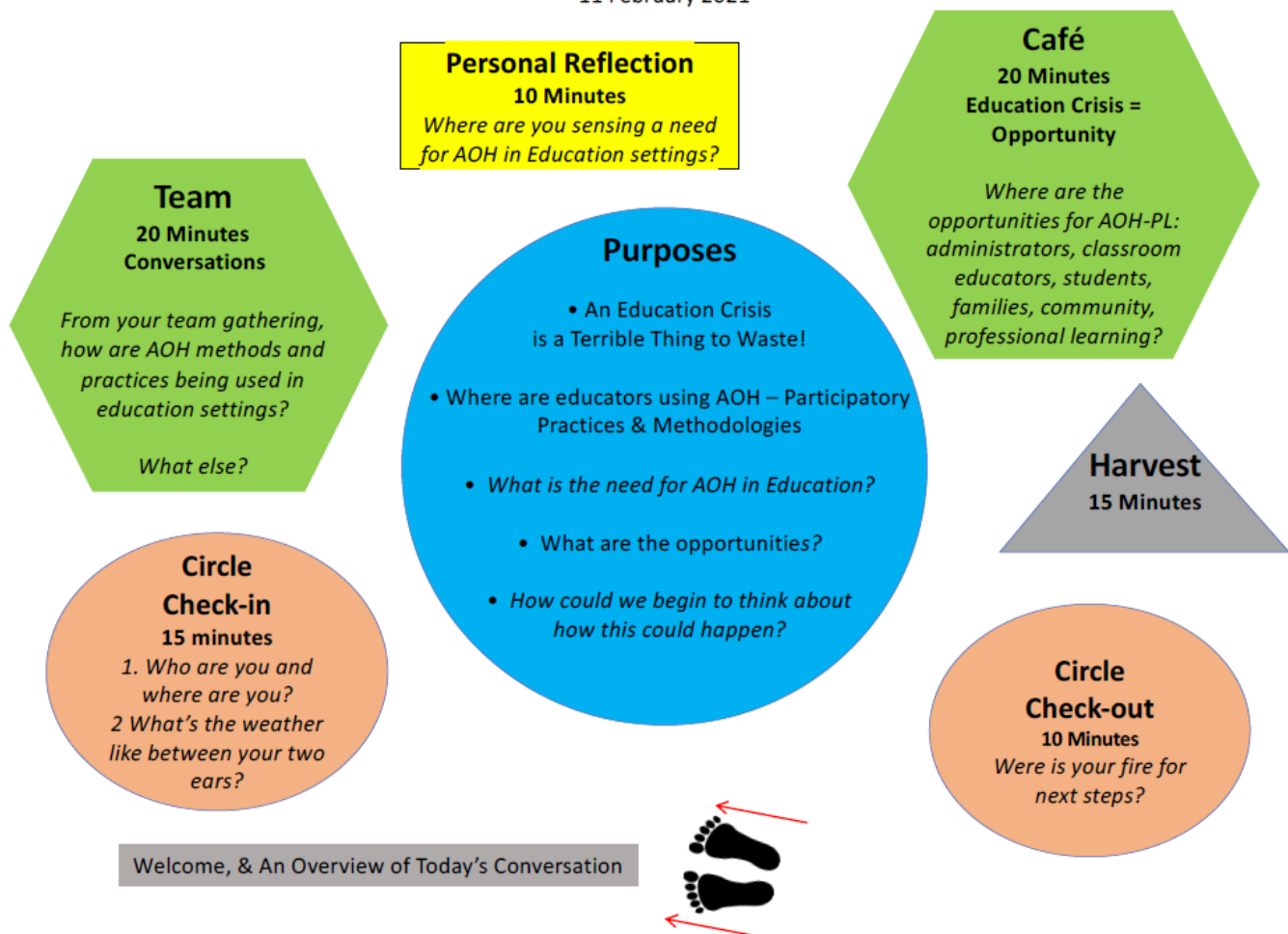
The Art of Hosting Conversations (http://www.artofhosting.org/wp-content/uploads/2020/07/Article-I-AOH-Participatory-Learning-4.20-4.pdf)

The Art of Hosting Learning

The Art of Hosting (AOH) processes were originally a set of individual methods and practices that, in combination with one another, have been successful in engaging individuals to work together in dialogue on social and organizational issues. Each of the participatory processes has its own author who has published books or manuals describing their approaches to engaging individuals to work collaboratively with peers and constituent groups. The five core participatory methods of AOH are: The Circle, The Café, Open Space, Appreciative Inquiry, and ProAction Café. Each of these learning methodologies are discussed on subsequent pages.

Art of Hosting Conversations that Matter in Education

11 February 2021



Circle	<ul style="list-style-type: none"> • Speaking & setting intention, speaking in a group, active listening, taking turns, getting/giving support
World Cafe	<ul style="list-style-type: none"> • Collaboration, working in a team, listening to and discussing diverse ideas & opinions, building a collective model, managing time, taking a leadership role, self advocacy, putting abstract ideas into a visual model, active listening, peer learning & coaching.
Open Space	<ul style="list-style-type: none"> • Leadership, asking questions, offering something of interest to others, active listening, asking for help and offering help, diagramming/summarizing a conversation
Appreciative Inquiry	<ul style="list-style-type: none"> • Looking for the positive, managing negative situations from a strengths-based, positive view, viewing life, people, & daily situations from a positive vantage point.
ProAction Cafe	<ul style="list-style-type: none"> • Creating hospitable space, focusing on the host's questions/challenges, asking questions but not offering answers or solutions, encouraging each person's contribution, creating mind maps/web of a conversation, and listening together for patterns, insights, and deeper questions

All local programs in Wyoming utilize participatory learning strategies in their classrooms. These are first introduced to students in the Career Services courses.

Participatory learning encompasses a range of techniques and methods for facilitating and enabling students to come together in groups (usually small groups) to share knowledge and ideas, discuss, debate and deliberate, analyze and critique, and construct and create knowledge and theory.

Dr. Laura Weisel introduced participatory learning strategies into Adult Education programs several years ago and after an intensive amount of training, participatory learning in some form is used throughout all Adult Education programs in the State of Wyoming. Participatory learning is important as each method has the development of social capital skills embedded within them. (See Participatory Learning Guidebook in Appendix #2)

In education, social capital skills are the key to success. Stephen Black, a professor and researcher in Sydney, Australia in his presentation on Social Capital Skills in Education, states, “It’s the relationships people have, the groups they belong to, the networks they link into, the contacts they’ve got. It’s about the trust they have in others. It’s also how they interact with these other people—how they present themselves. This may be related to their confidence and to their skills.”

Participatory Learning Circle

Definition

The Circle, or council, is an ancient form of meeting that has gathered humans in respectful conversations for thousands of years. In some areas of the world this tradition remains intact, but in some societies it has been nearly forgotten. Circling is a modern methodology that calls on this tradition and helps people gather in conversations that fulfill their potential and desire for learning via conversations or dialogues that replenish, engage, excite, and create wisdom-based change....which is real and sustaining learning.

"In helping others, we shall help ourselves, for whatever good we give out completes the circle and comes back to us."
Flora Edwards

What is Circle good for?

ADAPTABILITY to a variety of situations, curriculum, and time frames.

BUILDING SOCIAL CAPITAL SKILLS

METHODOLOGY

Use daily to "check-in" and "check-out"
Focus on the positive, build on what is good
Learn through reflection and developing insight
Set intentions and a growth mindset
Build community



Materials

- CHAIRS ARRANGED INTO A CIRCLE**
Participants should be able to view each other without impediments (i.e. tables or desks)
- TALKING PIECE**
- CHIME, BELL, OR GENTLE NOISEMAKER**



Four Agreements of Circle

- LISTEN WITHOUT JUDGMENT (SLOW DOWN AND LISTEN)**
- WHATEVER IS SAID IN CIRCLE STAYS IN CIRCLE**
- OFFER WHAT YOU CAN AND ASK FOR WHAT YOU NEED**
- SILENCE IS ALSO PART OF THE CONVERSATION**

Practices of Circle

- SPEAK WITH INTENTION**
Noting what has relevance to the conversation in the moment
- LISTEN WITH ATTENTION**
Respectful of the learning process of all members of the group
- TEND TO THE WELL-BEING OF THE GROUP**
Remaining aware of the impact of our contributions



Flow

- WELCOME AND OVERVIEW/REFLECTION**
- REVIEW THE 4 AGREEMENTS AND 3 PRACTICES**
- SET STAGE WITH 2 QUESTIONS - PRESENT, INTENTION AND/OR REFLECTION**
- OFFER A 'TALKING PIECE'**
- BE THE GUARDIAN OF THE PROCESS**

Check-in or Check-out starts with an overview (check-in) or review (check-out) of the day or time together. The host then offers two questions. The talking piece is placed in the center and taken by the first person who wants to speak. The talking piece is passed around the circle as participants respond to the questions. If an individual is not ready to speak, the turn is passed and another opportunity is offered after others have spoken.

Closing the class by checking out provides a formal end to the session, a chance for participants to reflect on what has transpired - content and process.



Principles

- ROTATE LEADERSHIP**
- TAKE RESPONSIBILITY**
- HAVE A HIGHER PURPOSE**

Social Capital Skills Practiced in Circle

- SPEAKING IN FRONT OF A GROUP**
- SPEAKING WITH AND SETTING INTENTION**
- TAKING TURNS**
- KNOWING WHEN TO STOP TALKING AND PASS**
- LISTENING WITH ATTENTION**
- TALKING FROM THE HEART**
- HOLDING JUDGMENT**
- OFFERING SUPPORT TO PEERS**

Participatory Learning World Café

Definition

The World Café is a method for creating a collaborative learning conversation around questions that matter by innovating instruction in the classroom. Café is ideal for administrators to develop collaboration and co-creation with faculty, boards, and community partners.

What is World Café Good For?

World Café is a great way of fostering interaction and collaboration, sharing learnings or knowledge, generating ideas, and constructing dialogues with both large and small groups. It is particularly effective in surfacing the 'collective wisdom' of groups of diverse participants. The café format is very flexible and adapts to many different purposes – information sharing, relationship building, deep reflection, skill building, project planning.

When planning a café, make sure to leave ample time for moving through the multiple rounds of questions and harvesting.

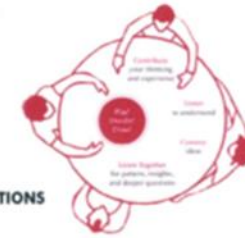


- Materials**
- TABLES AND CHAIRS
 - TABLECLOTHS OR SOMETHING TO MAKE THE CLASSROOM FEEL 'COMFORTABLE AND INFORMAL'
 - EASEL-SIZE PAPER TO COVER TABLES AND FOR HARVESTING
 - MARKERS IN MULTIPLE COLORS



7 Operating Principles

1. CREATE HOSPITABLE SPACE
2. EXPLORE QUESTIONS THAT MATTER
3. ENCOURAGE EACH PERSON'S CONTRIBUTION
4. CONNECT DIVERSE PEOPLE AND IDEAS
5. CONNECT ABSTRACT IDEAS IN A GRAPHIC ORGANIZER
6. LISTEN TOGETHER FOR PATTERNS, INSIGHTS, & DEEPER QUESTIONS
7. MAKE COLLECTIVE KNOWLEDGE VISIBLE FOR SHARING



Social Capital Skills Practiced in World Café

- COLLABORATION
- WORKING IN A TEAM
- LISTENING AND DISCUSSING DIVERSE IDEAS/OPINIONS
- BUILDING A COLLECTIVE DIAGRAM OR MODEL
- MANAGING TIME
- TAKING A LEADERSHIP ROLE
- SELF-ADVOCACY
- PUTTING ABSTRACT IDEAS INTO VISUAL MODEL
- ACTIVE LISTENING
- FRAMING POWERFUL LEARNING QUESTIONS
- PEER LEARNING AND COACHING

Assumptions

THE KNOWLEDGE AND WISDOM WE NEED IS PRESENT AND ACCESSIBLE.

COLLECTIVE INSIGHT COMES FROM HONORING UNIQUE CONTRIBUTIONS; CONNECTING IDEAS; LISTENING INTO THE MIDDLE; NOTICING DEEPER THEMES AND QUESTIONS.

INTELLIGENCE EMERGES AS PARTICIPANTS CONNECT IN DIVERSE & CREATIVE WAYS.



Flow

Seat 4-5 participants at café-style tables or in conversation clusters.

Clarify the context of the café and state the question or questions on the specific topic.

Each café-table selects a host; the host selects a time keeper and a lead writer/drawer.

The question(s) are written at the top of the easel paper in the center of the table.

Begin the dialogue and let the conversation continue for 15 - 30 minutes.

The conversation is documented using a graphic organizer, mindmap or web.

Begin the second round on the same or a next question by having the host stay at the table and participants move to another table.

Begin the 2nd round by having the host briefly share with new table members the key insights and ideas discussed in the first café, then new members build on what has already been documented and add to the depth and breath on the conversation topic.

Allow time for a whole-group harvest of the conversations.

Set up progressive rounds of conversation, usually of 15-30 minutes each – have some good questions!



Participatory Learning

Appreciative Inquiry



Definition

Appreciative Inquiry (AI) is a strategy for intentional change that identifies the best of 'what is' to pursue dreams and possibilities of 'what could be.' AI is a cooperative search for strengths, what is known, what is right.

AI focuses on the positive and strengths seeking to build on what is currently working as blocks leading to a positive and productive future. This focus on strengths and what is right offers an opportunity for individuals to accept what is known and to build on what works. Research has shown that this approach is the only successful way to bring about long-term change and deep learning.

Problem Solving	Appreciative Inquiry
"Felt need" Identification of the problem	Appreciating & valuing the best of "what is"
Analysis of causes	Envisioning "what might be"
Analysis of possible solutions	Dialoguing "What should be" Innovating "What will be"
Basic Assumption: Learning is a problem to be solved.	Basic Assumption: Learning is a mystery to be embraced.

What is Appreciative Inquiry Good For?

Appreciative Inquiry is useful when a different perspective is needed, or when we wish to begin a new process, set of information, academic or work skills with a fresh, positive vantage point. Appreciative Inquiry can help move a group that is stuck in "what is" toward "what could be." Appreciative Inquiry can be used with individuals, small groups, or large classes.

Assumptions

- IN EVERY LEARNING SITUATION....SOMETHING WORKS
- WHAT WE FOCUS ON BECOMES OUR REALITY
- REALITY IS CREATED IN THE MOMENT - THERE IS MORE THAN ONE REALITY
- THE ACT OF ASKING QUESTIONS INFLUENCES THE COMMUNITY IN SOME WAY
- PEOPLE HAVE MORE CONFIDENCE AND COMFORT TO JOURNEY TO THE FUTURE WHEN THEY CARRY FORWARD PARTS OF THE PAST
- IF WE CARRY FORWARD PARTS OF THE PAST, THEY SHOULD BE WHAT IS BEST
- IT IS IMPORTANT TO VALUE DIFFERENCES
- THE LANGUAGE WE USE CREATES OUR REALITY

Social Capital Skills Practice with Appreciative Inquiry



- SEEKING THE POSITIVE.
- MANAGING NEGATIVE SITUATIONS LOOKING FOR THE POSITIVES
- AND THEN ASKING HOW COULD THIS SITUATION BECOME MANAGEABLE.
- LOOKING AT LIFE, PEOPLE, DAILY SITUATIONS FROM A POSITIVE VANTAGE POINT.

Flow

- DISCOVER: IDENTIFYING THE EXPERIENCE OR LEARNING PROCESSES THAT WORK WELL.
- DREAM: ENVISIONING AN EXPERIENCE OR LEARNING PROCESSES THAT WOULD WORK WELL IN THE FUTURE.
- DESIGN: PLANNING AND PRIORITIZING THOSE POSITIVE PROCESSES.
- DELIVER: IMPLEMENTING THE PROPOSED DESIGN.

Engage participants in creating the most conducive classroom or place for learning. Have participants help plan the experience or class to build a positive learning process. The basic idea is to build learning around what works, rather than trying to fix what doesn't. Appreciative Inquiry can be used as a way of opening a class or conversation by identifying what already works.

In looking at any work completed by participants or any assessment, always focus on what was is correct/accurate. Then decide the next steps of learning by building the next layer of information or skills on the known layer.

At the center is creating an experience that is positive - is how we ask even the very first question. Incorporate the seeds of change we are looking for in everything we do and say.

Participatory Learning Open Space



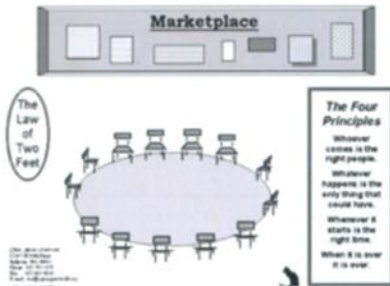
Definition

The goal of Open Space is to create time and space for participants to engage, ask questions, and/or share knowledge around issues of concern to them (such as review of an upcoming test, managing a project-based learning experience, planning a 'real life' field trip around a content issue or topic of interest).

Using Open Space in classes can result in a transformative experience for the individuals and groups involved. It is a simple and powerful way to catalyze effective working conversations and truly invite participants to thrive and be in the role of leader, knowledge sharer, and questioner.

Materials

- A BLANK WALL THAT WILL BECOME THE MARKETPLACE OF TOPICS OR QUESTIONS
- A NEWS WALL FOR RECORDING AND POSTING THE RESULTS OF THE DISCUSSIONS
- BREAKOUT SPACES FOR THE SMALL GROUP DISCUSSIONS
- EASEL PAPER FOR WRITING SESSION TOPICS/QUESTIONS PLUS MARKERS/PENCILS/PENS
- POSTERS OF THE PRINCIPLES, LAW OF TWO FEET, AND ROLES (OPTIONAL)



What is Open Space good for?

Open Space is useful in almost any context, including pre-test reviews planning outings or managing of curriculum topics, collaboration and deep learning about issues and content.

Principals

WHOEVER COMES ARE THE RIGHT PEOPLE
WHENEVER IT STARTS IS THE RIGHT TIME
WHATEVER HAPPENS IS THE ONLY THING THAT COULD HAVE
WHEN ITS OVER ITS OVER



Roles

HOST
PARTICIPANT
BUMBLE BEE
BUTTERFLY

Social Capital Skills Practiced in Open Space

- LEADERSHIP
- ASKING QUESTIONS
- OFFERING SOMETHING OF INTEREST TO OTHERS
- ACTIVE LISTENING
- ASKING FOR HELP AND OFFERING HELP
- DIAGRAMMING AND/OR SUMMARIZING A CONVERSATION

The Law of Two Feet

If you find yourself in a situation where you are not contributing or learning, move somewhere where you can.



Flow

The group convenes in a circle and is welcomed by the host.

The host provides an overview of the process and explains how it works. The host invites people with issues of concern, questions, ideas to share or knowledge to offer to come into the circle, write the issue on a piece of paper or colored index card and announce it to the group.

The people with the issues, questions, ideas or knowledge to offer are "conveners." The convener either identifies their own place to host a conversation or is placed in a location by the host. He/she then places their paper or card with their issue, question or knowledge to offer on the wall, hangs an easel paper under the paper/card on the wall

When several conveners are set-up, the host invites the members of the group to join the conversations they are interested in - again, participants can be a participant, bumble bee or butterfly.

Conversations convene for the balance of the session. The convener captures the important points of the conversation they lead by making a graphic organizer, mind map or web to summarize the conversation. He/She posts their summary on the wall. All of these summaries will be shared as a harvest in some way and returned shared back with the larger group.

Participatory Learning ProAction Cafe

Definition

The ProAction Cafe is a space for creative and action-oriented conversations where participants are invited to bring their challenge, project, ideas, questions or whatever they feel called by and need help to create or make happen.

These conversations link and build on each other as people move between cafe tables, cross-pollinate ideas, and offer each other new insights into the questions or issues that are most important in their life, school, work, or community.

The concept of ProAction Cafe is a blend of 'World Cafe' and 'Open Space'.

"The purpose of human life is to serve, to show compassion and the will to help others."

Albert Schweitzer



Materials

TABLES WITH 4 CHAIRS

TABLECLOTHS OR SOMETHING TO MAKE THE SPACE FEEL 'COMFORTABLE AND INFORMAL'

EASEL-SIZE PAPER, STICKY NOTES, AND COLORED MARKERS

What is ProAction Cafe good for?

To support colleagues/co-workers/friends to find solutions to a problem, clarifying an idea, or managing a challenge by responding to questions that can give insight and ideas on how to move forward into action.

BUILDS KEY SOCIAL CAPITAL SKILLS
SUPPORTS SKILLS NEEDED TO SUSTAIN A LEARNING COMMUNITY



6 Operating Principles

1. CREATE HOSPITABLE SPACE
2. FOCUS ON THE HOST'S QUESTIONS/CHALLENGES
3. ASK QUESTIONS - DON'T OFFER ANSWERS OR SOLUTIONS
3. ENCOURAGE EACH PERSON'S CONTRIBUTION
4. HOST CREATES HIS/HER OWN MINDMAP/WEB OF THE CONVERSATION
5. LISTEN TOGETHER FOR PATTERNS, INSIGHTS, & DEEPER QUESTIONS



Social Capital Skills Practiced in a ProAction Cafe

SPEAKING IN FRONT OF A GROUP
OFFERING QUESTIONS RATHER THAN SOLUTIONS

GIVING WHAT YOU CAN AND ASKING FOR WHAT YOU NEED

WITHHOLDING JUDGEMENT AND OPINIONS

TALKING FROM THE HEART
OFFERING SUPPORT TO PEERS



Flow

CREATE a Market Place

DEVIDE the number of participants by 4 - that will determine the number of ProAction Cafes that can be set-up for the ProAction Cafe process: a cafe table for a host and 3 - 4 participants/peer consultants.

HAVE the cafe tables pre-set for the conversations with easel paper, sticky notes, and markers.

OFFER "If you have a question or situation you are struggling with (at home, on the job or in school), write it on a 5x8 card, call a conversation, post your card on the Market Place, and welcome your peer consultants to join you in a ProAction Cafe."

WITH a host and 3-4 consultants at a cafe table, the hosts takes a few minutes to introduce their question/issue/challenge that could use some guidance on ways that could help with an action plan.

TWO questions are used to ignite the conversation:

1. **What is the purpose behind or underneath the call/question/challenge?** This question deepens the reasons for the need and purpose of the call. In other words, it is important to dig under the surface of what we know already.

2. **What is missing?** When the quest has been deepened, a discover question explores what else should be considered to make the resolution more complete and possible.

BETWEEN the two questions, take a quick break. Let the host reflect on the question before the next round begins. For the 2nd round, new peer consultants could come in for the second round...or not.

AT the end of round two, the host takes some time to write some harvest notes by answering the following questions: **What am I grateful for? What are my next steps?** After reflection, the host offers their reflections to the group.

E. Universal Design for Learning (<https://udlguidelines.cast.org/>)



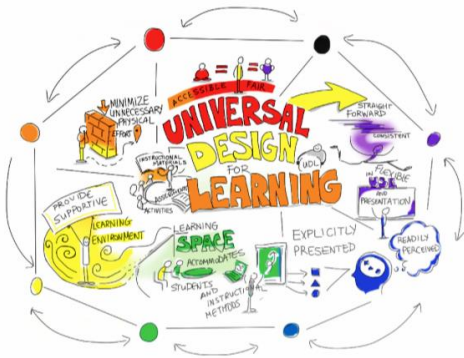
Watch Video

https://www.youtube.com/watch?v=wVTm8vQRvNc&feature=emb_logo

UDL is an approach to curriculum design that can help teachers customize curriculum to serve all learners, regardless of ability, disability, age, gender, or cultural and linguistic background. UDL provides a blueprint for designing strategies, materials, assessments, and tools to reach and teach students with diverse needs.

About UDL

Universal design for learning (UDL) is a set of principles for designing curriculum that provides all individuals with equal opportunities to learn. UDL is designed to serve all learners, regardless of ability, disability, age, gender, or cultural and linguistic background. UDL provides a blueprint for designing goals, methods, materials, and assessments, to reach all students including those with diverse needs. Grounded in research of learner differences and effective instructional settings, UDL principles call for varied and flexible ways to *Present* or access information, concepts, and ideas (the "what" of learning), *Plan* and execute learning tasks (the "how" of learning), and *Get engaged*--and stay engaged--in learning (the "why" of learning)



UDL is different from other approaches to curriculum design in that educators begin the design process expecting the curriculum to be used by a diverse set of students with varying skills and abilities.

UDL is an approach to learning that addresses and redresses the primary barrier to learning: inflexible, one-size-fits-all curricula that raise unintentional barriers. Learners with disabilities are the most vulnerable to such barriers, but many students without disabilities also find that curricula are poorly designed to meet their learning needs. UDL helps meet the challenges of diversity by recommending the use of flexible instructional materials, techniques, and strategies that empower educators to meet students' diverse needs. A universally designed curriculum is shaped from the outset to meet the needs of the greatest number of users, making costly, time-consuming, and after-the-fact changes to the curriculum unnecessary.

How Can Students Benefit From UDL?

Adult students benefit from two major aspects of UDL: (1) its emphasis on flexible curriculum, and (2) the variety of instructional practices, materials, and learning activities. All students, including those learning English, older students, and those with disabilities appreciate the multifaceted ways content is presented, as well as options for demonstrating what they know. UDL helps educators meet the challenge of serving those with special needs while enhancing learning for all.



Guidelines


UDL Guidelines are a tool used to improve and optimize teaching and learning for all people based on scientific insights into how humans learn. These guidelines can be used by educators, curriculum developers, researchers, parents, and anyone else who wants to implement the UDL framework in a learning environment.

Provide multiple means of Engagement




Affective Networks
The "WHY" of Learning

Provide multiple means of Representation



Recognition Networks
The "WHAT" of Learning

Provide multiple means of Action & Expression



Strategic Networks
The "HOW" of Learning

Access	<p>Provide options for Recruiting Interest (7)</p> <ul style="list-style-type: none"> Optimize individual choice and autonomy (7.1) Optimize relevance, value, and authenticity (7.2) Minimize threats and distractions (7.3) 	<p>Provide options for Perception (1)</p> <ul style="list-style-type: none"> Offer ways of customizing the display of information (1.1) Offer alternatives for auditory information (1.2) Offer alternatives for visual information (1.3) 	<p>Provide options for Physical Action (4)</p> <ul style="list-style-type: none"> Vary the methods for response and navigation (4.1) Optimize access to tools and assistive technologies (4.2)
	<p>Provide options for Sustaining Effort & Persistence (8)</p> <ul style="list-style-type: none"> Heighten salience of goals and objectives (8.1) Vary demands and resources to optimize challenge (8.2) Foster collaboration and community (8.3) Increase mastery-oriented feedback (8.4) 	<p>Provide options for Language & Symbols (2)</p> <ul style="list-style-type: none"> Clarify vocabulary and symbols (2.1) Clarify syntax and structure (2.2) Support decoding of text, mathematical notation, and symbols (2.3) Promote understanding across languages (2.4) Illustrate through multiple media (2.5) 	<p>Provide options for Expression & Communication (5)</p> <ul style="list-style-type: none"> Use multiple media for communication (5.1) Use multiple tools for construction and composition (5.2) Build fluencies with graduated levels of support for practice and performance (5.3)
Internalize	<p>Provide options for Self Regulation (9)</p> <ul style="list-style-type: none"> Promote expectations and beliefs that optimize motivation (9.1) Facilitate personal coping skills and strategies (9.2) Develop self-assessment and reflection (9.3) 	<p>Provide options for Comprehension (3)</p> <ul style="list-style-type: none"> Activate or supply background knowledge (3.1) Highlight patterns, critical features, big ideas, and relationships (3.2) Guide information processing and visualization (3.3) Maximize transfer and generalization (3.4) 	<p>Provide options for Executive Functions (6)</p> <ul style="list-style-type: none"> Guide appropriate goal-setting (6.1) Support planning and strategy development (6.2) Facilitate managing information and resources (6.3) Enhance capacity for monitoring progress (6.4)
Goal	<p>Expert learners who are...</p> <div style="display: flex; justify-content: space-around;"> <div style="background-color: #2e8b57; color: white; padding: 5px; border-radius: 10px;">Purposeful & Motivated</div> <div style="background-color: #6a3d9a; color: white; padding: 5px; border-radius: 10px;">Resourceful & Knowledgeable</div> <div style="background-color: #0070c0; color: white; padding: 5px; border-radius: 10px;">Strategic & Goal-Directed</div> </div>		

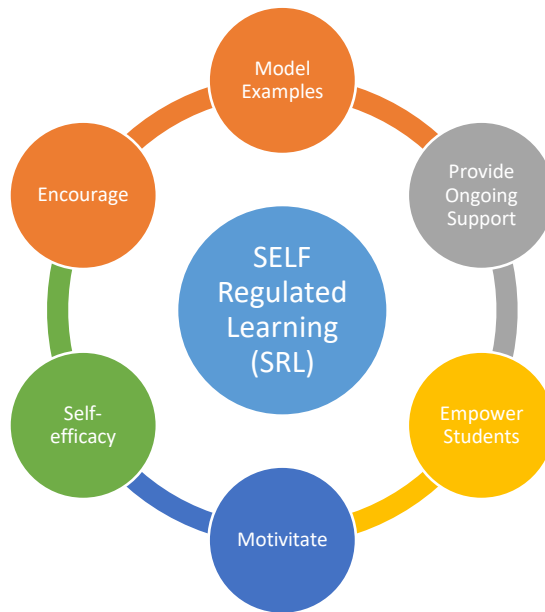
udguidelines.cast.org | © CAST, Inc. 2018 | Suggested Citation: CAST (2018). Universal design for learning guidelines version 2.2 [graphic organizer]. Wakefield, MA: Author.

F. Self Regulated Learning



<https://www.youtube.com/watch?v=uRHRWXKU6bY>

Self-regulated Learning (SRL) refers to one's ability to understand and control one's learning behaviors. In order for the learner to do this, he or she must set goals, select the strategies to achieve the goals and monitor progress toward the goals. A key element is not to simply relay content or problem-solving techniques, but to explicitly teach students 'how' to learn. Being explicit about how to use different learning strategies will help students develop a suite of tools they can draw from as they work through a program of study.



- Model examples of your own thought process, narrating as you explain how to solve problems. (Zumbrunn et.al, 2011)
- Provide ongoing support. Students in an unfamiliar discipline are unlikely to know which strategies to use, and they may lose interest or motivation if not coached and encouraged (Zimmerman 2002).
- Ultimately, migrate toward empowering students to become their own managers. In time they will develop the capacity to self-regulate (Zimmerman, 2002).
- Many students, particularly those who are the first in their families to attend college, are motivated to master skills that will help them in a career. Point out that self-regulated learning is essential for learning new skills or concepts in the workplace. Motivation and self-satisfaction improve when students have success with the use of effective learning techniques (Zimmerman, 2002; Zumbrunn et al., 2011). Promote students' positive self-perceptions of competence and motivational beliefs. You cannot underestimate the power of belief.
- Self-efficacy has been defined as "beliefs about [learners] capabilities to exercise control over their own level of functioning and over events that affect their lives" (Bandura, 1993, p. 118). Perceptions of self-efficacy are critical. Students' perceptions of self-efficacy influence the goals they set, their commitment to those goals, and the learning strategies employed. Low perceptions of self-efficacy undermine students' willingness to invest effort in tasks.

Turning students on to their own capacity to believe in themselves is an incredibly powerful teaching tool. Our students are going to have to put in a lot of effort to improve their writing and other basic skills – help them understand the value of that effort and supply some new self-talk scripts.

- Encourage students to ask for help when they need it. Strive to create a two-way, open dialog.

G. Research-based Writing Instruction (TEAL Center Fact Sheet No. 1: Research-Based Writing Instruction, 2010)

About Writing Instruction

Recent national research has gathered what we know about effective practices to teach writing. *Writing Next* (Graham & Perin, 2007), and a companion analysis, *What We Know, What We Still Need to Know* (Graham & Perin, 2007), examine the research on writing instruction in grades 4-12, with attention given to those whose writing skills need improvement. *Writing to Read* (Graham & Hebert, 2010), analyzes the re-search on how writing instruction and practice can improve reading skills. Although these studies focus on students younger than most of the adult education population, they provide direction for instruction with adults. This Fact Sheet provides a thumbnail sketch of these three major studies and the implications for adult educators and learners.

Elements of Writing



Writing is multifaceted and includes a number of skills that must work together. Evaluating writing can be subjective when instructors and learners alike are un-sure of what makes “good” writing. Writing “quality” is defined in *Writing Next* as “coherently organized essays containing well developed and pertinent ideas, supporting examples, and appropriate detail” (Graham & Perin, 2007, p. 14). Sentence structure and vocabulary are other key elements that contribute to the quality of a piece of writing. Learners who find writing difficult may experience challenges in any of these areas as well as in spelling,

handwriting, prior knowledge of the topic, and familiarity with models of academic literacies or genres. Because writing is such a complex act, high quality writing depends on this large constellation of skills and abilities. The goal of writing instruction is to help writers become flexible and proficient, able to adapt to various purposes, contexts, and for-mats, and, in so doing, to synergize literacy development in **both** writing and reading.

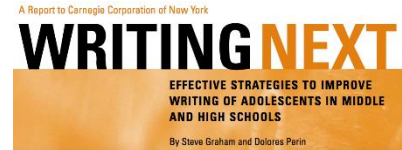
Why Teach Writing to Adult Learners?

Adults encounter writing tasks on a daily basis, especially informational or expository writing such as notes to children’s teachers, grocery lists, work activity logs and forms, e-mails to family and co-workers, online service forms, and so on. The pervasiveness of writing in daily life underscores the need for learners and their instructors to focus on helping adults become flexible, confident writers.

There is plenty of evidence to suggest that many adults of all ages in America are **not** flexible, confident writers. *Writing Next* and *Writing to Read* provide grim statistics showing that poor in-school performance and high drop-out rates from high school lead to a situation in which adults are underprepared for post-secondary education or successful employment. For example, they report that nearly a quarter of community college registrants show the need for develop-mental writing instruction. Similarly, the reports document that the writing demands of most jobs—even at the entry level—is increasing and businesses may have to provide the remedial writing instruction that workers need. Preparing adult students for further education or work advancement requires that adult educators help learners improve their writing skills and increase their confidence in their ability to write.

What's the Research?

Writing Next and *Writing to Read* are meta-analyses, that is, large-scale statistical reviews of studies that compare treatment and control groups. A meta-analysis allows researchers to combine multiple studies of a single instructional intervention and report “effect sizes” as an effectiveness measure. An effect size tells whether statistically significant findings are also educationally meaningful. *Writing Next* analyzed 142 studies and *Writing to Read* analyzed 93 studies. *What We Know* extends the conclusions of *Writing Next* by reviewing articles that did not fit the strict inclusion criteria, including 48 single subject studies of writing, many of which were focused on students who had learning disabilities or were otherwise low achieving. Because there is very little rigorous research on the effectiveness of literacy interventions for adult learners, it is necessary to refer to studies with younger students.



The challenge for the adult education community is to extrapolate from reports on younger students and apply these findings in instructional design for adults. We already know, for example, that many native English speaking adult learners were low-achieving students in K-12 and many have undiagnosed learning disabilities (Corley & Taymans, 2002; National Institute for Literacy, 2009). We also know from adult learning theory that adults show different learning patterns and levels of motivation from adolescents and younger children, and it is necessary to take these differences into account when drawing from work with younger populations to plan for instruction with adults. There are also some studies of writing development in adults and youth in postsecondary settings that fill in some of the gaps and help us develop approaches to helping adults improve their writing abilities.

Recommended Instructional Strategies

All three reports find that writing instruction should emphasize explicit, direct, and systematic instruction with many opportunities for learners to engage in meaningful, extended writing. Learners who wish to improve their writing skills will benefit from learning strategies, and from assistance given by peers, mentors, and technology tools.

Writing Next, *What We Know*, and *Writing to Read* found the following instructional interventions to be effective. Those that are especially helpful for low-achieving writers are noted. This TEAL Center Fact Sheet offers the following suggestions for contextualizing instruction in the adult education setting.

1

Strategy instruction. especially self-regulated strategy development (SRSD), and summarization described below, are the most effective approaches identified in these reports. Writers who are explicitly taught strategies that are reinforced in class over time can internalize these strategies and draw on them for support when writing. Strategies replace negative self-talk with positive self-instructions to help students overcome frustration and past failure. *Strategy instruction has been introduced to adult education through the professional development programs, Bridges to Practice and Learning to Achieve, developed by the National Institute for Literacy to address the needs of students with learning disabilities. It is an instructional approach that requires professional development and practice leading to instruction that is consistent and explicit.*

2

Summarization. Explicit teaching of the elements of a summary of a text leads to improved ability and increased confidence in writing summaries. Having learners write summaries about what they read is a key recommendation from *Writing to Read*. In addition, summarization is an increasingly common expectation as students advance in their education and are assigned more complex texts to read and comprehend. *Connect this instruction and practice with increasingly complex texts to reinforce learners' comprehension as well as writing skills.*

3

Collaborative writing. Making arrangements for students to work together through the entire process of writing—planning, drafting, revising, editing, and publishing—results in higher quality writing products. *Use technology to support and share writing, especially for classes that do not meet daily, or assign writing as an out-of-class activity.*

4

Setting specific product goals. Understanding the nature of goals for a written product, setting the goal in advance during planning, and then monitoring and editing one’s work for adherence to the goal all result in higher quality final products. Setting specific goals (e.g., “to persuade a voter”) are more effective than general goals (e.g., “write a 200-word essay”). *Discuss writing quality with learners and identify areas for improvement. Help learners set explicit goals to guide their writing, and work with them to track progress. For ex-ample, learners may want to write more words during a Quick or Free Write exercise, others may identify that their sentences are all of a similar type and want to focus on adding variety and using combined sentences. Tracking goals works!*

5

Word processing and other technology tools are especially supportive for struggling writers, providing the means to move more easily from idea to composition, supporting spelling, revising, and proof reading. Technology-assisted writing also makes collaborative writing (see above) more feasible and productive.

6

Sentence combining, that is, practicing how to combine two simple sentences into a compound or complex sentence, has a positive impact on overall writing quality and can boost learners’ reading comprehension skills as well. Use this technique in conjunction with other effective writing techniques, such as encouraging peer discussion as part of collaborative writing; this will help reinforce the practice.

7

Prewriting activities, or brainstorming before beginning to draft a composition, has a positive impact on the final written product. Prewriting activities can be done individually or as a collaborative process. This planning strategy may be particularly important to low-achieving writers for compensating and overcoming documented weak prior knowledge and vocabulary (Graham & Perin, 2007). *Engage learners and support vocabulary development and background knowledge through pre-reading strategies can support writing about the topic, too. Generate lists, word webs, and personal glossaries that can help writers demonstrate what they know.*

8

Inquiry, in which learners engage in a focused investigation with “immediate and concrete data” (Graham & Perin, 2007, p. 19) that they gather and analyze, is a springboard to higher quality writing. *Assign authentic activities and materials as inquiry writing, either inquiry in the community (i.e., is there consensus for the public library to expand?) and/or online as a web quest.*

9

Process writing approach includes many related activities, including a greatly increased quantity of writing (only some of which is completed to publication) and a focus on writing throughout the course, along with mini-lessons on embedded skills. It is a professional development model as well, and results seen in students’ writing are correlated to teachers’ training in the approach. It is worth noting that the instructional activities of sentence combining and inquiry are part of the approach. Another key component is the modeling of writing by instructors. *Model writing and responding to feedback and model applying the strategies you teach. Many adult educators have participated in local National Writing Project chapters; see www.nwp.org for a chapter near you that can offer professional development and a community of writers.*

10

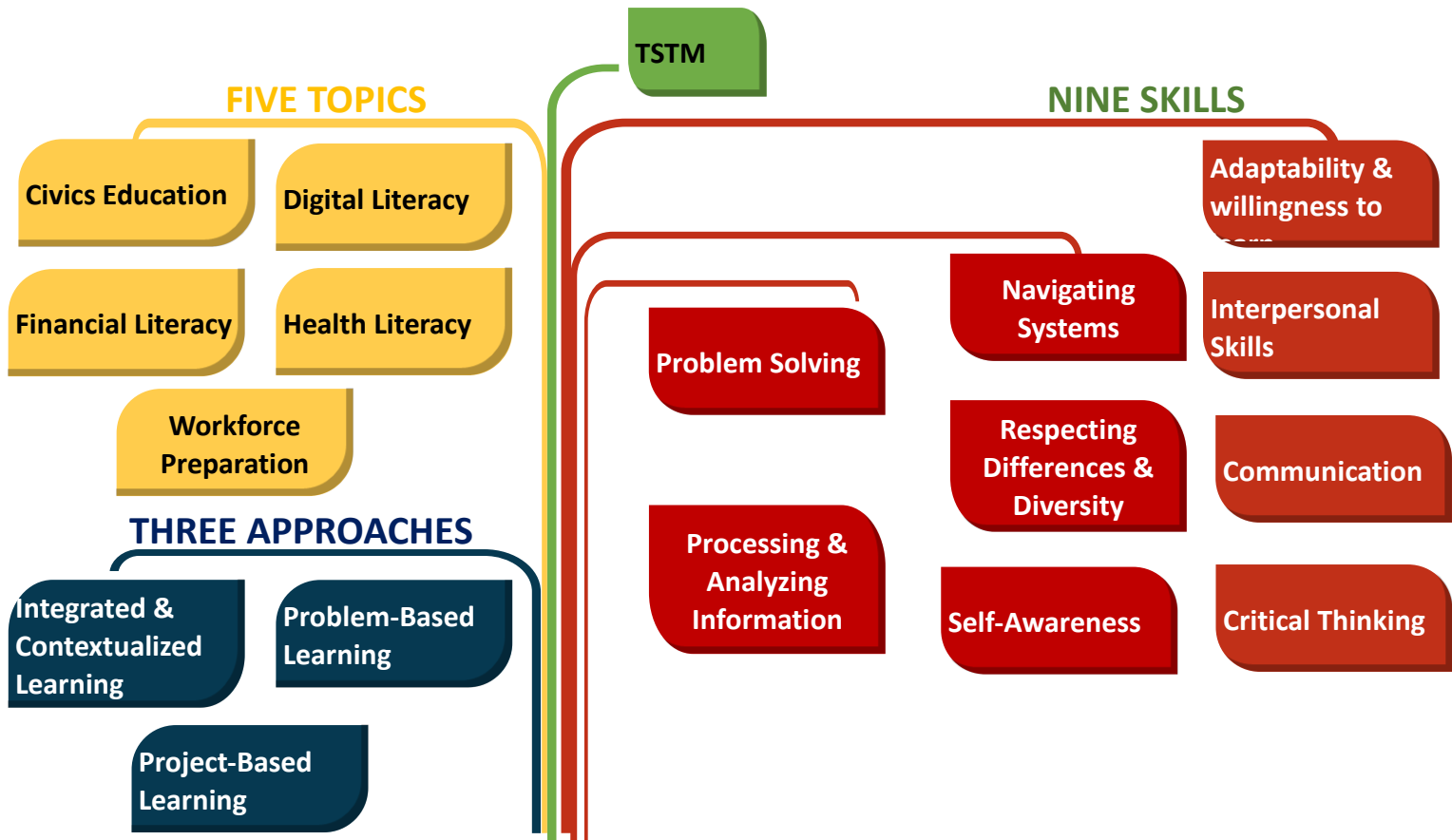
Study of written models with direct, guided practice, was found to be an effective instructional strategy, especially for students with low skills. Many adult education students are not familiar with different types of written genres; the explicit study of formats, styles, tones, vocabularies, sentence structures, etc., can provide new frames and words for their own work.

A cautionary note about **grammar instruction** emerges from the meta-analyses: Studies of grammar instruction alone or as a primary writing instructional approach produced **negative results** on students’ overall writing quality. However, the authors argue that it is important to teach grammar. It seems most helpful to the learner to use grammar approaches that involve active learning (such as sentence-combination) and are integrated with other writing activities.

H. Teaching Skills That Matter

The Teaching the Skills That Matter in Adult Education project (TSTM) trains teachers to integrate the **skills** that matter to adult students using **approaches** that work across critical **topics**. Using the project's tools and training, adult education teachers can teach the transferable skills students need in these critical contexts.

Throughout FY 20/21, Wyoming had a team of instructors and directors participate in this national training initiative. The initiative was then subsequently rolled out to the entire State in August 2021.



The Skills Defined

Adaptability: Adaptability is the quality of being able to “roll with” new situations, such as a change in leadership, a revised work assignment, or an unexpected life event. Adaptability (or flexibility) is highly valued in the workplace and is a factor of emotional intelligence. Willingness to learn is often related to adaptability, especially when a new situation requires new skills. Demonstrating an interest in (and pursuing) continuing education and professional development is key to success in the technology-rich environments of the 21st century.

Communication: Adults with strong communication skills can convey information to others effectively and efficiently, and they can do so

verbally, nonverbally, and in writing. They can repair communication breakdowns when they occur and can adjust their communication style and register (e.g., formal, informal, or colloquial) to match their listeners’ or readers’ needs and expectations. Communication skills also include the effective use of visuals, multimedia, and digital platforms to convey information.

Critical Thinking: Critical thinking involves being open minded and rational. It is informed by evidence and helps users arrive at decisions or conclusions that go beyond factual recall. In adult education classrooms, critical thinking skills involve actively applying thinking strategies that range from analyzing relationships between components to drawing conclusions from a variety

of data. Critical thinking skills are essential for adult learners to thrive in their communities, workplaces, and postsecondary or career training opportunities.

Interpersonal Skills: Sometimes called “people skills,” strong interpersonal skills are the qualities and behaviors a person uses to interact with others appropriately. These skills are essential to successful communication and systems navigation across contexts. Examples of interpersonal skills sought after in the workplace include team management and team building, conflict management, consensus building, and problem-solving. Qualities associated with strong interpersonal skills include demonstrating empathy, a positive attitude, honesty, patience, diplomacy, and leadership

Navigating Systems: Navigating systems is the ability to successfully operate within the institutions and organizational structures that are part of 21st-century communities, workplaces, schools, and families.

Problem Solving: Problem-solving has been identified as one of the top two skills employers look for in job applicants, but it is also part of adult daily life (e.g., work/life balance; parenting choices; managing finances; etc.). The key stages in problem-solving are to 1) identify the problem, 2) propose solutions, 3) analyze solutions (and consequences) in order to select a solution, and 4) apply or implement the solution. In the adult education classroom, these four stages often take the form of 1) reading or listening to a problem scenario and determining the problem; 2) brainstorming solutions; 3) creating a pros and cons T-chart for the solutions to select one; and 4) applying the solution in a writing task (making a claim and supporting it with evidence) or a role-play or oral presentation that envisions the scenario from problem to solution to consequences.

Processing & Analyzing Information: In processing and analyzing information, adult learners first read or listen closely to information related to the target topic or issue, then use thinking tools such as graphic organizer to breakdown and analyze the components of the topic or issue. Learners then work with these components to quantify, compare, contrast, and/or identify relationships between

them. Finally, learners assess and reflect on the results of their analysis.

Respecting Differences & Diversity: Diversity is a hallmark of 21st-century workplaces, training rooms, classrooms, and communities. Adults’ success in these environments requires the ability to interact with others respectfully, accommodating their different lifestyles and needs and accepting their diverse viewpoints and expertise. Learners demonstrate this skill by actively listening to, considering, and responding appropriately to teammates from diverse backgrounds.

Self-Awareness: Self-awareness is the ability to take stock of one’s own emotions, thoughts, and values and recognize their impact on one’s own (and others’) behavior. It is the ability to accurately assess one’s strengths and limitations while maintaining a “growth mindset.” Being self-confident and demonstrating self-efficacy are attributes of self-awareness that allow adult learners to set and achieve personal and professional goals.

The Topics Defined

Civics Education Skills: means “achiev[ing] competency in the English language and acquir[ing] the basic and more advanced skills needed to function effectively as parents, workers, and citizens in the United States.... [S]ervices [helping adults to gain these skills] shall include instruction in literacy and English language acquisition and instruction on the rights and responsibilities of citizenship and civic participation, and may include workforce training”. (WIOA. Pub. L 113-18, July 2014)

Digital Literacy Skills: means “the skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information; and developing digital citizenship and the responsible use of technology” (Museum and Library Services Act of 2010, Pub. L. 111-340, 22 Dec. 2010).

Financial Literacy Skills: means the confidence, knowledge, and skills needed to make financial decisions that promote financial self-sufficiency, stability, and well-being. These skills include the ability to effectively locate, evaluate, and use information, resources, and services and to make

informed decisions about financial obligations, budgeting, credit, debt, and planning for the future.

Health Literacy Skills: means the knowledge, skills, and ability to ask relevant questions to obtain and apply information, evaluate information for credibility and quality, communicate effectively, and make critical decisions to promote one's own health and well-being and that of one's family and community.

Workforce Preparation Skills: means the knowledge, skills, and competencies that, when developed and demonstrated, prepare individuals to obtain or retain employment or to advance in the workforce. These skills include interpersonal and communication abilities such as teamwork, collaboration, and customer service; and workplace competencies including demonstrated professionalism, critical thinking, and systems thinking within their specific work setting.

The Approaches Defined

Integrated & Contextualized Learning: In planning integrated and contextualized learning, the focus is on using relevant content areas as the context for instruction. The contextualized lesson builds content knowledge while simultaneously integrating instruction in, and practice with,

- reading and writing skills,
- math skills,
- language acquisition, and
- soft skills.

Research suggests that contextualizing curriculum and instruction has the potential to accelerate the progress of academically underprepared adult learners.

Problem-Based Learning: In problem-based learning, instead of presenting facts and concepts directly, complex, real-world problems are used as the vehicle to promote student learning as concepts and principles. Problem-based learning is a student-centered approach in which students, working in pairs or teams, use procedures that require them to research and think through an authentic problem scenario in order to propose solutions. During the course of the problem-solving process, learners use analytical reasoning and creative thinking skills to consider both solutions and consequences. Instruction based on this approach culminates with students developing written and/or oral

presentations that describe their approach to the problem.

Project-Based Learning: : In project-based learning (PjBL or PBL), students gain knowledge by addressing essential questions or lines of inquiry, setting and prioritizing goals, and engaging with real world authentic tasks. Project-based units of instruction result in the creation of a product that demonstrates learners' skills and content knowledge (e.g., a report, presentation, video, etc.). Project-based learning units require an array of basic skills and soft skills including communication, collaboration, critical thinking, and creativity and are typically multidisciplinary. The project can be related to building learners' knowledge of community needs, careers, changes in the workplace, or academic subjects (e.g., social studies, science). Project-based learning is a rigorous and engaging approach that prepares learners for postsecondary and career transitions.

The full array of resources available from this training is available at: <https://lincs.ed.gov/state-resources/federal-initiatives/teaching-skills-matter-adult-education/toolkit-overview>.

I. *Minds That Move Us*



The Minds that Move Us initiative is a challenge to communities to design innovative education and training models that create social equity and economic mobility, driven by the market demands of business and industry as well as the needs of youth and adult learners.

The **MTMU Toolkit: A Collection of Place-Based Solutions for Future Adult Career Pathways Models** can be found at:

<https://mindsthatmoveus.org/#:~:text=The%20Minds%20that%20Move%20Us,of%20youth%20and%20adult%20learners.>

The toolkit highlights the innovations of the 10 teams who participated in the **Adult Career Pathways Design Challenge** and discusses three essential principles for their success—**Being Adaptable, Removing Barriers,** and **Maximizing Potential**. The toolkit also details policy opportunities and tangible next steps to create or iterate on current adult career pathways models that close gaps and create greater mobility for low-income adults.

J. *Star Reading*



Star Reading is a professional development project designed to assist stakeholders at the state, program, and classroom levels in gain the knowledge and skills and making the systematic changes necessary to implement and sustain evidence-based reading instruction (EBRI) for intermediate level adult readers. In addition to teaching evidence-based techniques, the STAR training model is also built on

evidence-based techniques for effective professional development and implementation of complex change. The National Implementation Network (NIRN) identified and synthesized the evidence base on implementation. From this evidence base, NIRN identified six stages of implementation. Two of these stages, exploration and adoption and program installation, occur prior to training to prepare states and programs for successful implementation. The purpose of this document is to guide states through these two stages by asking questions to promote reflection and by outlining the tasks to be accomplished in each stage.

For additional information about this project, please refer to the online documentation at: <https://lincs.ed.gov/state-resources/federal-initiatives/student-achievement-reading>

Featured Professional Development: Adult Numeracy Project

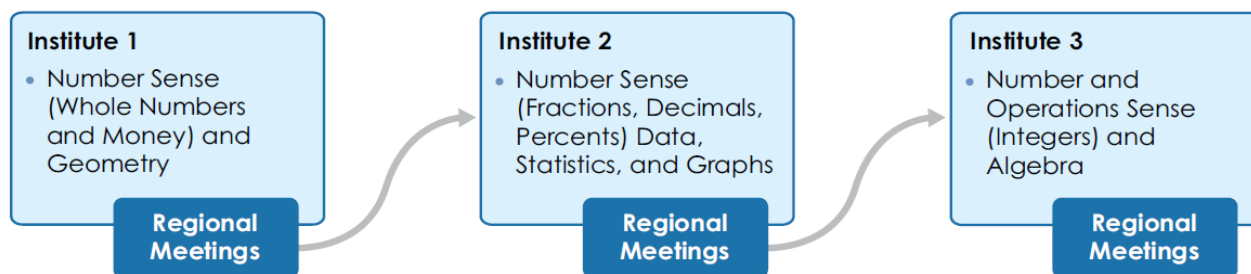
The four LINCS Regional Professional Development Centers offer the Adult Numeracy Instruction – Professional Development training (ANI-PD), an intensive evidence-based program in effective numeracy instruction for adults.

The ANI-PD model is built upon the principle that teacher preparation for adult mathematics instruction must be sufficiently intensive and focused on providing instructors with a strong base of mathematics content and pedagogical knowledge.

The training is grounded in the analysis of adult mathematical instruction outlined in the report, *Building on Foundations for Success: Guidelines for Improving Adult Mathematics Instruction*.¹

ANI-PD Goals:

- Increase math content knowledge among teachers and program administrators.
- Increase instructional skills among teachers working with ABE, pre-GED, and GED students.
- Increase knowledge and use of math content standards.
- Build local program and state capacity to support adult numeracy instruction.



The ANI-PD Model

The model of a series of three, two-day Institutes, spaced with time in between for teachers to practice their new understandings and reflect with colleagues, establishes a focus on four strategic instructional practices:

- **Connections** among mathematical ideas and recognizing and applying mathematics in contexts outside of mathematics.
- **Communication** of mathematical thinking, analyzing and evaluating the thinking and strategies of others, and attending to precision.
- **Mathematical proficiency** that includes conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and a productive disposition.
- **All content strands at all levels**, which involves incorporating increasingly sophisticated concepts of number sense; geometry; data, statistics, and graphs; and algebra at each level of math instruction.

It is imperative that there is involvement by program administrators and support by state leadership. Institute participants should be teaching math so that they can apply and practice their new knowledge. Participants should be recruited in pairs or in small groups from programs. Program administrators must commit to participate in the Institutes and regional meetings to facilitate implementation.

¹ <http://lincs.ed.gov/publications/pdf/AdultNumeracyReportFinal2011.pdf>

ANI Project Background

Mathematics instruction for adults should enable adults to build their mathematics skills so that they can succeed in the workforce, advance in their careers, and participate fully as citizens. Those who teach mathematics in adult education may lack the appropriate credentials and expertise, or may be less than comfortable in offering mathematical instruction. Recognizing the paucity of research available on adult numeracy instruction, the Office of Vocational and Adult Education (OVAE), in collaboration with MPR Associates, Inc. and a team of adult numeracy experts from the Center for Literacy Studies at the University of Tennessee, Rutgers University, and TERC, initiated the *Strengthening America's Competitiveness Through Adult Math Instruction* project.

The project was designed to determine (1) what to teach in adult numeracy instruction, (2) how to teach it, and (3) how to teach teachers to teach it.

Guided by subject matter experts in the fields of mathematics education and mathematical cognition and learning, the team analyzed *Foundations for Success: The National Mathematics Advisory Panel Final Report* (the NMAP report), to determine its applicability to adult education. This analysis, along with a review of research on adult education, adult mathematics instruction, and numeracy education, became the foundation for the *Guidelines* report, which summarized the evidence-based principles for adult numeracy instruction.

The project applied principles in the *Guidelines* and effective professional development to establish the ANI-PD model and field test the model and materials. The demonstrated results in the text box to the right are from two states, Arkansas and Georgia, which participated in the field-testing in 2010-2011.

Establishing the Need for Adult Numeracy Instruction in Adult Education—the Data:

National Assessment of Adult Literacy (NAAL, 2003), Scoring at lowest 2 levels (Below Basic and Basic)

- Prose Literacy: 43%
- Document Literacy: 34%
- **Quantitative Literacy: 55%**

Adult Education Program Study (2002), Scoring at lowest 2 levels (Below Basic and Basic)

- Prose Literacy: 84%
- Document Literacy: 82%
- **Numeracy: 92%**

ANI-PD: Demonstrated Results

- Increase in teachers' math content knowledge in all math strands.
- Increase in teachers' comfort with math content.
- Improvements in teachers' instructional practice.
- Changes in teachers' attitudes about instruction as well as their instructional practice.
- Increase in teachers' knowledge and use of state math content standards.

Contact your LINC'S RPDC Director to inquire about ANI-PD training. The LINC'S Project Directors will work with states to share the costs of the Institutes. As an estimate, LINC'S will cover the cost of bringing the expert trainers to the Institutes and distance coaching during regional meetings. States are requested to coordinate logistics and support material costs.

For more information: http://lincs.ed.gov/lincs/regionalresources/regional_centers.html

The Literacy Information and Communication System fact sheet was jointly developed by the LINC'S Regional Professional Development Centers (CFDA# 84-191B), Kratos (ED-VAE-11-C-0048) and the U.S. Department of Education, Office of Vocational and Adult Education. The opinions expressed herein do not necessarily represent the positions or policies of the U.S. Department of Education, and no official endorsement by the U.S. Department of Education should be inferred. This document is in the public domain and may be reproduced without permission.

<http://lincs.ed.gov>

Appendix #1: Readings on Brain-based Learning

Brain Scientist Shedding Light On Learning, Memory

ScienceDaily (Mar. 28, 2008) — Neurons spoke to Dr. Joe Z. Tsien when he was a sophomore college student searching for some meaningful extracurricular activity.

He had stopped by the lab of a brain researcher at Shanghai's East China Normal University. The room was dark except for a light shining on the brain. "You could hear this pop, pop, pop, pop," says Dr. Tsien, brain scientist who recently came to the Medical College of Georgia from Boston University. "At that moment, I got interested in the brain.

"We study the questions that many people are always curious about – how the brain works, how memory works – then take it down to different levels. What is the molecular basis for the memory process? That means what genes are involved in laying down memory at a very fundamental level?" says the Georgia Research Alliance Eminent Scholar in Cognitive and Systems Neurobiology and co-director of the MCG School of Medicine's new Brain Discovery Institute. "We have been able to identify very critical memory genes and manipulate them in such a way that we can either turn them off, so the memory of mice is impaired, or enhance them."

He's talking about Doogie, a mouse that over-expresses a "smart" gene in the hippocampus, a portion of the brain critical to memory and attacked by Alzheimer's. NMDA receptors are essentially small pores on cell membranes that let ions in and increase neuronal activity and communication. Younger people have higher amounts of a NMDA subunit, NR2B, that keeps communication channels open longer so more information is shared. As people age, they switch to subunit NR2A, presumably because evolution has figured out by then we should have transmitted our genes to offspring, he says. Dr. Tsien and his colleagues made Doogie by over-expressing the NR2B gene and a conditional knockout by eliminating another NMDA receptor subunit.

Doogie was better at remembering and putting things in context, able to quickly recognize something he had seen before and move on to explore something new. He made the cover of Time magazine in 1999 and was one of Science magazine's top-10 scientific breakthroughs that year. The "dumb" mouse, on the other hand, couldn't find his way out of a maze.

Dr. Tsien also has found that intelligence requires teamwork, that neurons work in cliques not only to remember specifics but also to generalize knowledge, which essentially defines intelligence.

To get a good handle on the extent of simultaneous neuronal activity, he and his former postdoctoral fellow, Dr. Longnian Lin, first developed a technique to record the activity of up to 200 mouse neurons, rather than the 20 to 30 previously possible. They then identified a small number of neurons in the hippocampus of a mouse that consistently respond to the concept of a bed or nest. Make that nest inaccessible by covering it with glass, for example, and the cells and mouse become disinterested, they showed in research published March 2007 in Proceedings of the National Academy of Sciences.

"Intelligence is really built on memory, your experiences from the past, translating that into guidelines so when you see a new situation, you know what you need to do," says Dr. Tsien, whose collective contributions to learning and memory were featured on the July 2007 cover of Scientific American. "That helps us not only recognize our bed, for example, but to generally understand what a bed is and to know one when we see it. You check into a hotel, you know where to sleep. When you come to my office, you know where to sit. You don't sit in the floor or on my table. You sit on the chair. The chair may not be exactly like one you have seen before, but you know it's a chair. That is a basic form of intelligence."

Memory Issue 'Hits 10% of Pupils'

The researchers say teaching strategies can be adjusted. Research suggests that one in 10 children might have a "working memory" impairment that causes them to do less well than expected at school.

A Durham University team identified the problem in 10% of more than 3,000 schoolchildren, across all ages. They say teachers rarely identify it, tending to label pupils as being unmotivated daydreamers.

Working memory involves such things as remembering verbal instructions, new names or telephone numbers. The researchers say that if the finding of 10% of children having the problem held true for all children, then almost 500,000 in primary education alone would be affected.

COMMON CLASSROOM CHARACTERISTICS

- Low abilities in literacy and numeracy
- Frequent failure to complete learning activities
 - Frequent failure to remember instructions
- Normal social integration with other children, but
- Very reserved in groups, rarely volunteer information

The researchers believe that early assessment - which they say can be done reliably from the age of four - would enable schools to adopt new teaching methods. As things stand, they say misdiagnosis commonly results in children being labeled as inattentive or lacking in motivation.

Their diagnostic tools have been piloted in 35 schools across the UK and translated into 10 foreign languages.

Lead researcher Dr Tracy Alloway, from Durham's school of education, said: "Working memory is a bit like a mental jotting pad, and how good this is in someone will either ease their path to learning or seriously prevent them from learning.

"From the various large-scale studies we have done, we believe the only way children with poor working memory can go on to achieving academic success is by teaching them how to learn despite their smaller capacity to store information mentally."

A teacher's hunch that something is wrong can be followed up by getting the child to do a computerised assessment.

The team's recommendations for coping with the problem include repetition of instructions, talking in simple, short sentences and breaking down tasks into smaller chunks.

Story from BBC NEWS:

http://news.bbc.co.uk/1/hi/uk_news/education/7267352.stm

Published: 2008/02/28 00:07:19 GMT

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STUDENTS AT THE CENTER

MIND, BRAIN, AND EDUCATION

ARCH 2012

By Christina Hinton, Kurt W. Fischer, and Catherine Glennon

EXECUTIVE SUMMARY

THE EDITORS, *STUDENTS AT THE CENTER* SERIES

Recent technological breakthroughs make research in human biology and cognitive science more relevant for education than ever before. With powerful brain imaging tools, neuroscientists can for the first time study the learning brain in action.

New technologies in genetics are revealing the complex interactions between a learner's genetic makeup and the external environment, while cognitive scientists are tracking the development of alternative learning pathways. Such advancements have led to the emergence of the field of mind, brain, and education. Christina Hinton, Kurt W. Fischer, and Catherine Glennon consider student-centered approaches to

learning in light of important findings from this trans-disciplinary field. The authors suggest that such approaches support learning in the brain, giving them the potential to support academic achievement and close achievement gaps, particularly for underserved youth. Ultimately, student-centered programming could lead to a more effective and equitable education system for all students.

The authors point to a number of significant implications of findings about the brain for student-centered approaches to learning (*see table*

FINDINGS ABOUT THE BRAIN	IMPLICATION FOR STUDENT-CENTERED APPROACHES TO LEARNING
The brain is continually changing, as learning experiences shape its architecture; students' abilities are always developing.	Student-centered approaches to learning use a variety of ongoing assessments to monitor learning and tailor instruction to promote learning.
The brain is learning virtually all the time, in both formal and informal contexts.	Student-centered approaches can capitalize on this through a range of nontraditional learning experiences, such as afterschool enrichment, internships, and community programs.
The brain changes that underlie learning occur when experiences are active, not passive.	Student-centered approaches empower students to engage in active learning experiences that are relevant to their lives and goals.
Learning and emotion work together in the brain.	Student-centered approaches address emotion's central role in education by nurturing positive relationships, teaching emotional regulation skills, and providing shelter from harmful stresses.
Each student has a complex profile of strengths and limitations and learns best through experiences tailored to his or her needs and interests.	Student-centered approaches customize instruction in each subject to each individual.
Underserved students, including low-income youth and English language learners, sometimes thrive with different instructional techniques than their middle-class peers.	Student-centered approaches have the flexibility to focus on their particular needs.

D I V E R S E , O N G O I N G A S S E S S M E N T S

Arguably the most important insight for education from the field of neuroscience is that the brain is highly adaptive, a property called plasticity. As a result of experiences in different environments, students' brains change continuously, from preschool through high school and beyond. Students learn not only at school but also at home, at work, in community centers, and in other settings.

As students engage in various activities—from mastering reading to playing online chess to practicing word processing—these experiences gradually sculpt the physical architecture of their brains. The brain is made up of networks of interconnecting nerve cells, called neurons, and supportive glial cells, which nourish the neurons. Learning experiences are translated into electrical and chemical signals, which cascade among many neurons in many areas of the brain. Gradually, the signals modify connections among neurons in certain areas of the brain and those areas are reorganized. Over time, the connections are affected in a “use it or lose it” way: the ones used the most are strengthened, while the less active are weakened or eliminated.

A significant body of research now contradicts the longstanding notion that individual abilities are fixed at birth. Indeed, the brain's plasticity means that individual abilities develop continuously. The more a student learns in a particular area, the more intelligent the brain becomes in that area.

The brain's adaptability also helps students overcome many learning challenges, as alternative pathways develop to compensate for biological limitations. For example, students with dyslexia, a reading difficulty typically involving impaired phonological processing, often can develop alternative neural circuitry to support reading if they receive appropriate instruction.

The continually changing nature of the brain underscores the potentially negative effects of certain traditional educational practices, such as tracking. Sorting students into rigid tracks based on their current levels of ability could deny lower-tracked students the rich learning experiences their brains need to reach their full potential. By contrast, a central aspect of student-centered approaches to learning—flexible and meaningful learning experiences provided with ongoing guidance—can enable students at all levels to build toward mastery of a common set of core skills.

A powerful tool for guiding each student toward mastery is formative assessment, which plays an integral role in student-centered approaches to learning. It involves frequent, ongoing assessments using a variety of methods, ranging from examining work samples, to monitoring classroom discussions for signs of understanding, to checking in with individual students about the lesson. This constant stream of feedback helps educators tailor instruction, sometimes within moments, to meet each student's immediate needs. It also helps students gain a sense of their strengths and weaknesses, which can inform their continued efforts to learn.

A VARIETY OF NONTRADITIONAL LEARNING EXPERIENCES

Research on brain plasticity indicates that the brain is learning virtually all the time, in both formal and informal contexts. Traditional schooling, where a teacher stands in front of a classroom and delivers content through lecturing, is only one of many potential learning experiences. Student-centered approaches to learning value a variety of student-driven activities, both within the classroom and in other school spaces. Nor is learning restricted to the confines of the school building or the typical school day. The idea of “anywhere, anytime” learning is central: education can occur far beyond a school's walls, at any hour, on any day.

Student-centered approaches encourage a wide range of nontraditional learning experiences, such as afterschool enrichment, internships, and community programs. Learning can occur in settings ranging from local businesses to community centers to cyberspace. Educators can include teachers, professionals, parents, and community members. With a student-centered approach to learning, these are not just “extracurricular” activities. Schools would formally recognize them—and award credit for them—provided that students are working toward core skills and can demonstrate their proficiency in them.

LEARNING THROUGH ACTIVE, RELEVANT EXPERIENCES

Neuroscience research shows that the brain's active engagement is a prerequisite for learning. Changes in the brain's neuronal connections that underlie learning occur only when experiences are active; passive activities do not affect the brain the same way. In educational terms, this suggests that sitting in a classroom listening to a lecture will not necessarily lead to learning.

Student-centered approaches empower students to engage in active learning experiences that are relevant to their lives and goals, both inside and outside the classroom. Brain research is consistent with the student-centered principle of giving credit for mastery of core skills in formal and informal contexts, rather than awarding credit just for spending time in a classroom.

POSITIVE RELATIONSHIPS AND EXPERIENCES

Learning and emotion are integrated in the brain. In fact, strong skills in emotional regulation strongly predict academic achievement. Emotion acts as a rudder to guide learning. The emotions students feel during an experience become salient labels that steer future learning and decision making. People gravitate toward situations they have tagged positive and away from situations they have tagged negative or worth avoiding.

Neuroscience research shows that emotion and learning are integrated in the brain. This research settles longstanding ideological debates about whether educators should be

responsible for emotional development because if educators are involved in intellectual development, they are inherently involved in emotional development. Students are still developing emotional skills and learning to regulate their emotions in childhood and adolescence. Education can support the development of emotional regulation skills. Indeed, this should be a priority, given their critical role in academic performance.

Students are more likely to thrive academically when educators provide a positive learning environment, nurture teacher-student relationships, encourage a sense of community, teach emotional regulation strategies, and provide shelter from toxic stress. Student-centered learning approaches recognize the importance of emotion, calling for a supportive community of educators that can help reduce student stress and apply a knowledge of individual differences in motivation to engage each student.

Emotion is also physically integrated in the brain with executive functioning, a set of mental processes that are critical to learning. Executive function skills connect past experience with present action and include planning, selecting learning strategies, and assessing outcomes. The brain's prefrontal cortex, which regulates executive functioning and some emotional processing, is maturing during adolescence and into early adulthood. It is important for educators to support this development.

Student-centered approaches to learning require students to be self-directed and responsible for their own learning, including goal setting, planning, and monitoring progress. Student-centered approaches teach students the necessary executive function skills to do these tasks, initially offering significant support, then gradually removing it as students become more self directed.

CUSTOMIZED INSTRUCTION TO ADDRESS DIFFERENCES

Mind, brain, and education research on individual differences contradicts the simplistic notion that each student is either intelligent or not. It points to a more nuanced perspective that recognizes that each student has a complex profile of strengths and limitations. A student may struggle in one area, such as mathematics, yet thrive in another, such as linguistic ability or interpersonal intelligence. Even within single domains, students can have both strengths and weaknesses.

The wide range of individual differences result from an interaction of each student's genetic tendencies and experiences. Experiences can reinforce or counteract genetic inclinations. This explains, for example, why someone born with a genetic predisposition for shyness can grow into a gregarious person.

Mind, brain, and education research on individual differences, language learning, literacy, and mathematics suggests that students can follow different learning pathways to master the same core skills. Each individual learns most effectively through experiences tailored to his or her needs and interests. Traditional instruction and standard curriculum most often do not accommodate individual differences. Uniform approaches lose

a host of students because they fail to take into account their different ways of learning—or the different languages, cultures, values, goals, and interests they bring to school. Adjusting instruction to meet each student's particular needs often can move students from failure to proficiency.

Without such instructional flexibility, difficulties in a certain domain may unnecessarily interfere with learning in another. For example, students with limited English proficiency in a traditional math class would struggle to access knowledge from a typical textbook or demonstrate their understanding on a written test. However, if given alternatives, such as a computer program that can translate English instructions into their native language, they would be far less likely to fall behind in math while their language skills were developing.

A FOCUS ON THE NEEDS OF UNDERSERVED STUDENTS

While all students can benefit from student-centered approaches to learning, it is important to note how underserved students in particular may thrive with different instructional techniques than their middle-class peers. For example, neuroscience research on literacy shows that English language learners use a somewhat different brain network for reading than native English readers, because of differences between the rules of English and other languages. This suggests that ELL students may require alternative means of reading instruction. Many of the practices associated with student-centered learning provide a flexible framework for education that can accommodate these types of individual differences through differentiated instruction.

Neuroscience research also indicates that there are sensitive periods early in life for learning certain aspects of language, including grammar and accent. Students who receive non-native language instruction in preschool or primary school have a biological advantage for mastering those aspects of the language. Since proficiency in the language of instruction strongly predicts academic achievement among immigrants, teaching ELL students English as early as possible, with complementary instruction in their native tongue, gives them a critical advantage for learning the language and, ultimately, academics.

Recent research highlights a key difference between disadvantaged students who succeed in school and those who do not: their emotional skills. Resilient disadvantaged students tend to have more self-confidence and higher motivation than non-resilient peers. Therefore, using an educational approach that nurtures emotional development is especially important for underserved students. As noted, student-centered approaches pay particular attention to emotional development and motivation.

Sheltering students from major stresses is important to these efforts. Research suggests that students from disadvantaged backgrounds are more likely to experience toxic stressors—poverty, abuse, bullying, trauma—but receive little support in

dealing with them. Toxic stress can disrupt brain circuitry and cause learning problems. It also can change an individual's stress system such that situations that might not threaten most students can trigger a stress response, which can interrupt learning and manifest in problematic aggressive attitudes that damage students' relationships with teachers and peers.

Fortunately, supportive school environments can buffer students' brains from the impacts of unhealthy levels of stress. Recent research on students of low- and middle- socioeconomic status reveals that low-SES students typically come to school with higher levels of the stress hormone cortisol. However, when students from disadvantaged backgrounds are in high-quality schools, their cortisol levels decrease during the day. The better the school, the greater the drop. This suggests that a quality learning environment can lead to better emotional regulation and more favorable learning outcomes. This research underscores the need for child-friendly learning spaces that promote students' intellectual, emotional, and physical well-being both during and outside of regular school hours.

Students at the Center synthesizes existing research on key components of student-centered approaches to learning. The papers that launch this project renew attention to the importance of engaging each student in acquiring the skills, knowledge, and expertise needed for success in college and a career. *Students at the Center* is supported generously by funds from the Nellie Mae Education Foundation.

To download *Mind, Brain, and Education* and all papers in the *Students at the Center* series, go to the project website: www.studentsatthecenter.org



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**Plastic Brain Outsmarts Experts: Training Can Increase Fluid Intelligence,
Once Thought To Be Fixed At Birth**

Fluid intelligence, an aspect of a person's IQ, allows people to solve unfamiliar problems by understanding relationships between various concepts independent of previous knowledge or skills. Research shows that training short-term, or working memory, can improve fluid intelligence, which was once thought to be extremely difficult.

ScienceDaily (Jun. 6, 2008) — Can human beings rev up their intelligence quotients, or are they stuck with IQs set by their genes at birth? Until recently, nature seemed to be the clear winner over nurture.

But new research, led by Swiss postdoctoral fellows Susanne M. Jaeggi and Martin Buschkuhl, working at the University of Michigan in Ann Arbor, suggests that at least one aspect of a person's IQ can be improved by training a certain type of memory.

Most IQ tests attempt to measure two types of intelligence--crystallized and fluid intelligence. Crystallized intelligence draws on existing skills, knowledge and experiences to solve problems by accessing information from long-term memory.

Fluid intelligence, on the other hand, draws on the ability to understand relationships between various concepts, independent of any previous knowledge or skills, to solve new problems. The research shows that this part of intelligence can be improved through memory training.

“When it comes to improving intelligence, many researchers have thought it was not possible,” says Jaeggi. “Our findings clearly show this is not the case. Our brain is more plastic than we might think.”

Jaeggi, Buschkuhl and Walter Perrig from Bern University, Switzerland, along with Jon Jonides, their National Science Foundation-supported colleague from the University of Michigan, reasoned that just as crystallized intelligence relies on long-term memory, fluid intelligence relies on short-term memory, or “working memory,” as it is more accurately called. This is the same type of memory people use to remember a phone number or an e-mail address for a short time, but beyond that, working memory refers to the ability to both manipulate and use information briefly stored in the mind in the face of distraction.

Researchers gathered four groups of volunteers and trained their working memories using a complex training task called “dual n-back training,” which presented both auditory and visual cues that participants had to temporarily store and recall.

Participants received the training during a half hour session held once a day for either eight, 12, 17 or 19 days. For each of these training periods, researchers tested participants' gains in fluid intelligence. They compared the results against those of control groups to be sure the volunteers actually improved their fluid intelligence, not merely their test-taking skills.

The results were surprising. While the control groups made gains, presumably because they had practice with the fluid intelligence tests, the trained groups improved considerably more than the control groups. Further, the longer the participants trained, the larger were their intelligence gains.

“Our findings clearly show that training on certain memory tasks transfer to fluid intelligence,” says Jaeggi. “We also find that individuals with lower fluid intelligence scores at pre-test could profit from the training.”

The results are significant because improved fluid intelligence scores could translate into improved general intelligence as measured by IQ tests. General intelligence is a key to determining life outcomes such as academic success, job performance and occupational advancement.

Researchers also surmise that this same type of memory training may help children with developmental problems and older adults who face memory decline. But, that remains to be seen, because the test results are based on assessments of young, healthy adult participants.

“Even though it currently appears very hard to improve these conditions, there might be some memory training related to

intelligence that actually helps,” says Jaeggi. “The saying ‘use it or lose it’ is probably appropriate here.”

Since it is not known whether the improvements in fluid intelligence last after the training stops, researchers currently are measuring long-term fluid intelligence gains with both laboratory testing and long-term field work. Researchers say it will be some time before a complete data set is available to draw any conclusions.

University of Bern professor Walter J. Perrig also co-authors this study along with University of Michigan professor John Jonides. The Swiss National Science Foundation funds Jaeggi and Buschkuhl’s visiting scholar status.

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Students with Learning Disabilities Construct Meaning Through Graphic Organizers: Strategies for Achievement in Inclusive Classrooms

Eileen D. Sabbatino

Students with learning disabilities are being placed with their peers in inclusive classrooms for content area subjects in greater numbers than ever before. In many cases, these students are being held to the same standards as their general education peers. Many students with learning disabilities have deficits in a very essential skill area needed for success, reading comprehension. This article familiarizes teachers with the concept of graphic organizers as an effective comprehension strategy, presents a research-based rationale for their use with students with learning disabilities, and introduces graphic organizers as a tool for helping students with learning disabilities make sense of a wide variety of textual information.

The number of students with learning disabilities receiving special education services has increased dramatically over the past decades. The National Center for Educational Statistics (NCES) (2001) reported that children with disabilities receiving services in 2000 constituted 13% of all students enrolled in a public school (grades K-12), which is up from 8% in 1977. Between 1977 and 2000, the percentage of children with specific learning disabilities as a percentage of total public school enrollment rose from 2% to 6%.

As a result of federal and state policies, students with learning disabilities have increasingly been placed in their least restrictive environments. In many cases that least restrictive environment is a general education classroom. No Child Left Behind Act of 2001 (NCLB) has increased the emphasis on the general education curriculum, and as a result, students with learning disabilities who are included in general education classes are expected to achieve at the same rigorous pace as their peers. This situation offers new challenges to general education teachers as well as special education teachers.

Inclusive Education as the Least Restrictive Option

Once a student is identified as having a learning disability, the Individual Education Program (IEP) team faces the responsibility of choosing a placement for instruction of the student in the least restrictive environment to receive his or her educational services. Increasingly, that placement is with his or her peers in inclusive classrooms for content area subjects. Whether the placement option is a general education class, a general education class with consultation, or a general education class with the support of a special education teacher, the major focus for students with learning disabilities is to understand the content being taught. Unfortunately, making sense of information from readings, lectures, and homework as typically assigned in the general

education class can be a daunting task for students with learning disabilities (Heward, 2003).

The Needs of Students with Learning Disabilities

A variety of deficits may be present in children with learning disabilities including: impulsiveness, low tolerance for frustration, difficulties with reading, writing and spelling, and all aspects of organization skills. Any of these deficits may impact upon an individual student's ability to succeed in inclusive classrooms. As a result, students with learning disabilities often feel overwhelmed, disorganized, and frustrated. In order for these students to be successful in today's schools, they need to learn to use strategies, which enable them to make sense of the textual materials used to teach the general education curriculum. A strategy that has been used successfully is that of graphic organizers (Lovitt & Horton, 1994; NICHCY, 1996; Sturromski, 1997).

Defining Graphic Organizers

Graphic organizers are visual representations of concepts that aid students in learning, remembering and organizing important information they are reading or have read. Graphic organizers make visually explicit the organizational patterns of text. They can represent students' background knowledge and provide a framework for what is about to be taught, or can be used to organize and reflect on newly acquired information. (Bromley, Irvin-DeVitis, & Modlo, 1995; Quist, 1995). Graphic organizers are visual aids that can help depict the relationships among concepts in a text and also reflect the organization of the text, therefore helping to improve students' comprehension by requiring them to use prior knowledge to think about and picture the relationships among concepts and organization of a text (Brown, 1988).

What Does the Research Say?

A review of the research reveals positive results for the use of graphic organizers with students with learning disabilities. Researchers found that graphic organizers can accommodate students with learning disabilities' need for structure, organization, and a clear format, as well as their need to relate information to personal experience. Graphic organizers were also found to encourage higher order thinking. Researchers suggest that explicitly detailed instruction, intensive practice of key concepts, and a schema to help students with learning disabilities organize key information can facilitate short-term memory (Darch & Eaves, 1986; Quist, 1995).

A study conducted by Horton and Lovitt (1989) revealed that the use of graphic organizers allowed students with learning disabilities to participate meaningfully in mainstreamed content area classes. Summaries written at the end of a unit of study demonstrated students' heightened awareness of the hierarchy of concepts represented in their graphic organizers. Follow-up summaries revealed evidence that the skills were being maintained over time (Scanlon, Duran, Reyes, and Gallego, 1992).

Some middle school students with learning disabilities lack the skills necessary to read and identify key concepts in textbooks. The same students may also lack the writing and organizational skills necessary for success in content area classes. In addition, they may have difficulty paying attention during lessons. Middle school students with learning disabilities experienced success utilizing graphic organizers (Marchand-Martella, Miller, & MacQueen, 1998).

DiCecco and Gleason (2002) conducted a study of students in grades 6-8 to investigate the effects of explicit instruction and graphic organizers on students' ability to gain and apply relational knowledge from social studies material. Their results support the use of graphic organizers to aid students in their recall of relational knowledge.

Although all of the studies reported concerning graphic organizers were conducted with students with learning disabilities, each study varied with regard to the type of graphic organizers used, age level of the participants, the length of instructional time, type and length of reading material, and the educational setting. However, the research indicates that there were some gains in the level of reading comprehension by the participants throughout the studies following the introduction of and/or instruction through the use of graphic organizers (DiCecco & Gleason, 2002; Horton & Lovitt, 1989; Marchand-Martella, et al., 1998; Quist, 1995; Robinson, 1998; Scanlon, et. al, 1992).

Applying Graphic Organizers to Lessons

IDEA requires that students with disabilities be educated in the least restrictive environment, which meets the students' special educational needs. The least restrictive envi-

ronment for most students with learning disabilities ranges from placement in a general education classroom, where students receive a prescribed program under the direction of a general education teacher, to placement in an inclusive classroom, where students receive instruction by both a general education teacher and a special education teacher (Heward, 2003).

Instruction of students with learning disabilities receiving instruction in general education classrooms can be enhanced through the use of graphic organizers. The general education teacher supports the comprehension by all students, especially students with learning disabilities, by modeling the use of graphic organizers for the class during lessons. The organizers are used to introduce or reinforce key concepts as well as the relationships between the concepts (DiCecco & Gleason, 2002; Hill, 1994).

The next placement along the continuum of services is a regular classroom with consultative services from a special education teacher. In this situation, the special education teacher supports lessons taught by the general education teacher by developing graphic organizers that present visual displays of the content. The general education teacher introduces the graphic organizer to the entire class and then refers back to it to as new concepts are introduced. This is to ensure that students with learning disabilities make connections between the important concepts in the material (Heward, 2003; Hill, 1994; Quist, 1995).

A regular education classroom with supplementary instruction and services is the placement option chosen for some students with learning disabilities. In this team-teaching model the general education teacher takes the role of the content area teacher while the special educator adapts the instruction to meet the needs of the special education students. In order to aid in comprehension, the special education teacher presents a graphic organizer that concretely displays the concepts being taught. This allows for monitoring of students and to check for understanding (Heward, 2003; Horton & Lovitt, 1989).

It is important to note that the purpose of graphic organizers is to organize, rather than to simply list concepts. They should be constructed so students viewing them will readily see the relationships between concepts. Graphic organizers should be utilized as a structured part of a lesson along with modeling, guided practice, and follow-up reviews in order to achieve positive results (DiCecco & Gleason, 2002; Robinson, 1998).

Graphic organizers provide students with strategies or structure in order to become information seekers and active learners. Teachers should find creative ways to integrate graphic organizers into their lessons and use them consistently across subject areas. It is imperative that the organizers remain visible throughout the time the students are working on an assigned task. By referring back to the orga-

nizer, the teacher helps the students become aware of what information is considered necessary for comprehension of the assigned task (Baxendell, 2003; Hill, 1994; Pappas, 1996).

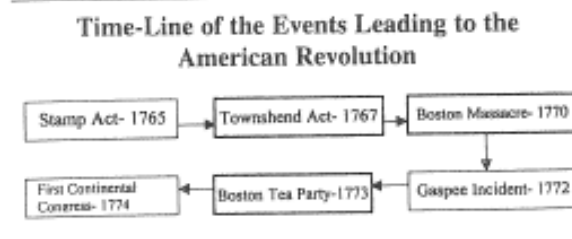
There are many standard forms of graphic organizers from which to choose, or teachers can design their own, depending on the material being introduced to their students. Graphic organizer development should begin at the content analysis stage of lesson planning. After an organizer has been developed, it should then be modified to meet the needs of the diverse learners in the classroom. Teachers should keep in mind that it is necessary to provide links between previous learning and the current content. The lessons then lend themselves to systematic instruction with numerous opportunities to check for student comprehension (Horton & Lovitt, 1989; Marchand-Martella, et al., 1998).

Graphic organizers can be classified into four basic formats: sequential, conceptual, hierarchical, and cyclical (Baxendell, 2003; Beissner, Jonassen, & Grabowski, 1994; Ekhaml, 1998). The common attribute underlying all types of graphic organizers is the visual-spatial arrangement of information containing words or phrases that are connected in meaningful ways (Horton & Lovitt, 1989).

Sequential. This format organizes events in chronological order. They are usually linear in fashion. Examples include time lines and T-charts, which can show cause and effect or problem and solution. Figure 1 is an example of a sequential organizer, a time line, which displays the events leading up to the American Revolution. While reading a chapter in their text about American History, students can place the events in the order of occurrence. Another organizer, a T-chart, is a way to organize information to depict cause and effect as seen in Figure 2. The teacher and students list the causes of the American Revolution to the left of the T and identify the effects of those actions to the right.

Figure 1

Teacher and students complete a sequential map of the events leading up to the American Revolution.



Conceptual. This format involves a central theme, category, or idea with supporting facts such as characteristics or attributes. Examples include semantic maps and comparison and contrast organizers. In Figure 3 the teacher and students

develop a semantic map about mammals in their science class. The central theme, mammals, is written in the center. Concepts that are related to the main idea are identified and connected around the main topic in a web-like fashion with unlabeled lines. Figure 4 demonstrates the use of a comparison/contrast organizer, a Venn diagram, which can be used during a science lesson to compare and contrast characteristics of mammals and reptiles. As students read about and discuss animals, they list the unique characteristics under the appropriate titles. Characteristics in common would be listed under the heading, both.

Figure 2

Teacher and students identify the causes and effects of the American Revolution on a sequential map.

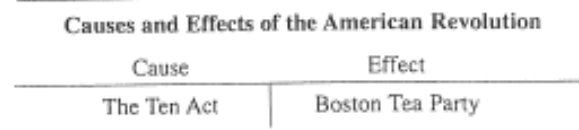


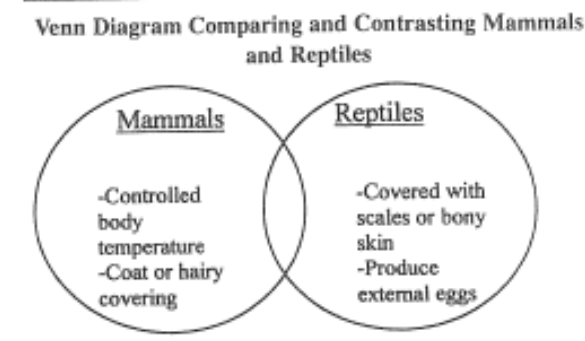
Figure 3

Teacher and students complete a conceptual map concerning mammals.



Figure 4

Teacher and students compare and contrast the characteristics of mammals and reptiles on a conceptual map.



Hierarchical. This form uses a linear, matrix, or web-like representation. The forms may vary in appearance, but all include an identified main concept along with important subtopics, and then further subtopics for each presented next. Structured overviews and spider maps are examples of hierarchical organizers. In Figure 5 students complete a hierarchical map about glaciers while learning about global warming. The central theme of the organizer is in a box at the top of the organizer, linked by lines to boxes containing subtopics, which are in turn linked to boxes of subordinate information about each subtopic. Figure 6 presents a spider map for a study of Africa. In this instance, the central theme of the map is placed in a box in the center of the map. The subtopics are written on lines that extend out from the center. Information about each of the subtopics is written on lines that extend from each of them.

Cyclical. This format includes a series of events within a process in a circular motion. This type of organizer has no beginning and no end, just a continuous stream of events. Figure 7 is an example of a cyclical organizer for students to complete as they read and learn about the ways in which Americans can conserve resources.

Figure 5

Teacher and students complete a hierarchical map while studying about the effect of global warming on glaciers.

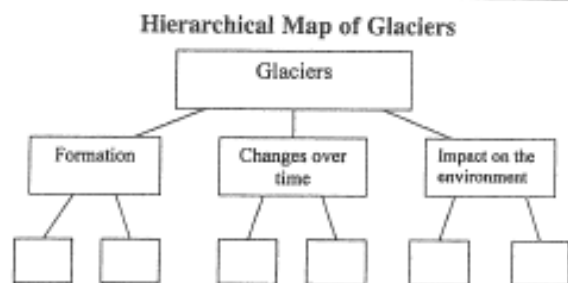


Figure 6

Teacher and students complete a hierarchical map while studying about Africa.

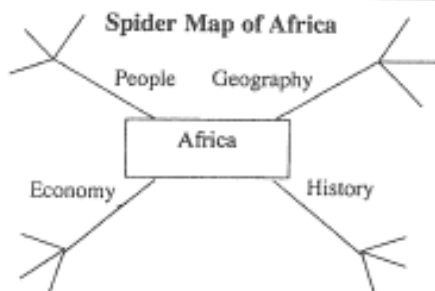


Figure 7

Teacher and students study recycling using a cyclical organizer. Pictures could be drawn for added effect.

A Cyclical Organizer Depicting Recycling



Summary

Today's educators face increasing demands on their time and expertise. Classrooms are becoming more diverse than ever before. In response to federal legislation, students with learning disabilities are being placed in regular education classes for content area instruction as their least restrictive environment. As a result, teachers and students alike need to learn to use strategies that will help all of their students achieve. Graphic organizers have been shown to aid in that effort by improving reading comprehension for students with learning disabilities. Researchers have demonstrated that students with learning disabilities can enhance their reading comprehension through the use of graphic organizers by reflecting the organization of material and depicting relationships among concepts. A wide variety of standard formats, along with teacher creativity, allow graphic organizers to be used across the curriculum to allow teachers to complete this most important task, ensuring that every student receives the best education possible (Smith, 1989).

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We're Wired to Connect

Our brains are designed to be social, says bestselling science writer Daniel Goleman—and they catch emotions the same way we catch colds

Have you ever wondered why a stranger's smile can transform your entire day? Why your eyes mist up when you see someone crying, and the sight of a yawn can leave you exhausted? Daniel Goleman, Ph.D., has wondered, too, and just as he helped revolutionize our definition of what it means to be smart with his 1995 blockbuster, *Emotional Intelligence*, the two-time Pulitzer nominee and former science reporter for *The New York Times* has dropped a bombshell on our understanding of human connection in his startling new book, *Social Intelligence* (Bantam).

For the first time in history, thanks to recent breakthroughs in neuroscience, experts are able to observe brain activity while we're in the act of feeling—and their findings have been astonishing. Once believed to be lumps of lonely gray matter cogitating between our ears, our brains turn out to be more like interlooped, Wi-Fi octopi with invisible tentacles slithering in all directions, at every moment, constantly picking up messages we're not aware of and prompting reac-

tions—including illnesses—in ways never before understood.

"The brain itself is social—that's the most exciting finding," Goleman explains during lunch at a restaurant near his home in Massachusetts. "One person's inner state affects and drives the other person. We're forming brain-to-brain bridges—a two-way traffic system—all the time. We actually catch each other's emotions like a cold."

The more important the relationship, the more potent such "contagion"

will be. A stranger's putdown may roll off your back, while the same zinger from your boss is devastating. "If we're in toxic relationships with people who are constantly putting us down, this has actual physical consequences," Goleman says. Stress produces a harmful chemical called cortisol, which interferes with certain immune cell functions. Positive interactions prompt the body to secrete oxytocin (the same chemical released during lovemaking), boosting the immune system and decreasing stress hormones. As a dotting grandparent himself (with author-therapist wife Tara Bennett-Goleman), the author often feels this felicitous rush. "I was just with my two-year-old granddaughter," he says. "This girl is like a vitamin for me. Being with her actually feels like a kind of elixir. The most important people in

C. J. BARTON

our lives can be our biological allies.”

The notion of relationships as pharmaceutical is a new concept. “My mother is 96,” Goleman goes on. “She was a professor of sociology whose husband—my father—died many years ago, leaving her with a big house. After retiring at 65, she decided to let graduate students live there for free. She’s since had a long succession of housemates. When she was 90, a couple from Taiwan had a baby while they were living there. The child regarded her as Grandma and lived there till the age of two. During that time, I swore I could see my mother getting younger. It was stunning.” But not, he adds, completely surprising. “This was the living arrangement we were designed for, remember? For most of human history there were extended families where the elderly lived in the same household as the babies. Many older people have the time and nurturing energy that kids crave—and vice versa. If I were designing assisted-living facilities, I’d put daycare centers in them and allow residents to volunteer. Institutions are cheating children,” he says. “And we older people need it, too.”

Young or old, people can affect our personalities. Though each of us has a distinctive temperament and a “set

for frowning and other reactions). This is why, when you’re smiling, the whole world does indeed seem to smile with you. It also explains the Michelangelo phenomenon, in which long-term partners come to resemble each other through facial-muscle mimicry and “empathic resonance.” If you’ve ever seen a group with a case of the giggles, you’ve witnessed mirror neurons at play. Such mirroring takes place in the realm of ideas, too, which is why sweeping cultural ideals and prejudices can spread through populations with viral speed.

This phenomenon gets to the heart of why social intelligence matters most: its impact on suffering and creating a less crazy world. It is critical, Goleman believes, that we stop treating people as objects or as functionaries who are there to give us something. This can range from barking at telephone operators to the sort of old-shoe treatment that long-term partners often use in relating to each other (talking at, rather than to, each other). We need, he says, a richer human connection.

Unfortunately, what he calls the “inexorable technocrep” of contemporary culture threatens such meaningful connection. Presciently re-



being experienced—which is basically what each of us wants more than anything. Scientists agree that such connection—or lack of it—will determine our survival as a species: “Empathy,” writes Goleman, “is the prime inhibitor of human cruelty.”

And our social brains are wired for kindness, despite the gore you may see on the nightly news. “It’s an aberration to be cruel,” says Goleman. Primitive tribes learned that strength lay in numbers, and that their chances of surviving a brutal environment increased exponentially through helping their neighbors (as opposed to, say, chopping their heads off). Even young children are wired for compassion. One study in Goleman’s book found that infants cry when they see or hear another baby crying, but rarely when they hear recordings of their own distress. In another study, monkeys starved themselves after realizing that when they took food, a shock was delivered to their cage mate.

Perhaps the most inspiring piece of the social-intelligence puzzle is neuroplasticity: the discovery that our brains never stop evolving. “Stem cells manufacture 10,000 brain cells every day till you die,” says Goleman. “Social interaction helps neurogenesis. The brain rises to the occasion the more you challenge it.” ■

Mark Matousek’s *The Art of Survival* (Bloomsbury) will be published next year.

Positive interactions can boost the immune system: “The most important people in our lives can be our biological allies.”

point of happiness” modulating our general mood, science has now confirmed that these tendencies are not locked in. Anger-prone people, for example, can “infect” themselves with calmness by spending time with mellow individuals, absorbing less-aggressive behavior and thereby sharpening social intelligence.

A key to understanding this process is something called mirror neurons: “neurons whose only job is to recognize a smile and make you smile in return,” says Goleman (the same goes

marking on the TV set in 1963, poet T.S. Eliot noted that this technoshredder of the social fabric “permits millions of people to listen to the same joke at the same time, and yet remain lonesome.” We can only imagine what the dour writer would have made of Internet dating. And as Goleman points out, this “constant digital connectivity” can deaden us to the people around us. Social intelligence, he says, means putting down your BlackBerry, actually paying full attention—showing people that they’re

Summer program aims to help neurodiverse kids find their strengths

By Justin Trombly

Jul 11 2021



Elementary school students head back to class after lunch and recess at the Coventry Village School on Thursday, September 5, 2019. Photo by Glenn Russell/VTDigger

Eighth- and ninth-graders with learning disabilities in the Northeast Kingdom can apply for a new summer program designed to set them on a path toward college. The free support project for neurodiverse students — those with learning, intellectual or developmental disabilities — is slated to launch later this month. The Northeast Kingdom Neuroabilities Convergence Project will be [run by the Hardwick-based nonprofit Vermont Learning-Support Initiative](#).

Brad Smith, the group's executive director, said the summer school program is “an opportunity to begin to think a little bit outside of the box in terms of how we might work to help a group of students who have been marginalized in traditional education.”

The inaugural program has two planned one-week sessions: One July 26 through July 30 at the Grass Roots Art and Community Effort Center in Hardwick between July 26, and another Aug. 2 through Aug. 6 at the Lyndon Outing Club in Lyndonville.

The project aims to help neurodiverse students develop the skills they need to pursue a post-secondary education.

“We’re trying to give them strategies, tools and basically a general sense that they can do it if they want to — that it’s okay to be different,” Smith said.

The goal is to help students see their strengths, cope with challenges and find camaraderie.

Organizers focused on eighth- and ninth-graders because the transition into high school can spur uncertainty, particularly for neurodiverse students who are most anxious and most at risk, Smith said.

Kathryn Whitaker, who works with students with autism and neurodevelopmental disabilities in the North Country Supervisory Union, said she organized a similar experience for a small group of students going into seventh grade. “We taught them about their neurodiversity, we helped them explore their own neurodiversity and we helped them with ways that they could advocate for themselves,” Whitaker said. Kids with neurodiversities need to know how to tell others what they need to best study and learn, she said. Helping those students while they’re in middle or high school “gives them a few years of practice saying, ‘I need more time. I need technology to write, need a quiet space, need frequent breaks,’” she said.

According to [2019 data](#) from the New England Secondary School Consortium, 40% of students with disabilities in New England completed college, compared to 67% of students without disabilities. Outcomes data for students with disabilities wasn’t broken down at the state-level. Smith’s nonprofit is hosting the program in the Kingdom because he says the region is “a traditionally under-resourced and underserved” area of Vermont.

“The feeling we have is, if it’ll work in the Kingdom, it’ll work anywhere,” he said. “The obstacles are numerous, such as the socioeconomic disadvantage, the transportation issues, the lack of educational achievement.”

With small, rural schools in spread apart communities, it can be hard for neurodiverse students to find a sense of community with others experiencing similar challenges, Whitaker said. “You can’t do that if you’re the only kid; you can’t be part of a community by yourself,” she said. “So bringing kids together with the permission to talk about (their experience), gives that opportunity to them to stop faking it, to allow their authentic selves to not only exist but to be appreciated.”

Newport consultant Sunny Naughton, who is leading the two sessions with Old Stone House Museum assistant director Drew Bush, said she’d never seen a program like this in the Kingdom outside traditional schools.

The project is partly sponsored by the Lyndon Outing Club and Greensboro’s Rural ARTS Collaborative, with other funding from the Vermont COVID-19 Response Fund of the Vermont Community Foundation, the Vermont Department of Labor and local businesses and donors.

Applications so far have been “light,” Smith said, and he is encouraging more students to apply. There are 12 slots for each one week session. The program this summer, he said, will be a pilot for future sessions.



Building Learning Communities

Participatory Learning *Methodologies* Guidebook



2'21 The TLP Group • PO Box 21510 • Columbus, OH 43221 • 614.850.8677 • www.powerpath.com
Adapted from The Art of Hosting Conversations that Matter • www.artofhosting.org

Welcome

Welcome to the PowerPath's Participatory Learning....

a training and practice session for PowerPath Users/Sites who aspire to help students by engaging in new practices and techniques that inspire collaboration and excitement by *facilitating* and hosting learning

Welcome those who want to help....

Adults and youth become lifelong learners
Persons who know and act instead of who are known and acted upon

PowerPath is ever evolving....

Building on research and best practices (in education, employment, and beyond)
Co-creating tools and improved processes *with* the practitioners

The Participatory Learning methodologies in this session are now....

being offered as new ways of working and learning in Europe, the Middle East, Africa, the Far East, North America, and South America.

Using Participatory Learning is a key ingredient in building Learning Communities....

Implementing the Participatory Learning methodologies trains the social capital skills needed to succeed in both education and the workplace.

We are a growing community of practitioners....

Supporting each other to further our ability as practitioners/facilitators/hosts in co-creating learning and problem-solving along with stewarding improved ways to support intellectual development.

Using the research on persistence in adult learning programs....

Students need to be actively engaged in learning.
Students learn better from one another than they do from a teacher.
Students need to practice leadership and collaborative work.
Students need to learn the metacognitive skills to manage successful learning,
Successful parenting and successful employment.

Students who are part of a learning community are more likely to achieve their goals and become successful learners and workers!

We can make a difference in the lives of the students we serve.

You make the choice.....

Shift your role – become a host of learning!

4 Core Methodologies for Instructors to Create Learning Communities

- Circle
- Appreciative Inquiry
- World Café
- Open Space

www.peerspirit.com

<http://appreciativeinquiry.case.edu/>

www.theworldcafe.com

www.openspaceworld.org

For additional information on the methodologies and how they are being used, please go to: www.artofhosting.org

Definition and Basic Assumptions

*The world we have made as a result of the level of thinking
we have done thus far
creates problems we cannot solve
with the same level of thinking which created them.*

– Albert Einstein

Participatory Learning (PL) Methodologies offer Instructors a New Way to *HOST* Learning and *CREATE* Learning Communities!

‘Hosting Learning’ Using PL Methodologies *GO with the FLOW* of Natural Learning
Using PL Methodologies Create Learning Communities
Using PL Methodologies Build Social Capital Skills

PL IS an emerging group of methodologies for hosting learning by facilitating conversations between participants leading to opportunities for deeper and broader learning, building social capital skills that increase social, and emotional learning. PL is supported by principles that help maximize collective intelligence, integrate and utilize diversity, practice collaboration, build leadership, and train managing conflict and working with diverse thinking.

PL results in collective clarity and wise action – building sustainable learning strategies along with workable solutions for the most complex problems.

These methodologies create opportunities for participants to learn content-based knowledge and information while concurrently building the metacognitive skills needed to become productive members in our communities. These metacognitive skills can immediately transfer to the social and emotional skills needed for success in post-secondary education and work.

PL methodologies ensure that students buy into the process *because* students co-create the the process. By discussing the ‘how to’ participate for each methodology, students learn both the process and the practice. This makes the purpose and the process transparent.

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A Few Assumptions

New Solutions are Needed

The Participatory Learning is built on the assumption and experience that we need to find new solutions for education and learning. *The time is now.*

Conversation Matters

It is common sense to bring people together in conversation. It is the way we have done it in generations past, gathering round fires and sitting in circles. It is the way we build new relationships that invite real collaboration and partnerships.

Meaningful Conversations RESULT in Greater and Deeper Learning... *Wise Action*

Human beings that are involved and invited to work together take ownership and responsibility when the ideas and solutions have been created in safety with peers.

Instead of looking on discussion as a stumbling block in the way of action, we think it an indispensable preliminary to any wise action at all.

Pericles

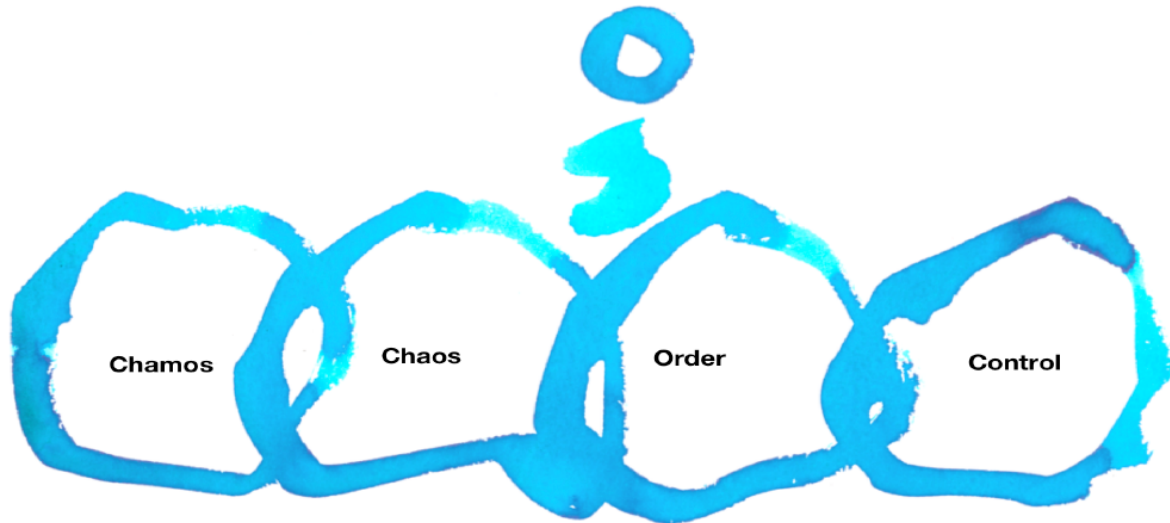
Innovation - Moving Through Chaos into a NEW Order.....

There is a path to take between Chaos and Order that leads us to the new, collective learning, and allows each of us to be part of 'real time' innovation. Instead of relying on controlling every detail in our classes, instructors begin to see the need to access the collective intelligence and collective wisdom of all students.

We are beginning to understand and treat formal learning more like a living system than a static group of students. After all, the chaordic path is the story of how in our natural world form arises out of nonlinear, complex, diverse systems. New levels of order become possible out of chaos....new learning naturally takes place.

This "chaordic confidence" - the capacity we need to stay in the dance of balancing order and chaos - supports a generative emergence that allows the new, collective intelligence and wise action to occur. In this space of emergence, we leave our traditional ways of 'teaching' and give way to a higher, less controlling, more exciting way to help individuals acquire learning. This requires us to stay in a transformative shift even though we may want to veer back to the old way of being, back to the *sage on the stage* rather than the *guide by the side*.

People are intelligent, creative, adaptive, self-organizing, and meaning-seeking. Organizations are living systems too. They are intelligent, creative, adaptive, self-organizing, meaning-seeking.
Meg Wheatley



As we move between chaos and order, individually and collectively, we move through confusion and conflict toward clarity. We are all called to walk this path without judgment – some will feel more comfortable with chaos, others with order. Both are needed as part of *how we learn*. We can then take new learnings to see the world differently. New learning generates more new learning. Continually growing something new and exciting. Learning by your self is good. *Learning together is exciting!*

On the far side of chaos is *chamos* – despair. On the far side of order is control. When we move toward either of these extremes, the result is apathy or rebellion. The very opposite of chaordic confidence, where the new learning cannot be born. Individuals who have struggled with traditionally-taught academics are often in apathy because nothing they could do in the traditional education setting worked for them. Despair was their initial feelings. Despair turned to self-anger and disappointment. Then came the rebellion, acting out or turning-off all educational efforts. The same sequence of events can occur in the workplace.

So, the question becomes –

*How much order do we need?
How much chaos would be helpful here?*

We call it the *Chaordic experience or journey*....a path less travelled. The path to excitement and the pathway to co-creating innovation!

Scientists have discovered that the small, brave act of cooperating with another person, of choosing trust over cynicism, generosity over selfishness, makes the brain light up with quiet joy.

Natalie Angier, Pulitzer Prize-winning New York Times reporter, describing a recent study of the effects of behavior on brain chemistry

Living Systems – Being Human A Natural Approach to Organizing Life & Learning

- A living system - humans - only accepts its own solutions (we only support those things we are a part of creating)
- A living system - humans - only pay attention to that which is meaningful to it (here and now)
- In nature a living system - humans - participate in the development of its neighbor (an isolated system is doomed)
- Nature and all of nature, including ourselves is in constant change
- Nature seeks diversity - new relations open up to new possibilities
- A living system - humans - cannot be steered or controlled - they can only be teased, nudged, titillated
- A system - humans - change (identity) when our perception of ourselves changes
- All the answers do not exist 'out there' - we must (sometimes) experiment to find out what works
- Who we are together is always different and more than who we are alone (possibility of emergence)
- We - human - are capable of self-organizing - given the right conditions
- Self-organization shifts to a higher order

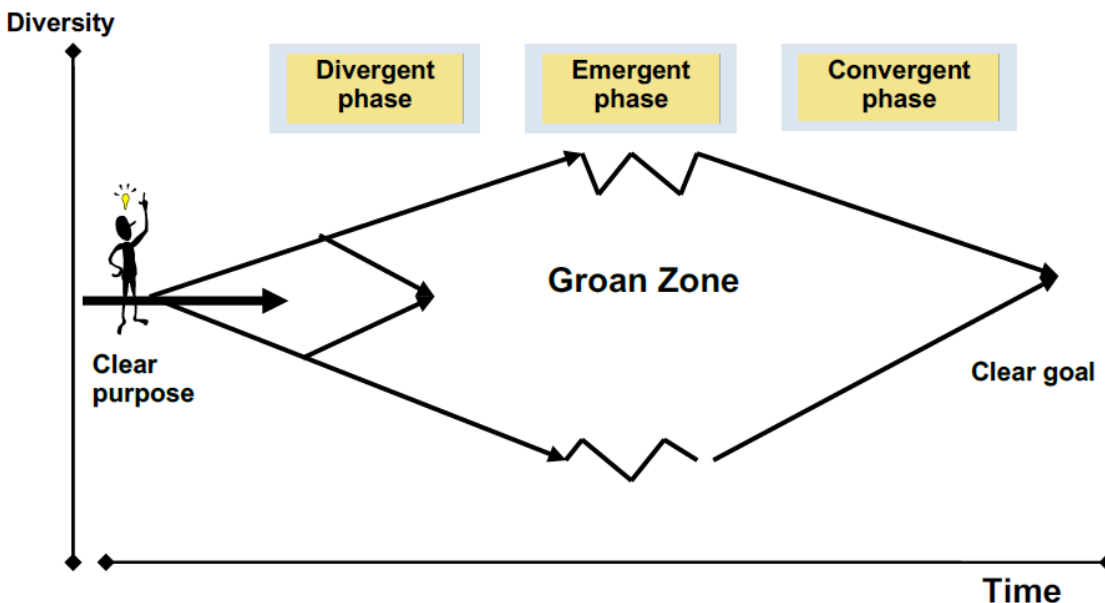


**How much order
do we need? How
much chaos would
be helpful here?**

Divergence and Convergence

In entering into an inquiry or multi stakeholder conversation we operate with three different phases in the process – divergent, emergent and convergent. Each of these phases are different and it is important for a host to know where we are in the process and what is needed in each phase.

Divergent and convergent ways of thinking and working are complimentary and different. The 'breath' of divergence and convergence – of breathing in and breathing out – is at the heart of our process design. Every process goes through several such breathing cycles.



In the divergent phase, or “Pre-ject”, there is as yet no clear goal. This is a “goal-seeking” phase where a clear, shared purpose gives the collective direction. Another driver in this phase is asking the right questions.

If you close the divergent phase too soon, the level of newness or innovation will be less.

Ideally a group will stay in inquiry in the divergent phase until a new shared and agreed solution or goal is seen by everyone.

Divergent thinking typically generates alternatives, has free-for-all open discussion, gathers diverse points of view and unpacks the problem.

The divergent phase is non-linear and needs “chaos time”. It is process-oriented and needs prolonged decision time.

Convergent thinking means evaluating alternatives, summarising key points, sorting ideas into categories and arriving at general conclusions.



The convergent phase is goal-oriented and focused, linear, structured and usually subject to time constraints. It is focused on getting results and may require quick decisions.

The emergent phase, between the divergent and convergent, is fondly known as the 'groan zone' – It is the phase where different ideas and needs are integrated. It may require us to stretch our own understanding to hold and include other points of view.

We call it the groan zone because it may feel messy – an uncomfortable stretch – but it is also the phase where the new solution emerges.

The Four-Fold Practice – THIS IS ABOUT YOU!

There are four basic practices that are key to the Participatory Learning:

1. **Being Present** (Pre-sensing)
2. **Engaging in conversations** (Participating)
3. **Hosting conversations** (Contributing)
4. **Becoming a community of practice** (Co-Creating)

Being truly present, engaging skilfully in conversations, being a good host of conversations and engaging with others in co-creation, are all practices or skills that are easily understood but it takes a continuous practice to hone these skills.

1. Being Present (Pre-sensing)

...host yourself first - be willing to endure chaos - keep the "space" or possibilities open - stay in the fire of the present...

Being present means showing up, undistracted, prepared, clear about the need and what your personal contribution can be. It allows you to check in with yourself and develop the personal practice of curiosity about the outcomes of any gathering. Presence means making space to devote a dedicated time to working with others. If you are distracted, called out or otherwise located in many different places, you cannot be present in one. For meetings to have deep results, every person in the room should be fully present.

Being present also means being aware of ones environment, other people and what impacts you and how you impact others.

Collectively, it is good practice to become present together as a meeting begins, be it through a welcome, a good framing, through "checking-in" to the subject matter or task at hand by hearing everyone's voice in the matter or as simple as taking a moment of silence.

Invite a collective slowing down so that all participants in a meeting can be present together.

2. Participate and practice conversations

...be willing to listen fully, respectfully, without judgment and thinking you already know all the answer - practice conversation mindfully...

Conversation is an art, it is not just talk. It demands that we listen carefully to one another and that we offer what we can in the service of the whole. Curiosity and judgement cannot live together in the same space. If we are judging what we are hearing, we cannot be curious about the outcome, and if we have called a meeting because we are uncertain of the way forward, being open is a key skill and capacity. Only by practicing skilful conversation can we find our best practice together.

If we practice conversation mindfully we might slow down meetings so that wisdom and clarity can work quickly. When we talk mindlessly, we neither hear each other nor do we allow space for the clarity to arise. The art of conversation is the art of slowing down to speed up.

3. Hosting conversations

...be courageous, inviting and willing to initiate conversations that matter - find and host powerful questions with the stakeholders - and then make sure you harvest the insights, the patterns, learnings and wise actions...

Hosting conversations is both more and less than facilitating. It is an act of leadership and means taking responsibility for creating and holding the "container" in which a group of people can do their best work together.

You can create this container using the seven helpers as starting points, and although you can also do this in the moment, the better prepared you are the better. – The best preparation is being fully present.

The bare minimum to do is to discern the need, get clear on the purpose of the meeting, prepare a good, powerful question to initiate the conversation and know how you will harvest and what will be done with that harvest, to ensure that results are sustainable and the effort was worth it.

Hosting conversations takes courage and it takes a bit of certainty and faith in your people. We sometimes give short shrift to conversational spaces because of the fear we experience in stepping up to host. It is, however, a gift to host a group and it is a gift to be hosted well.

4. Co-creating with others – becoming a community of practice

...be willing to co create and co-host with others, blending your knowing, experience and practices with theirs, working partnership..

The fourth practice is about showing up in a conversation without being a spectator, and contributing to the collective effort to sustain results. The best conversations arise when we listen for what is in the middle, what is arising out of the centre of our collaboration. It is not about the balancing of individual agendas, it is about finding out what is new. And when that is discovered work unfolds beautifully when everyone is clear about what they can contribute to the work.

In a truly co-creative process it becomes irrelevant who said or contributed what – the gift is in the synergy and inspiration when we each build on each others knowledge and the whole becomes much bigger than the sum of the parts.

This is how results become sustainable over time – they fall into the network of relationships that arise from a good conversation, from friends working together.

The collaborative field can produce unexpected and surprising results.

From a Learner to a Community that Learns

As we learn to be truly present and engage in conversations that really matter – we become learners. As learners many doors are open to us.

As we begin to host conversation and connect with students with other students or hosts with other practitioners – we become a community of learners or practitioners. As a community we own a much bigger capacity than as individual learners or hosts.

As a community of individual practitioners or learners – truly becomes “a community that learns”, that is where we really enter the collective intelligence. – We multiply our capacity and enter the field of emergence.

*“You can have a group of individually intelligent people – but until that group knows what it knows together – the group as a group is not intelligent”
(inspired by Peter Senge)*



Social Capital Skills

Developing social capital skills were referred to as a critical outcome of education in John Dewey's 1899 book, The School and Society. There are lots of definitions of social capital skills including *the expected collective or economic benefits derived from the preferred treatment and cooperation between individuals and groups*. Although different social sciences emphasize different aspects of social capital, they tend to share the core idea "that social networks have value."

In education, social capital skills *are* the key to success. Stephen Black, a professor and researcher in Sydney, Australia in his presentation on Social Capital Skills in Education, states, "It's the relationships people have, the groups they belong to, the networks they link into, the contacts they've got. It's about the trust they have in others. It's also how they interact with these other people - how they present themselves. This may be related to their confidence and to their skills."

Why discuss social capital skills in reference to Participatory Learning?

Dewey was on target in believing that an outcome of education should be the development of social capital skills. Sadly, education has mostly forgotten the importance of learning how to work with others and the social skills needed to be a successful and responsible student, citizen, and worker.

When brain and social science research identified that students learn best from their peers, it became more important to help participants learn and practice these critical skills in a way that did not take away from, but added to, their learning outcomes.

In the graph below, each of the Participatory Learning methodologies have been viewed from the social skills are imbedded in their process:

Participatory Learning Methodologies

Circle

Café

Open Space

Appreciative Inquiry

Social Capital Skills Practiced


Speaking & Setting Intention, Speaking in a Group, Active Listening, Taking Turns, Getting/Giving Support

Collaboration, Working in a team, Listening to and discussing diverse ideas & opinions, Building a collective model, Managing time, Taking a leadership role, Self advocacy, Putting abstract ideas into a visual model, Active listening, Peer learning and coaching

Leadership, Asking questions, Offering something of interest to others, Active listening, Asking for help and offering help, Diagramming / summarizing a conversation.

Looking for the positive, Managing negative situations from a strengths-based, positive view, Viewing life, people, & daily situations from a positive vantage point

Methodologies and Practices An Overview

<p>Circle</p>	<p>Adaptable to a variety of groups, issues, and timeframes.</p> <p>Circle can be used as a means for “checking in” and “checking out”. Classes or meetings can begin and end in circle. In this way, personal intentions can be stated upfront and reflections shared at closing.</p> <p>Circle can be the process used for the duration of a gathering, particularly if the group is relatively small and time for deep discussions and/or reflection is a primary aim.</p> <p>Circle offers practice in the following Social Capital skills including: speaking in front of a group, speaking with intention, taking turns, knowing when to pass, listening with attention, talking from the heart, holding judgement, offering support to peers.</p>
<p>Appreciative Inquiry</p> 	<p>Appreciative Inquiry (AI) is useful when a different perspective is needed, or when we wish to begin a new process from a fresh, positive vantage point.</p> <p>AI can help move a group that is stuck in “what is” toward “what could be”.</p> <p>AI looks to the glass as always half full, seeks the positive, and looks at what is working or what is right. Always starts from the positive.</p> <p>An example would be always looking at what is completed, what is correct in all education or workplace situations.</p> <p>AI can be used with individuals, partners, small groups, or in large classes.</p> <p>Social Capital skills built include looking for the positive, managing differently negative situations, looking at life, people, daily situations from a positive vantage point, approach challenges or problems from a strengths-based, positive view.</p>

World Café



Process used to foster interaction, dialogue, and collaborative learning/knowledge sharing with both large and small groups.

Particularly effective in surfacing the collective wisdom of groups of diverse people.

Very flexible and adapts to many different purposes - great for information sharing, relationship building, deep reflection exploration and action planning.

Cafes can be used in subject areas (math, writing, reading, career pathways, etc.) or for planning and highly engaging learning conversations about current events, values, life events, etc.

Social Capital skills practiced in café include collaboration, working in a team, listening and discussing diverse ideas or opinions, building a collective diagram or model, managing time, taking a leadership role, self advocacy, putting abstract ideas into a visual representations and symbols, active listening, peer learning and coaching, etc.

Open Space



Useful in many contexts, including sharing information about a subject or an interest, reviewing content or specific curriculum prior assessment, or for planning,

Social Capital skills practiced in Open Space include leadership, asking questions, offering something of interest to others, active listening, asking for help and offering help, diagramming and/or summarizing a conversation.

What are the Methodologies to Create a Learning Community?

1. The Circle

The Circle, or council, is an ancient form of meeting that has gathered humans in respectful conversations for thousands of years. In some areas of the world this tradition remains intact, but in some societies it has been nearly forgotten.

Circling is a modern methodology that calls on this tradition and helps people gather in conversations that fulfill their potential and desire for learning via conversations or dialogues that replenish, engage, excite, and create wisdom-based change....which is real and sustaining learning.

Social Capital Skills (Social and Emotional Learning) Practiced with Circle

Circle offers practice in the following Social Capital skills including:

- Speaking in front of a group
- Speaking with and setting intention
- Taking turns
- Knowing when to stop talking and pass
- Listening with attention
- Talking from the heart
- Holding judgment
- Offering support to peers

“In circle we create a safe place where we can share what is in our hearts. We have a motto, ‘Whatever is said in circle stays in the circle. Circle time is our beginning and our ending. In circle we are a family’”
TANF Literacy Student
OIC, OK City

Principles of Circle

- Rotate leadership
- Take responsibility
- Have a higher purpose that you gather around

Practices of Circle

- *Speak with Intention:* Noting what has relevance to the conversation in the moment
- *Listen with Attention:* Respectful of the learning process of all members of the group
- *Tend to the Well-being of the Group:* Remaining aware of the impact of our contributions

Four Agreements of Circle

- Listen without judgment (slow down and listen)
- Whatever is said in circle stays in circle
- Offer what you can and ask for what you need
- Silence is also part of the conversation

○ **General Flow of the Circle**

- ⇒ Welcome - offer an overview of the class, topic or project for the day or for the week
- ⇒ Review the Three Principles and the Three Practices
- ⇒ Offer a 'talking piece'
- ⇒ Set stage with 2 questions to help students in the circle be present and reflect or set an intention
- ⇒ Be the guardian of the Process - manage time, keep the integrity of the circle
- ⇒ Come back prior to the end of class (or week) with a Check-out, then a Farewell

For more information about Circle - visit: www.peerspirit.com

After the host welcomes individuals to the circle and offers the overview of the session, he/she gives the group a Check-in question or questions. The host will place a 'talking piece' in the center of the circle.

To aid in self-governance and bring the circle back to intention when it goes astray, have a circle member volunteer to be the guardian of the process is helpful. This group member watches and safeguards the group's energy, manages time, keeps the talking piece moving, and observes the group process.

The circle starts with a volunteer who walks to the center of the circle and takes the talking piece and responds to the question(s). They pass the talking piece to the left or clockwise - winding things up for the day.

If an individual is not ready to speak, the individual can 'pass' on their turn. The talking piece is moved to the next person. When the talking pieces comes back to the initial volunteer, those who 'passed are again offered the talking piece. Everyone in the circle answers the host's question(s).

The same circle process is offered as a check-out at the end of the session or week. Closing the class by checking-out provides a formal end to the session, a chance for students to reflect on what has transpired.

The host offers a review of the session along with the next steps (or curriculum topic), then he/she asks a question that is a review or reflection on the session/day/week.

The talking piece is placed in the center, a volunteer takes it and is the first to respond. The talking piece is passed to the right or counter-clockwise. When all have spoken, the hosts asks everyone to stand, make a bow as a show of respect and thanks to all of the members of the circle who have collaborated together during the session, day or work.

What is Circle Good For?

One of the beautiful things about circle is its adaptability to a variety of groups, issues, and timeframes. Circle can be used as a methodology of “checking in” and “checking out” or a *way of making decisions together*. Be creative with circle and be ready for the deep wisdom it can unearth!

Materials Needed

- Chairs arranged into a circle – students should be able to view each other without impediments (i.e. tables or desks)
- Talking piece
- Chime, bell, or other gentle noisemaker
- Center setting

Reflecting on Circle

What are my insights about the Circle?

What further questions do I have about the Circle?

How could I creatively use the Circle in my education/educator practices?

Basic Guidelines for Calling a Circle

This handout is a gift from PeerSpirit, Inc. an educational company devoted to life and leadership through Circle, Quest and Story. Founded in 1994, PeerSpirit has taught circle process in the US, Canada, Europe and Africa. It is a consortium consisting of Christina Baldwin, Ann Linnea and teaching colleagues with areas of expertise in health care administration, religious/church administration and congregational health, education, nonprofit boards, environmental and community revisioning. See: <http://www.peerspirit.com>

The circle, or council, is an ancient form of meeting that has gathered human beings into respectful conversation for thousands of years. The circle has served as the foundation for many cultures.

What transforms a meeting into a circle is the willingness of people to shift from informal socializing or opinionated discussion into a receptive attitude of thoughtful speaking and deep listening and to embody and practice the structures outlined here.

THE COMPONENTS OF THE CIRCLE

- Intention
- Welcome Start-point
- Center and Check-in/Greeting
- Agreements
- Three Principles and Three Practices
- Guardian of process
- Check-out and Farewell

INTENTION

Intention shapes the circle and determines who will come, how long the circle will meet, and what kinds of outcomes are to be expected. The caller of the circle spends time articulating intention and invitation.

WELCOME OR START-POINT

Once people have gathered, it is helpful for the host, or a volunteer participant, to begin the circle with a gesture that shifts people's attention from social space to council space. This gesture of welcome may be a moment of silence, reading a poem, or listening to a song--whatever invites centering.

www.peerspirit.com/ Extracted from *The Circle Way, A Leader in Every Chair* by Christina Baldwin and Ann Linnea, Berrett-Koehler, ©2010. May copy for non-commercial use.

ESTABLISHING THE CENTER

The center of a circle is like the hub of a wheel: all energies pass through it, and it holds the rim together. To help people remember how the hub helps the group, the center of a circle usually holds objects that represent the intention of the circle. Any symbol that fits this purpose or adds beauty will serve: flowers, a bowl or basket, a candle.

CHECK-IN/GREETING

Check-in helps people into a frame of mind for council and reminds everyone of their commitment to the expressed intention. It insures that people are truly present. Verbal sharing, especially a brief story, weaves the interpersonal net.

Check-in usually starts with a volunteer and proceeds around the circle. If an individual is not ready to speak, the turn is passed and another opportunity is offered after others have spoken. Sometimes people place individual objects in the center as a way of signifying their presence and relationship to the intention.

SETTING CIRCLE AGREEMENTS:

The use of agreements allows all members to have a free and profound exchange, to respect a diversity of views, and to share responsibility for the well-being and direction of the group. Agreements often used include:

- We will hold stories or personal material in confidentiality.
- We listen to each other with compassion and curiosity.
- We ask for what we need and offer what we can.
- We agree to employ a group guardian to watch our need, timing, and energy. We agree to pause at a signal, and to call for that signal when we feel the need to pause.

THREE PRINCIPLES:

The circle is an all leader group.

1. **Leadership rotates** among all circle members.
2. **Responsibility is shared** for the quality of experience.

3. **Reliance is on wholeness**, rather than on any personal agenda.

THREE PRACTICES:

1. To speak with intention: noting what has relevance to the conversation in the moment.
2. To listen with attention: respectful of the learning process for all members of the group.
3. To tend the well-being of the circle: remaining aware of the impact of our contributions.

FORMS OF COUNCIL:

The circle commonly uses three forms of council: talking piece, conversation and reflection.

Talking piece council is often used as part of check-in, check-out, and whenever there is a desire to slow down the conversation, collect all voices and contributions, and be able to speak without interruption.

Conversation council is often used when reaction, interaction, and an interjection of new ideas, thoughts and opinions are needed.

Reflection, or Silent council gives each member time and space to reflect on what is occurring, or needs to occur, in the course of a meeting. Silence may be called so that each person can consider the role or impact they are having on the group, or to help the group realign with their intention, or to sit with a question until there is clarity.

GUARDIAN

The single most important tool for aiding self-governance and bringing the circle back to intention is the role of the guardian. To provide a guardian, one circle member at a time volunteers to watch and safeguard group energy and observe the circle's process.

The guardian usually employs a gentle noise-maker, such as a chime, bell, or rattle, that signals everyone to stop action, take a breath, rest in a space of silence. Then the guardian makes this signal again and speaks to why he/she called the pause. Any member may call for a pause.

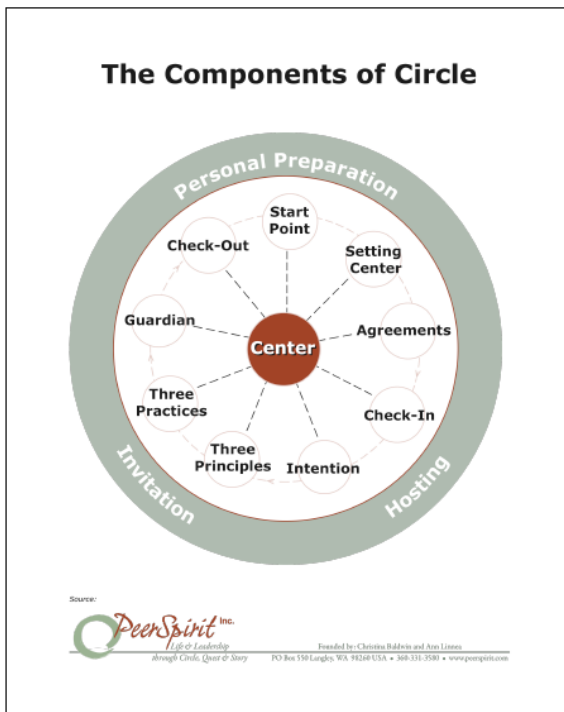
CHECKOUT AND FAREWELL

At the close of a circle meeting, it is important to allow a few minutes for each person to comment on what they learned, or what stays in their heart and mind as they leave.

Closing the circle by checking out provides a formal end to the meeting, a chance for members to reflect on what has transpired, and to pick up objects if they have placed something in the center.

As people shift from council space to social space or private time, they release each other from the intensity of attention being in circle requires. Often after check-out, the host, guardian, or a volunteer will offer a few inspirational words of farewell, or signal a few seconds of silence before the circle is released.

May your circles be great teachers and places to rest on the journey.



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2. Appreciative Inquiry

Appreciative Inquiry (AI) is a strategy for intentional change that identifies the best of 'what is' to pursue dreams and possibilities of 'what could be.' AI is a cooperative search for strengths, what is known, what is right.

AI focuses on the positive and strengths seeking to build on what is currently working as blocks leading to a positive and productive future. This focus on strengths, and what is right offers an opportunity for individuals to accept what is known and to build on what works. Research has shown that this approach is the only successful way to bring about long-term change and deep learning. (*Cooperrider & Srivastva, 1987*)

For more information on Appreciative Inquiry go to:

<http://appreciativeinquiry.case.edu/>

Social Capital Skills (Social and Emotional Learning) Practiced with Appreciative Inquiry

Social Capital skills built using Appreciative Inquiry include:

- Seeking the positive
- Managing negative situations by looking for the positives and then asking how this situation could become manageable
- Looking at life, people, daily situations from a positive vantage point

Assumptions

- In every learning situationsomething works
- What we focus on becomes our reality
- Reality is created in the moment – there is more than one reality
- The act of asking questions influences the community in some way
- People have more confidence and comfort to journey to the future when they carry forward parts of the past
- If we carry forward parts of the past, they should be what is best
- It is important to value differences
- The language we use creates our reality

<i>Problem Solving</i>	<i>Appreciative Inquiry</i>
"Felt Need" Identification of a problem or issue	Appreciating & valuing the best of "what is"
Analysis of causes	Envisioning "what might be"; looking at what is 'right' or what is 'known'
Analysis of possible solutions	Dialoguing "What should be or could be" Innovating "What will be"
Basic Assumption: Learning is a problem to be solved.	Basic Assumption: Learning is a mystery to be embraced.

General Flow of an Appreciative Inquiry Process

Appreciative inquiry can be done as a structured process going through phases of

- **DISCOVER:** identifying class or learning processes that work well.
- **DREAM:** envisioning class or learning processes that would work well in the future.
- **DESIGN:** Planning and prioritizing those positive processes.
- **DELIVER:** implementing the proposed design.

Engage students in creating the most useful 'classroom' process for their learning. Then have students help plan the class, identify how to address a problem or an issue / figure out a different way to support the natural learning process by focusing on what is working or what is right, then asking what could I or we do differently to move forward!

The basic idea is to build learning approach around what works, rather than trying to fix what doesn't.

At the center is a **positive topic choice** – how we ask even the first question contains the seeds of change we are looking to enact.

Appreciative Inquiry can also be used as a way of opening a class or conversation by identifying **what already works**. What do you value most about your self/work/organization?

What is Appreciative Inquiry Good For?

Appreciative Inquiry is useful when a different perspective is needed, or when we wish to begin a new process, set of information, academic or work skills with a fresh, positive vantage point. Appreciative Inquiry can help move a group that is stuck in “what is” toward “what could be.” Appreciative Inquiry can be used with individuals, small groups, or large classes.

Reflecting on Appreciative Inquiry

What are my insights about *Appreciative Inquiry*? What further questions do I have about *Appreciative Inquiry*?

What might be possible if I used an appreciative approach to begin a new content standard or step in our curriculum?

How could I be sure that all students are learning the next steps they need to build on the skills/knowledge they already have acquired?

How could I use Appreciative Inquiry when discussing test results with students?

How could I use Appreciative Inquiry in a workplace situation to train or supervise new workers?

3. The World Café

The World Cafe is a method for creating a collaborative learning conversation around questions that matter **by innovating instruction in the classroom**. Cafe is ideal for **administrators to develop** collaboration and co-creation with faculty, boards, and community partners.

For more information on World Café visit: www.theworldcafe.com

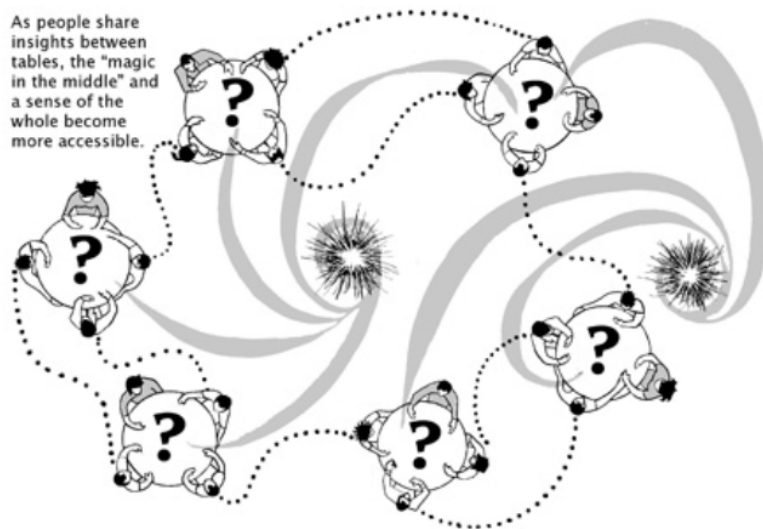
Social Capital Skills (Social and Emotional Learning) Practiced with World Café

The Social Capital skills practiced in café include:

- Collaboration
- Working in a team
- Listening and discussing diverse ideas or opinions
- Building a collective diagram or model
- Managing time
- Taking a leadership role
- Self advocacy
- Putting abstract ideas into a visual model
- Active listening
- Framing powerful learning questions
- Peer learning and coaching, etc.

7 Operating Principles of World Cafe

1. Create hospitable space: ensure a welcoming, safe place.
2. Explore questions that matter in learning the course content, getting a project started or keeping it going, or in exploring issues of daily life.
3. Encourage each person's contribution; continually invite all participants to add to the café conversation
4. Connect diverse people, diverse insights, and diverse ideas. Diversity builds richness and depth to every conversation
5. Connect abstract ideas in a visual picture by using graphic organizers, webs or mind maps. Seeing the connections is crucial to sustaining learning.
6. Listen together for patterns, insights and deeper questions that emerge from the conversations



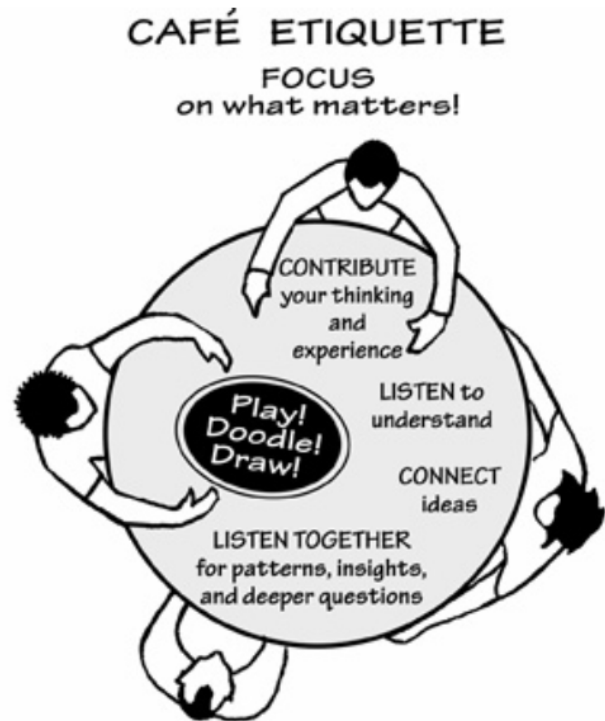
7. Make collective knowledge visible and easy to harvest/share by creating graphic organizers, mind maps or webs.

Assumptions of World Café

- The knowledge and wisdom we need is present and accessible.
- Collective insight evolves from honoring unique contributions; connecting ideas; listening into the middle; noticing deeper themes and questions.
- The intelligence of the group emerges as the individuals connect to each other personally as well as to the diverse ideas of their conversation partners are expressing.

General Flow of a World Café in Education

- ⇒ Clarify the context (why is this issue important?)
- ⇒ Seat 4-5 students at café-style tables or in conversation clusters. This number is critical not to exceed because of the need and purpose if for everyone to be engaged and it doesn't work with too many people.
- ⇒ Have the café group select one person to be the host or hostess.
- ⇒ The host/hostess selects a time keeper and someone to take lead on creating the graphic organizer, mind map, or web
- ⇒ Ask the question for the café groups to discuss. The host/hostess writes the question on the top of their easel paper in the center of the table.
- ⇒ Begin the café and let the dialogue continue for 15 - 30 minutes.
- ⇒ Ask the host/hostess to stay at the table as a "host" for the next group. He/she can invites the current group to students to move to other tables while also inviting new students to come to their café.
- ⇒ As the 2nd round of café begins, instruct the hosts at each café table to share key insights, questions, and ideas from the first café *briefly* with the new table members. Then question for the overall café is then reread by the host/hostess. A new timekeeper and graphic creator is selected. The host/hostess begin the new conversation, building on/adding to the first graphic.
- ⇒ After you've moved through the rounds, allow some time for each café table and the whole-group harvest the conversations.





A Few Principles of World Café:

- Focus on what matters
- Suspend judgments, assumptions, and certainties
- Speak one at a time
- Listen to each other carefully
- Listen together for patterns, insights and deeper questions
- Slow down to the speed of your breathing
- Be aware of your impact on the group
- Divergent opinions are ok
- Contribute with your mind, body and heart
- Link and connect ideas
- Play, doodle, draw - Have fun!

What is World Café Good For?

A World Café is a great way of fostering interaction and collaboration, sharing learnings or knowledge, peer teaching/coaching, generating fresh ideas, and dialogues with both large and small groups of students. It is particularly effective in surfacing the 'collective wisdom' of groups with diverse students at different instructional levels or with diverse backgrounds. The café format is very flexible and adapts to many different purposes - knowledge sharing, skill building, relationship building, deep reflection, project planning.

When planning a café, make sure to leave ample time for both moving through the rounds of questions (likely to take longer than you think!) and some type of a whole-group harvest.

Use your own creativity, flexible. USE YOUR IMAGINATION

Harvesting

- limited only by your imagine

Materials Needed

- Tables and chairs – if none are available, have students sit on the floor or use chairs around a sheet of easel paper
- Tablecloths or something to make the classroom feel ‘comfortable’ and hospitable to conversation
- Easel chart paper or paper placemats for covering the tables
- Markers – lots of colored markers or crayons
- Easel chart or large butcher paper for harvesting collective knowledge or insights
- Create a set of permanent posters/table tents of Café Etiquette – create with your class

Reflecting on the World Café

What are my insights about the *World Café*? What further questions do I have about *the World Café*?

In what context can you imagine using this method of listening and learning that would be just perfect for your students?

What would be some good questions for cafes on content areas – knowledge areas and to build specific skills?

How could you use cafes to plan group activities? How could you use cafes to problem solve issues around persistence or specific classroom management issues/ideas?

What are the 5 various ways that you could harvest the ideas that generated by the cafes’ that you’ve hosted?

4. Open Space

The goal of Open Space is to create time and space for participants to engage, ask questions, and/or share knowledge around issues of concern to them (such as review of an upcoming test, managing a project-based learning experience, planning a 'real life' field trip around content issues or topic of interest).

Using Open Space in classes can result in a transformative experience for the individuals and groups involved. It is a simple and powerful way to catalyze effective working conversations and truly invite participants to thrive and act in the role of leader, knowledge sharer, and questioner.

For more information on Open Space, visit: www.openspaceworld.org

Social Capital Skills (Social and Emotional Learning) Practiced with Open Space

The Social Capital skills practiced in Open Space include:

- Leadership
- Asking questions
- Offering something of interest to others
- Active listening
- Asking for help and offering help
- Diagramming and/or summarizing a conversation

Principles of Open Space

- Whoever comes are the right people
- Whenever it starts is the right time
- Whatever happens is the only thing that could have
- When it's over it's over



The Law of Two Feet: If you find yourself in a situation where you are not contributing or learning, *move somewhere where you can.*

PASSION & RESPONSIBILITY

The four principles and the law work to create a powerful event motivated by the passion and bounded by the responsibility of the participants.

Roles in Open Space

- Convener
- Participant
- Bumble bee
- Butterfly

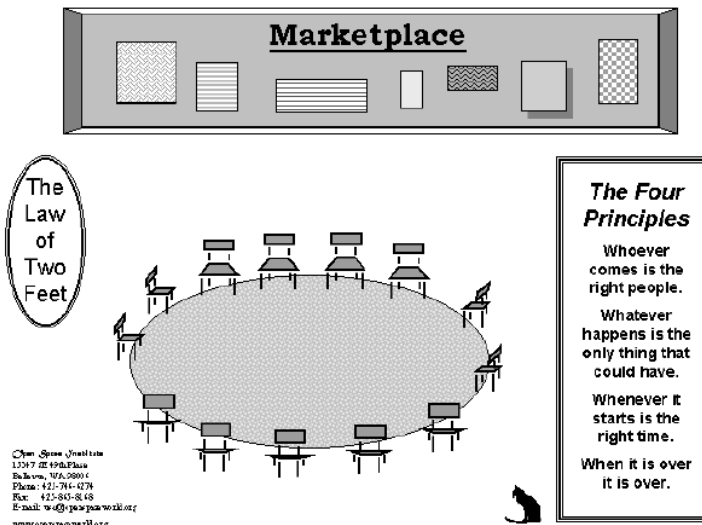


General Flow of Open Space

The group convenes in a circle and is welcomed by the **host**.

The **host** provides an overview of the process and explains how it works. The host invites people with issues of concern, questions, ideas to share, or knowledge to offer to come into the circle, write the issue on a piece of paper or colored index card and announce it to the group.

The people with the issues, questions, ideas, or knowledge to offer are "**convener**."



The convener either identifies their own place to host a conversation or is placed in a location by the host. He/she then places their paper or card with their issue, question, or knowledge to offer on the wall and hangs an easel paper under the paper/card on the wall

When several conveners are set up, the host invites the members of the group to join the conversations they are interested in – again, the students can be a participant, bumble bee or butterfly.

Conversations convene for the balance of the class. **The convener** captures the important points of the conversation they lead by making a graphic organizer, mind map, or web to summarize the conversation. He/She posts their summary on the wall. All of these summaries will be shared as a harvest in some way and then shared shared back with the larger group.

What is Open Space Good For?

Open Space is useful in almost any context, including pre-test reviews, planning outings, managing of curriculum topics, classroom management, collaboration, and to deepen learning about issues and content.

Materials Needed:

- A blank wall that will become the agenda of topics or questions
- A wall for recording and posting the results of the dialogue sessions
- Breakout spaces for the small group discussions
- Paper on which to write session topics/questions plus Markers/Pencils/Pens
- Posters listing the Principles, Law of Two Feet, and Roles

Reflecting on Open Space

What are my insights about Open Space? What further questions do I have about Open Space?

How do you see Open Space being used in building a learning community?

How could you see Open Space being used in your light of being career awareness or core standards?

Powerful Questions

While answers tend to bring us to closure, questions open up to exploration.

Asking the right question

Asking the right question is the most effective way of opening up a conversation and keeping it engaging. A high-quality question focuses on what is meaningful for the participants, triggers our curiosity and invites us to explore further.

*If I had an hour to solve a problem and my life depended on it,
I would use the first 55 minutes to formulate the right question
because as soon as I have identified the right question
I can solve the problem in less than five minutes.*

Albert Einstein

When beginning each class, it is helpful to have an overall question - one that itself embodies the purpose of the class. This is the *key question* or the *calling question* for the conversation.

The conversation may include other questions than the calling question. The questions you choose - or that people discover during conversation - are critical to its success.

Guidelines for choosing questions:

- A well-crafted question attracts *energy* and focuses *attention* on what matters. Experienced hosts recommend asking open-ended questions, not ones that have a simple yes/no answer.
- Good questions invite *inquiry* and *curiosity*. They do not need to promote action or problem solving immediately.
- You'll know a good question when it continues to surface good ideas and possibilities.
- Check possible questions with key people who will take part in a conversation. Does it hold their attention and energy?

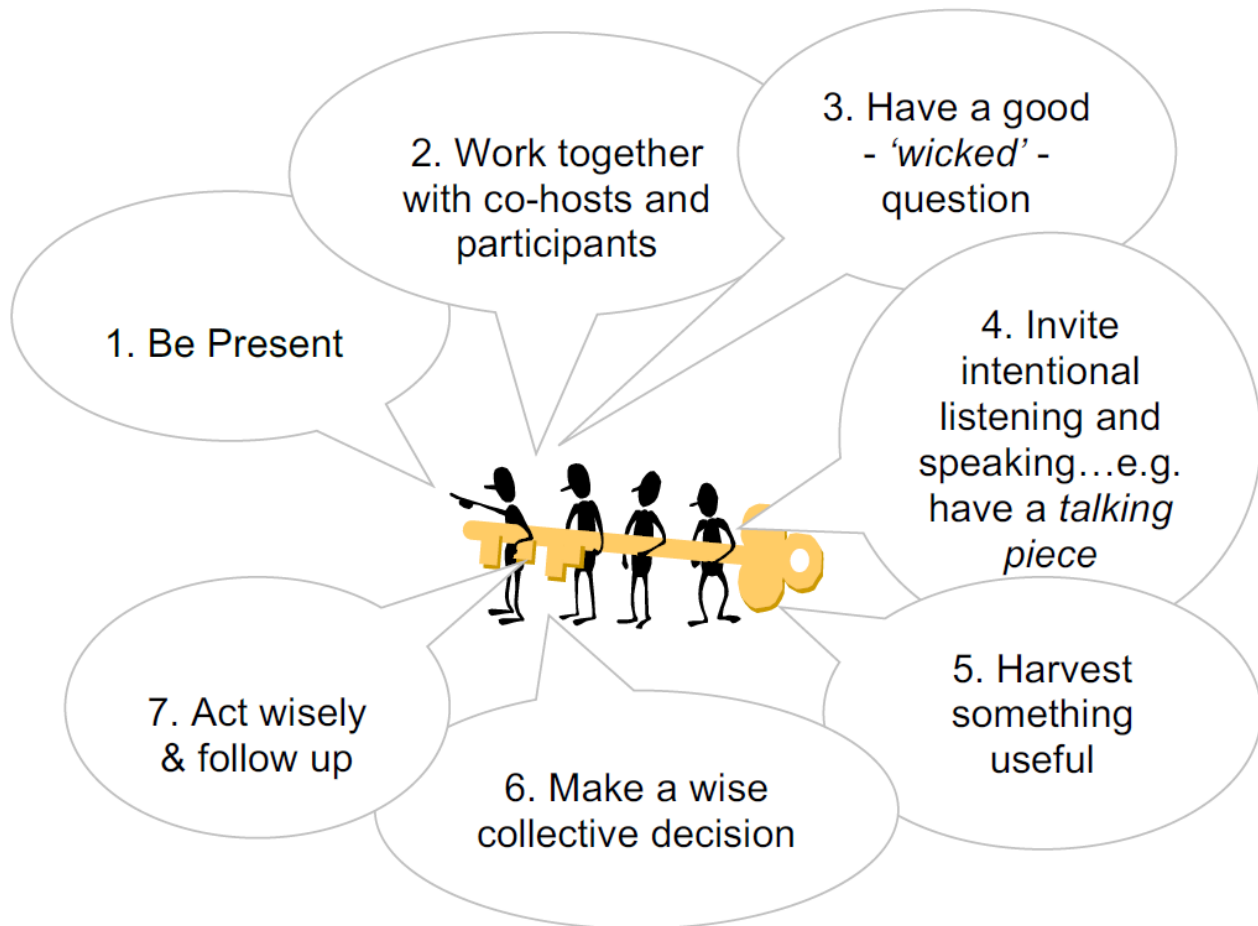
A powerful question:

- Is simple and clear
- Is thought provoking
- Generates energy
- Focuses inquiry
- Challenges assumptions
- Opens new possibilities
- Evokes more questions

A powerful question focuses Attention, Intention and Energy

Essentials of Participatory Learning Design

Seven Little Helpers



What do you need as a minimum to host Participatory Learning?

1. Be present!
2. Have a good & powerful question?
3. And have a stone - a talking piece, which is the simplest structure or tool that can be used to create intentional speaking and listening.

The Seven Helpers

Over the years, these initial three tools have expanded to include 'seven helpers' that are the source of good conversational design. At the bare minimum, if you use these tools, conversations will grow deeper and work will occur at a more meaningful level.

These seven helpers bring form to fear and uncertainty and help us stay in the chaos of not knowing the answers. They help us to move through uncomfortable places together, like conflict, uncertainty, fear and the groan zone and to arrive at wise action.

1. Be present
2. Have a good question
3. Use a talking piece
4. Harvest
5. Make a wise decision
6. Act
7. Stay together

1. Be Present

Inviting presence is a core practice of hosting, but it is also a key practice for laying the groundwork for great learning. There are many ways of bringing a group to presence, including:

- Start with a moment of silence
- Check in with a personal question related to the theme of the meeting
- Pass a talking piece and provide space for each voice to be heard
- Start well. Start slowly. Check everyone in.

2. Have a Good Question

A good question is aligned with the need and purpose of the meeting and invites us to go to another level. Good questions are put into the center of a circle and the group speaks through them. Having a powerful question at the center keeps the focus on the work and helps groups stay away from unhelpful behaviors like personal attacks, politics and closed minds.

A good question has the following characteristics:

- Is simple and clear
- Is thought provoking
- Generates energy
- Focuses inquiry
- Challenges assumptions
- Opens new possibilities
- Evokes more questions

It is wise to design these questions beforehand. As you dive into these questions, harvest the new questions that are arising. They represent the path you need to take.

3. Use a Talking Piece

In its simplest form a talking piece is simply an object that passes from hand to hand. When one is holding the piece, one is invited to speak and everyone is invited to listen. Using a talking piece has the powerful effect of ensuring that every voice is heard and it sharpens both speech and listening. It slows down a conversation so that when things are moving too fast, or people begin speaking over one another and the listening stops, a talking piece restores calm and smoothness. Conducting the opening round of a conversation with a talking piece sets the tone for the meeting and helps people to

remember the power of this simple tool.

Of course a talking piece is really a minimal form of structure. Every class should have some form of structure that helps to work with the chaos and order that is needed to co-discover new ideas. There are many forms and processes to choose from but it is important to align them with the nature of living systems if innovation and wisdom is to arise from chaos and uncertainty.

At more sophisticated levels, when you need to do more work, you can use more formal processes that work with these kinds of context. Each of these processes has a sweetspot, it's own best use, that you can think about as you plan meetings. Blend as necessary.

4. Harvest

Never meet unless you plan to harvest your learnings. The basic rule of thumb here is to remember that you are not planning a class, you are instead planning a harvest. Know what is needed and plan the process accordingly. Harvests don't always have to be visible; sometimes you plan to meet just to create learning. But support that personal learning with good questions and practice personal harvesting.

To harvest well, be aware of four things:

- **Create an artefact.** Harvesting is about making knowledge visible. Make a mind map, draw pictures, take notes, but whatever you do create a record of your conversation.
- **Have a feedback loop.** Know how you will use your harvest before you begin your meeting. Is it going into the system? Will it create questions for a future meeting? Is it to be shared with people as news and learning? Figure it out and make plans to share the harvest.
- **Be aware of both intentional and emergent harvest.** Harvest answers to the specific questions you are asking, but also make sure you are paying attention to the cool stuff that is emerging in good conversations. There is real value in what's coming up that none could anticipate. Harvest it.
- **The more a harvest is co-created, the more it is co-owned.** Don't just appoint a secretary, note taker or a scribe. Invite people to co-create the harvest. Place paper in the middle of the table so that everyone can reach it. Hand out post it notes so people can capture ideas and add them to the whole. Use your creative spirit to find ways for the group do their own harvest.

5. Make a Wise Decision

If your class needs to come to a decision, make it a wise one. Wise decisions emerge from conversation, not voting. The simplest way to arrive at a wise decision is to use the three thumbs consensus process. It works like this:

First, clarify a proposal. A proposal is a suggestion for how something might be done. Have it worded and written and placed in the centre of the circle. Poll the group asking each person to offer their thumb in three positions. **UP** means "I'm good with it." **SIDEWAYS** means "I need more clarity before I give the thumbs up" **DOWN** means "this proposal violates my integrity...I mean seriously."

As each person indicates their level of support for the proposal, note the down and sideways thumbs. Go to the down thumbs first and ask: "what would it take for you to be able to support this proposal." Collectively help the participant word another proposal, or a change to the current one. If the process is truly a consensus building one, people are allowed to vote thumbs down only if they are willing to participate in making a proposal that works. Hijacking a group gets rewarded with a vote. Majority rules.

Once you have dealt with the down thumbs, do the same with the sideways thumbs. Sideways doesn't mean "no" but rather "I need clarity." Answer the questions or clarify the concerns.

If you have had a good conversation leading to the proposal, you should not be surprised by any down thumbs. If you are, reflect on that experience and think about what you could have done differently.

6. Act

Once you have decided what to do, act. There isn't much more to say about that except that wise action is action that doesn't not over-extend or under-extend the resources of a group. Action arises from the personal choice to responsibility for what you love. Commit to the work and do it.

7. Stay Together

Relationships create sustainability. If you stay together as friends and co-learners you become accountable to one another and you can face challenges better. When you feel your relationship to your closest mates slipping, call it out and host a conversation about it. Trust is a group's most precious resource. Use it well.

Additional Resources

Books and Websites

Many resources are available – books, articles, websites, blogs, communities. We included a few websites in the section on core methods. Remember to check out YouTube for videos about Participatory Learning’s methodologies.

As starting points or hubs for more extensive lists of resources, we suggest:

www.artofhosting.org

Baldwin, Christina

Calling the Circle – The First and Future Culture

Storycatcher – Making sense of Our Lives through the Power and Practice of Story

www.peerspirit.com

Brown, Juanita with David Isaacs & the World Café Community

The World Café – Shaping Our Futures Through Conversations That Matter

www.theworldcafe.com

Corrigan, Chris

The Tao of Holding Space

Open Space Technology – A User’s Non-Guide (with Michael Herman)

www.chriscorrigan.com

Cooperrider, David and Srivastva (2000)

Appreciative Inquiry: Rethinking Human Organization Toward a Positive Theory of Change

www.appreciativeinquiry.case.edu

www.appreciativeinquiry.case.edu/uploads/whatisai.pdf

David Cooperrider and Diana Whitney and Jacqueline Stavros (2007)

ESSENTIALS of Appreciative Inquiry www.davidcooperrider.com

Owen, Harrison

Open Space Technology – A Users Guide

Expanding our now - The Story of Open Space Technology

The Spirit of Leadership - Liberating the Leader in Each of Us

www.openspaceworld.org

Senge, Peter

The Fifth Discipline

The Fifth Discipline Field Book (with Ross, Smith, Roberts, and Kleiner)

The Art and Practise of The Learning Organization

The Dance of Change (with Art Kleiner, Charlotte Roberts)

Wheatley, Margaret J.

Leadership and the New Science:

Turning to One Another

Finding Our Now

A Simpler Way (with Myron Kellner-Rogers)

Whitney, Dianna and Trosten-Bloom, A.

The Power of Appreciative Inquiry: a Practical Guide to Positive Change.