Schooling by Design and ARCS
Practical Tools and Strategies

NESA Fall Leadership Conference

Alignment

Policies, Structures, Governance
Resource Allocation
Personnel – Hiring, Appraisal, Development
Instructional Programs and Practices
Curriculum and Assessment System
Mission
Learning Principles

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# Schooling by Design and ARCS: Practical Tools and Strategies Agenda

## Agenda

<table>
<thead>
<tr>
<th>Topic</th>
<th>Time Frame (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction and Context Setting</td>
<td>10</td>
</tr>
<tr>
<td>Q and A – Schooling by Design and ARCS</td>
<td>10</td>
</tr>
<tr>
<td>Approach to the Change Process #1</td>
<td>10</td>
</tr>
<tr>
<td>Mission Related Indicators</td>
<td>15</td>
</tr>
<tr>
<td>Approach to the Change Process #2: Mapping Initiatives</td>
<td>20</td>
</tr>
<tr>
<td>Learning Principles</td>
<td>30</td>
</tr>
<tr>
<td>-- Break --</td>
<td></td>
</tr>
<tr>
<td><strong>Process Tools</strong></td>
<td></td>
</tr>
<tr>
<td>Gap Analysis</td>
<td>10</td>
</tr>
<tr>
<td>Assessing Staff: Ready–Willing–Able</td>
<td>15</td>
</tr>
<tr>
<td>Assessing Staff: Experience, Expertise and Passion</td>
<td>5</td>
</tr>
<tr>
<td>Force-field Analysis</td>
<td>5</td>
</tr>
<tr>
<td>Behavior Over Time Graphs</td>
<td>20</td>
</tr>
<tr>
<td>“Yes, but...”</td>
<td>5</td>
</tr>
<tr>
<td>Planning for Implementation using Backward Design and ARCS</td>
<td>10</td>
</tr>
</tbody>
</table>
Schooling by Design – Key Elements

- Policies, Structures, Governance
- Resource Allocation
- Personnel – Hiring, Appraisal, Development
- Instructional Programs and Practices
- Curriculum and Assessment System
- Mission
- Learning Principles

Use Backward Design
Apply Strategic Principles
The Communities for Learning ARCS framework for sustainable improvement is grounded in many years of research and practice. It includes four core elements: Alignment, Representation, Culture and Sustainability.

- **Alignment** – examining connections, coherence, focus, direction and sequence; questions and activities supporting alignment involve connecting school and individual vision, expertise and actions.

- **Representation** – questioning stakeholder engagement, participation, assumptions, and perspectives; strategies supporting representation involve actively engaging students, administrators, teachers, parents, community and business partners, etc. in articulating, questioning and planning the learning and work of the community.

- **Culture** – acknowledging the role of norms, behaviors and values in day-to-day life, and questioning their influence on improvement initiatives; probing the presence and importance of six “Dispositions of Practice“ (personal, professional and organizational attributes whose development support and deepen the community’s ongoing learning and whose influence is evidenced in discourse, behavior and work).

- **Sustainability** – exploring the structures and thinking that focus on continuance and meaning beyond the present moment or immediate importance; the development of a three-tier learning-leading-lasting structure that develops the expertise, leadership and longevity system-wide and contextualizes today’s successes and improvements as the legacy of the future.

Each of these elements serves as a distinctive lens through which leaders and others can examine programs, practices, processes and structures. Together they provide an “operating system” that supports healthy, ongoing and sustainable improvement. The ARCS framework provokes questions and inspires coherent action, establishing continuous improvement in the service of learning as the only acceptable “status quo.”
Approaches to the Change Process – Model 1

1. Articulate the vision and guiding principles.

2. Establish credible evidence/indicators of success.

3. Assess the (inevitable) gap.

4. Plan actions to narrow/close the gap and act on the plan.

5. Analyze results and act on feedback.

Note: While there is a general logic to the change process, it is not rigidly sequential. Educational change is typically recursive, similar to the writing process. For example, educators will frequently return to modify their actions as they begin to collect data on results.
Approaches to the Change Process – Model 1

Articulate the vision and guiding principles.
- What is our mission? In brief, what are we in business to accomplish?
- What is our shared vision of success at this mission? What do we want our school to “look like” and “sound like” in the future?
- What principles, values, and beliefs justify and serve as a basis of our vision and mission?

Establish credible evidence/indicators of success.
- What would we see if we achieved our mission? What will the educators, parents, community members, and students say and do if they are “living” the school’s mission and vision on a daily basis?
- What are the indicators that our vision is becoming realized? What data will we need to collect and act on in a regular and timely way?
- How will we judge our progress along the way?
- How will we collect the needed data in the most effective and least intrusive ways?

Assess the (inevitable) gap.
- Where are we now (our current reality, both in terms of levels of student achievement – student data – and in the status of curriculum, assessment, and instruction – adult data) compared to where we want to be (our vision)?
- What gaps should have priority, given the vision and the reality?

Plan actions to narrow and close the gap, and act on the plan.
- What concrete goals and plans (designed “backward” from desired results) will enable us to realize our vision most effectively?
- What “best practices” in curriculum, assessment, and instruction are most likely to enable us to meet our goals, based on the root cause analysis we have conducted?
- What specific actions will be required to implement the identified best practices?
- What sequence of actions will maximize our progress?
- Who will be responsible for what actions?
- Within what timelines will actions occur?
- What resources will be needed?
- How will we build the capacity of the staff to implement the actions effectively?
- What factors within the school and community will support our efforts? What resistors must be addressed?
- What ongoing feedback will be needed to help us stay focused on our goals?

Analyze results and act on feedback.
- How are we doing – ... against standards? ... compared to our vision?
- What adjustments in our strategies are necessary? Where must we rethink our plan?
- Who is now ready to take on a bigger role in the reform effort?
## Envisioning Your Mission

<table>
<thead>
<tr>
<th>Your Mission-Related Educational Goals</th>
<th>Indicators: What observable indicators would we see if these were targeted?</th>
<th>Indicators: What wouldn’t we see (or see less of) if these were targeted?</th>
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Mission-Related Indicators – Middle School

Self Directed Learner
As I continue to become a responsible, self-directed learner, I:
• arrive prepared for class.
• plan and budget time to meet deadlines.
• follow through on commitments.
• attend to and follow directions.
• manage my behavior so that I remain focused.
• organize time and materials.
• persevere in challenging situations.
• take ownership of work and actions.
• strive to do my best work in all situations.
• strive for accuracy.
• am able to undertake independent study.

As I continue to become a resourceful, self-directed learner, I:
• ask a variety of questions in order to clarify my understanding.
• know when and how to seek help and assistance.
• find and use information from a variety of sources.
• evaluate information for reliability, accuracy and credibility.
• demonstrate a willingness to take risks in order to learn.
• use reasoning strategies, knowledge and common sense to solve problems.
• apply prior knowledge to new situations.

As I continue to become a reflective, self-directed learner, I:
• am thoughtful, open-minded, and curious.
• assess my work in order to identify areas of strength and weakness.
• assess the strengths and weaknesses of how I learn in order to make appropriate adjustments.
• generate and employ strategies to improve weaknesses.
• respond to new information by reflecting on experience and reconsidering my opinion and sources of information.
• listen to and respect the contributions of others.

Responsible and Involved Student/Citizen
As I continue to strive toward being a responsible student/citizen, I:
• demonstrate skill in decision-making which reflects that my choice is informed and based on ethical behavior rather than peer-pressure.
• understand and accept responsibility for my actions.
• resolve conflicts peacefully without compromising personal values.
• respect the rights and feelings of myself and others.
• respect school property as well as the environment.
• make healthy choices.
Mission-Related Indicators – Middle School

(continued)

As I continue to strive toward being an involved student/citizen, I:
  • participate in a variety of school activities beyond the school day.
  • productively contribute to the community.
  • demonstrate dependability, productivity and initiative.

Creative and Practical Problem Solver

As I continue to strengthen my ability to become a creative and practical problem solver, I:
  • carefully observe situations to identify a problem.
  • define problems clearly and accurately.
  • brainstorm solution strategies using reasoning, prior knowledge, common sense, creativity.
  • identify and gather relevant information to support solution strategies.
  • apply the steps necessary to carry out the solution strategy.
  • identify patterns, trends, and relationships that apply to the solution(s) of the problem.
  • evaluate the effectiveness of the process(es) and solution(s).
  • extend and/or transfer the learning to new situations.

Effective Team Member

As I continue to strengthen my ability to collaborate with others, I:
  • understand and commit to the goal of the group
  • share ideas with others
  • accept ideas/opinions from others
  • actively participate in brainstorming sessions
  • demonstrate respect for myself and others
  • positively interact with group members
  • demonstrate flexibility in group decisions (compromise)

As I continue to strengthen my ability to cooperate with others, I:
  • follow directions
  • accept responsibility for my role in the task at hand
  • demonstrate dependability and reliability
  • contribute to accomplishing the goal in a timely manner

As I continue to strengthen my ability to develop interpersonal skills, I:
  • assist in resolving conflicts
  • am knowledgeable about individual roles of group members
  • actively listen to others
  • provide constructive feedback to others
  • utilize feedback from others

Source: West Windsor-Plainsboro Schools, New Jersey
Approaches to the Change Process – Model 2:
Creating a Visual Representation of Initiatives

Directions:
1. List all the major school initiatives, programs and projects that are consuming the bulk of your time or your staff’s time.
2. Underline the initiative(s) that you believe is/are the most important?
3. Create a graphic representation of these initiatives.
4. Establish their relationship between any of the initiatives, if there is one.

Consider the following questions:
1) What initiatives or projects are driving the bulk of the work?
2) How is/are the initiative(s) you identified positioned relative to the others? How likely is it that this/these initiatives will be sustainable given its/their position?
Getting to Know the Initiative

Overall Purpose/Goal(s)

Launcher(s)

Beneficiaries

Implementers
# Getting to Know the Initiative

## Alignment Questions

Probing:
- connection to existing or recognized goals
- coherence between and among goals, actions and intentions
- focus
- intentionality
- sequence of actions

## Representation Questions

Probing:
- how to incorporate the perspectives of those whose realities will be most affected
- perspectives that would most help us uncover and test prevailing assumptions
- who to involve in planning and implementing, and how to engage them
## Getting to Know the Initiative

### Culture Questions

Probing:
- rationale
- intended and unintended consequences
- long term vs short term usefulness and importance
- likelihood of inspiring positive change
- whether both necessary and sufficient
- worthy of time, energy, resources needed to begin or continue

### Sustainability Questions

Probing:
- the values and beliefs that are promoted or challenged
- the dispositions of practice most needed or most attended to
- the degree to which focus is on developing attitudes, behaviors and production of work that support improvement
Perspective Chart

Use the following chart to examine different perspectives on an issue or a planned initiative. The chart can be used to identify: positions on an issue; degree of support for an initiative; concerns/objections; implications for their work/role; etc.

Different role perspectives could include: teachers, administrators, students, parents, policy makers, community members, higher education, and employers.

**Initiative or Issue:**

- Some teachers view performance-based assessment as taking too much time to give and too subjective to grade. Other teachers see performance assessments as a vehicle for engaging students in more authentic learning.

- Some students find performance assessment tasks interesting and challenging. Other students think that they are too demanding and prefer “bubble-sheet” tests.

- Some Board members see the value of authentic performance assessments and encourage their use. A few Board members are only concerned with the results of high-stakes standardized tests and discount the validity of local assessments.

- Some administrators encourage use of performance assessments since they can address authentic application and 21st-Century Skills. Other administrators are worried that they are not aligned with the format of standardized tests.

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Perspective Chart

Use the following chart to examine different perspectives on an issue or a planned initiative. The chart can be used to identify: positions on an issue; degree of support for an initiative; concerns/objections; implications for their work/role; etc.

Different role perspectives could include: teachers, administrators, students, parents, policy makers, community members, higher education, and employers.
Creating a Theory of Change

Review the following Theory of Change from Jefferson County Public Schools, Louisville, KY

When we collaborate to:

• Create caring and culturally responsive classroom communities;
• Provide high-quality, personalized instruction that challenges and engages students in authentic work;
• Ensure equitable access for all students to a consistent, world-class, inquiry-based curriculum; and
• Prepare leaders to engage in collaborative strategies to move this shared vision forward

Then... All students graduate with:

• A high level of academic performance;
• Strong character development and civic engagement; and
• Enhanced health and wellness

So that... All students are prepared to

• Achieve their goals;
• Follow their dreams; and
• Create a more just society.

With your team, draft a theory of change in support of the initiative you most value.

When we _____X_____ or support _____X____ or the development of _____X____…

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Then…
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

So that…
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
Schooling by Design: Key Learning Principles

1. Learning is purposeful and contextual. Therefore, students should be helped to see the purpose in what they are asked to learn. Learning should be framed by relevant questions, meaningful challenges, and authentic applications.

2. Experts organize or chunk their knowledge around transferable core concepts (“big ideas”) that guide their thinking about the domain and help them integrate new knowledge. Therefore, content instruction should be framed in terms of core ideas and transferable processes, not as discrete facts and skills.

3. Different types of thinking, such as classification and categorization, inferential reasoning, analysis, synthesis, and metacognition, mediate and enhance learning. Therefore, learning events should engage students in complex thinking to deepen their learning.

4. Learners reveal and demonstrate their understanding when they can apply, transfer, and adapt their learning to new and novel situations and problems. Therefore, teachers should teach for transfer, and students should have multiple opportunities to apply their learning in meaningful and varied contexts.

5. New learning is built on prior knowledge. Learners use their experiences and background knowledge to actively construct meaning about themselves and the world around them. Therefore, students must be helped to actively connect new information and ideas to what they already know.

6. Learning is social. Therefore, teachers should provide opportunities for interactive learning in a supportive environment.

7. Attitudes and values mediate learning by filtering experiences and perceptions. Therefore, teachers should help students make their attitudes and values explicit and understand how they influence learning.

8. Learning is nonlinear; it develops and deepens over time. Therefore, students should be involved in revisiting core ideas and processes so as to develop deeper and more sophisticated learning over time.

9. Feedback enhances learning and performance. Therefore, ongoing assessments should provide learners with regular, timely, and user-friendly feedback, along with the opportunity to use it to practice, retry, rethink, and revise.

10. Effectively accommodating a learner’s preferred learning style, prior knowledge, and interests enhances learning. Therefore, teachers should pre-assess to find out students’ prior knowledge, learning preference, and interests; then differentiate their instruction to address the significant differences they discover.
Seven Principles of Learning*

1. Learning with understanding is facilitated when new and existing knowledge is structured around the major concepts and principles of the discipline.
2. Learners use what they already know to construct new understandings.
3. Learning is facilitated through the use of metacognitive strategies that identify, monitor, and regulate cognitive processes.
4. Learners have different strategies, approaches, patterns of abilities, and learning styles that are a function of the interaction between their heredity and prior experiences.
5. Learners’ motivation to learn and sense of self affects what is learned, how much is learned, and how much effort will be put into the learning process.
6. The practices and activities in which people engage while learning shape what is learned.
7. Learning is enhanced through socially supported interactions.

Principles of Instruction for Understanding*

Teaching for conceptual understanding in advanced mathematics and science courses:

1. Maintains students’ focus on the central organizing themes and underlying concepts of the discipline.
2. Is based on careful consideration of what students already know, their ideas and ways of understanding the world, and the patterns of practice they bring into the classroom.
3. Focuses on detecting, making visible, and addressing students’ often fragile, underdeveloped understandings and misconceptions.
4. Reflects an understanding of differences in students’ interests, motivations, preferences, knowledge, and abilities.
5. Is designed to provide the appropriate degree of explicitness for the situation and the abilities of the learners.
6. Recognizes students’ preferences for and varying abilities to process different symbol systems, such as language (written and spoken), images, and numerical representations, by employing multiple representations during instruction.
7. Engages students in worthwhile tasks that provide access to powerful mathematical and scientific ideas and practices; moves students to see past the surface features of problems to the deeper, more fundamental principles; and develops their conceptual understanding.
8. Structures learning environments in which students can work collaboratively to gain experience in using the ways of thinking and speaking used by experts in the discipline.
9. Orchestrates classroom discourse so that students can make conjectures, present solutions, and argue about the validity of claims, thus helping them explore old understandings in new ways, reveal misconceptions, and generalize and transfer their learning to new problems or more robust understandings.
10. Provides explicit instruction in metacognition as part of teaching in the discipline.
11. Uses various kinds of formal and informal formative assessments to monitor students’ understanding and target instruction effectively.
12. Creates expectations and social norms for the classroom that allow students to experience success and develop confidence in their abilities to learn.

*Source: Committee on Programs for Advanced Study of Mathematics and Science in American High Schools
In general, we can say that people learn well when:

**What They Learn**
1. What they learn is personally meaningful; they feel a need to learn it.
2. What they learn is challenging and they accept the challenge.
3. What they learn is appropriate for their developmental level.

**How They Learn**
4. They can learn in their own way and have some degree of choice and control.
5. They use what they already know as they construct new knowledge.
6. They have opportunities for social interaction.
7. They get helpful feedback.
8. They acquire and use strategies.

**The Setting in Which They Learn**
9. They experience a positive emotional climate.
10. Their environment supports the intended learning.

Best Design for Learning – An Inductive Exercise

1. Think back to your many prior experiences with well-designed learning, both in and out of school. What was the most well-designed learning experience you have ever encountered as a learner? What features of the design - not the teacher’s style or your interests - made the learning so engaging and effective? (Design elements include: challenges posed, sequence of activities, resources provided, assignments, assessments, groupings, teacher’s role, etc.).
   Briefly describe the design, below:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. In sharing your recollections and analyses with your colleagues, build a list of generalizations that follow from the accounts. What do well-designed learning experiences have in common? In other words, what must be built in “by design” for any learning experience to be maximally effective and engaging for students?

The best designs for learning...

• ______________________________________________________________________
• ______________________________________________________________________
• ______________________________________________________________________
• ______________________________________________________________________
• ______________________________________________________________________
• ______________________________________________________________________
• ______________________________________________________________________
• ______________________________________________________________________
Identifying School-wide Principles of Learning

Goal
An agreed-upon set of Principles of Learning for the school

Intent
Since the Learning Principles reflect research and best practice, they serve to guide curriculum planning, instruction and assessment. They provide a common language for conversations about teaching and learning, and function as criteria for a variety of school actions, (e.g., textbook selection, classroom observations).

Process
In order to build understanding and ownership, school staff should be actively involved in the process of identifying the shared Principles of Learning. One such process is outlined below:

Step 1 – Discuss the goal and intent of agreeing on a common set of Principles of Learning for the school.

Step 2 – Engage staff in the “Best Learning” exercise. Collect and compile a draft set of responses. (Note: Parents and students could also be involved in this exercise.)

Step 3 – Circulate the draft list of responses to the “Best Learning” exercise to staff groups (e.g., grade level teams, Departments, Division levels, etc.) for their review and recommendations. Questions for consideration by the groups:

- Does the list reflect all the important Principles of Learning?
- Are the principles clearly stated and understandable?
- What does each principle imply for our work? Would some established practices need to be changed to better align with a stated principle?

Note: Additional examples of developed Learning Principles can also be reviewed at this time.

Step 4 – Each group submits suggested edits, additions, deletions, etc. to a designated team, which reviews the recommendations of the various groups and complies a synthesized and edited list.

Step 5 – The edited list of Learning Principles is circulated for a second review. (If major edits are proposed, the process continues until a generally-agreed upon set of Learning Principles is produced.)

Step 6 – The final list of Learning Principles is presented for staff review and sign off. By signing, staff members commit to accept, and agree to, act on the agreed-upon Principles of Learning.

Note: The Learning Principles should not be “set in stone.” They can (and should) be periodically revisited and refined to reflect emerging research and staff insights from their application.
## Schooling by Design: A Gap Analysis and Planning Tool

<table>
<thead>
<tr>
<th>Stage 1 – Desired Results</th>
<th>Stage 2 – Assessment</th>
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<tbody>
<tr>
<td>Identify observable indicators of success for _____________________________________</td>
<td>Identify needed changes.</td>
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### Desired Results

1. Learning activities clearly address established content standards.
2. The textbook is one resource among many used in teaching to the standards.
3. Instruction and assessment are focused on exploring “big ideas” and essential questions.
4. Student understanding of the “big ideas” in content standards is assessed through complex performance tasks using the six facets.
5. Teacher evaluations of student products/performances are based upon known criteria, performance standards, and models.
6. The students regularly self-assess their work based on the established criteria.
7. Teachers regularly pose open-ended questions with no obvious right answer. They are designed to direct and deepen inquiry and understanding.
8. Students are given regular opportunities to rethink and revise their work based on feedback from on-going (formative) assessments.

### Needed Changes

1. Learning activities do not typically address established content standards.
2. Textbooks serve as the primary teaching resource. (The textbook functions as the syllabus.)
3. Instruction consists primarily of content coverage, doing activities, and/or preparation for high-stakes, standardized tests.
4. Assessment consists primarily of quizzes and tests of factual knowledge and discrete skills.
5. The students do not know (i.e., cannot explain) how their work will be evaluated. They are typically not shown models of exemplary work.
6. Students do not regularly self-assess their work according to established criteria.
7. Most teacher questions are convergent, leading questions, pointing toward the knowledge students are expected to learn.
8. Formative assessments are not routinely used. Students are rarely given opportunities to rethink and revise their work based on specific feedback.
**Assessing Staff: Ready? Willing? Able?**

*Directions:* Place your best estimates of the number or percentage of staff who fall into each of the 9 categories below. What patterns are apparent? Consider the different actions/strategies you could implement for each group.

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<thead>
<tr>
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<th>Do they get it?</th>
<th>Are they willing?</th>
<th>Are they able?</th>
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<tbody>
<tr>
<td><strong>Yes</strong></td>
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<td><strong>Not Yet</strong></td>
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<tr>
<td><strong>Not Likely</strong></td>
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What actions and interventions will be taken to:

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<th>develop understanding?</th>
<th>engage interest and commitment?</th>
<th>develop the needed skill(s)?</th>
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<tbody>
<tr>
<td><strong>Yes</strong></td>
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<td><strong>Not Yet</strong></td>
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<td><strong>Not Likely</strong></td>
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Identifying Experience, Expertise and Passion

This activity asks you to make connections between yourself, your place in the school and the school’s vision.

PART 1 – BRAINSTORMING (individual)

1. Use the chart below to help you think about what you care deeply about and:
   • know lots about or are good at (your “expertise”)
   • have had opportunities to do before (your “experience”)
   • believe is very important, want to focus on and learn even more about (your “passion”)

<table>
<thead>
<tr>
<th>My expertise (what I know lots about or am good at)</th>
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<th>My experience (what I have had opportunities to do before)</th>
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</table>

<table>
<thead>
<tr>
<th>My passion (what I believe is very important, want to focus on and learn even more about)</th>
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</table>

2. Review all of your lists and highlight the expertise, experience and passions that you believe would most support the school and help it to reach its vision.
Identifying Experience, Expertise and Passion

*(continued)*

**PART 2 – POST-ITS (individual)**

1. Write each of your highlighted areas of expertise on a ___ Post-It.

2. Write each of your highlighted areas of experience on a ___ Post-It.

3. Write each of your highlighted passions on a ___ Post-It.

4. Finally, write your name on the back of each Post-It.

5. Place your post-its where they most seem to belong on your school’s Team Resources Chart (Experience, Experience and Passion).

<table>
<thead>
<tr>
<th>TEAM RESOURCES</th>
<th>SCHOOL VISION/MISSION</th>
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<tr>
<td>Expertise</td>
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<tr>
<td>Experience</td>
<td><em>insert school Vision/Mission here</em></td>
</tr>
<tr>
<td>Passion</td>
<td></td>
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</tbody>
</table>
Identifying Experience, Expertise and Passion

PART 3 – EXPLORING OUR RESOURCES *(in cross-role triads within your team)*

Examine the completed Team Resources Chart and consider ways of considering your school’s vision and mission, and of maximizing the experience, expertise, and passions of team members by taking the following steps:

1. Identify and analyze connections to the school’s vision and mission:
   • How do your team’s combined resources support the school’s vision and mission?
   • Is there any part of the vision and mission that are unsupported by the team’s current list of resources?

2. Brainstorm possible actions:
   • Pick two of these Post-Its to look at individually, or two combinations of the Post-Its notes
   • Think about who would be involved or what would have to happen for each of the actions that you have listed to actually take place. Prioritize your list based on how “do-able” each action is (which of these are most possible?)
   • Look at the 3-5 actions that are now on top of your list, and re-order them so that the first one is the one you believe will have the strongest positive effect on the vision (which will be most effective?)

Note: There will have to be an opportunity for the team to get together and each of the triads to share their thinking – and some kind of synthesis opportunity.
### Assessing Conditions for UBD Reform: Force Field Analysis

(Examples)

<table>
<thead>
<tr>
<th>Ass (+)</th>
<th>Curry</th>
<th>Ass</th>
<th>Ind</th>
<th>Prof</th>
<th>Res</th>
<th>Pol</th>
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<tr>
<td>Assist</td>
<td>curriculum mapping has been completed in all content areas</td>
<td>some teachers have experience using performance tasks and rubrics</td>
<td>widespread use of the writing process w/ peer editing and revision</td>
<td>several teachers involved in a pilot “action research” project through RESA</td>
<td>several sources of available grants to support reform activities (e.g., Goals 2000)</td>
<td>State requires districts to develop “multiple measures” to assess content standards at the local level</td>
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<td>adoption of new “problem-based” mathematics series emphasizing conceptual understanding</td>
<td>the use of portfolios in elementary language arts and secondary visual arts</td>
<td>the use of the five E’s as an instructional framework for science teaching</td>
<td>voluntary study group being formed at one elementary school</td>
<td>installation of Internet-ready computers in every school</td>
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<td></td>
<td>no “quality control” process in place for local curriculum</td>
<td>Board of Ed. and community fixate on state test scores (Other evidence isn’t valued.) “scantron-type” testing is predominant in our high school</td>
<td>many cases of “activity-based” teaching at the elementary level</td>
<td>history of “one shot” events on inservice days a “coverage” orientation at the secondary level</td>
<td>no budget allocation for summer design work teacher appraisal process is not “results” focused</td>
<td>No incentives for individuals and teams to experiment, share ideas, and critique work collaboratively</td>
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<tr>
<td>Resist</td>
<td>no experience with peer review</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No demands that designs be public</td>
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</tbody>
</table>
Assessing Conditions for UBD Reform: Force Field Analysis

Use the following matrix to assess those forces that support planned reforms and those that resist.

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Assessment</th>
<th>Instruction</th>
<th>Professional Development</th>
<th>Resources</th>
<th>Policy</th>
<th>Other:</th>
</tr>
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<tr>
<td>Resist</td>
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</table>
Behavior over Time Graphs

A behavior over time graph (or BOTG) is a simple time graph that shows a pattern of change over time – it shows how something increases and decreases as time passes. The horizontal axis on the graph always represents time. It can be in any units that fit the behavior: seconds, days, years, etc.

The vertical axis represents the variable in question, a quantity that can increase or decrease with time. It can be either “hard” or “soft.”

For example, hard variables might be points scored in a game, dollars in the bank, or miles traveled. Soft variables could be a person’s happiness or courage, a team’s morale, the cleanliness of a room, or the excitement of a story.

Following are some examples of such graphs:

1. Create a behavior over time graph (BOTG) for “the influence of technology in education” going as far back in time as you can using as much data as you can collectively summon.

2. Label your graph. You will be telling the story of your graph to the rest of the group.
Characteristics of the Best Learning Designs...

*(based on surveys of K-16 faculty throughout the nation)*

**Expectations**  *the best learning designs...*
- provide clear learning goals and performance expectations.
- cast learning goals in terms of genuine/meaningful performance.
- frame the work around genuine questions & meaningful challenges.
- show models/exemplars of expected performance.

**Instruction**  *in the best learning designs...*
- the teacher serves as a facilitator/coach to support the learner.
- targeted instruction and relevant resources are provided to “equip” students for expected performance.
- the textbook serves as one resource among many (i.e., text is resource, not syllabus).
- the teacher “uncovers” important ideas/processes by exploring essential questions and genuine applications of knowledge and skills.

**Learning Activities**  *in the best learning designs...*
- individual differences (e.g., learning styles, skill levels, interests) are accommodated through a variety of activities/methods.
- there is variety in work, methods and students have some choice (e.g., opportunities for both group and individual work).
- learning is active/experiential to help students “construct meaning”.
- cycles of *model-try-feedback-refine* anchor the learning

**Assessment**  *in the best learning designs...*
- there is no mystery as to performance goals or standards.
- diagnostic assessments check for prior knowledge, skill level, and misconceptions.
- students demonstrate their understanding through “real world” applications (i.e., genuine use of knowledge and skills, tangible product, target audience).
- assessment methods are matched to achievement targets.
- on-going, timely, and descriptive feedback is provided.
- learners have opportunities for trial and error, reflection and revision.
- self-assessment is expected.

**Sequence & Coherence**  *the best learning designs...*
- start with a “hook”, immerse the learner in a genuine problem/issue/challenge.
- move back and forth from whole to part, with increasing complexity.
- scaffold learning in “do-able” increments.
- teach as needed; don’t over-teach all of the “basics” first.
- revisit ideas – have learners rethink and revise earlier ideas/work.
- are flexible (e.g., respond to student needs; revise plan to achieve goals).
### Analyzing Current Practices Against Best Learning Designs

3 = consistently  2 = sometimes  1 = rarely/never

<table>
<thead>
<tr>
<th>Expectations</th>
<th>To what extent does my/our designs...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• provide clear learning goals and performance expectations (i.e., no mystery for learners)?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• cast learning goals in terms of genuine/meaningful performance?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• frame the work around genuine questions &amp; meaningful challenges?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• show models/exemplars of expected performance?</td>
<td>[ ] [ ] [ ]</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Instruction</th>
<th>To what extent does my/our teaching...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• provide targeted instruction and relevant resources to “equip” students for expected performance?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• use the textbook as one resource among many (i.e., the textbook is a resource, not the syllabus)?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• help “uncover” important ideas/processes by exploring essential questions?</td>
<td>[ ] [ ] [ ]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Activities</th>
<th>To what extent does my/our learning activities...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• address individual differences (e.g., learning styles, skill levels, interests) through a variety of activities/methods (vs. “one size fits all”)?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• provide variety in work, methods and students have some choice (e.g., opportunities for both group and individual work)?</td>
<td>[ ] [ ] [ ]</td>
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<tr>
<td>• include inquiry/experiential opportunities to help students “make meaning” for themselves?</td>
<td>[ ] [ ] [ ]</td>
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<tr>
<td>• incorporate cycles of model-try-feedback-refine learning experiences?</td>
<td>[ ] [ ] [ ]</td>
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</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>To what extent does my/our assessments...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• provide appropriate measures of all of the learning goals?</td>
<td>[ ] [ ] [ ]</td>
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<tr>
<td>• ask students to demonstrate their understanding through “real world” applications?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• provide on-going, timely, and descriptive feedback to learners?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• include opportunities for trial and error, reflection and revision?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• allow self-assessment by the learners?</td>
<td>[ ] [ ] [ ]</td>
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</table>

<table>
<thead>
<tr>
<th>Sequence &amp; Coherence</th>
<th>To what extent does my/our designs...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• include pre-assessments to check for prior knowledge, skill level, and misconceptions?</td>
<td>[ ] [ ] [ ]</td>
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<tr>
<td>• begin with a “hook” (e.g., immerse the learner in a genuine problem/issue/challenge)?</td>
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<tr>
<td>• move back and forth from whole to part, with increasing complexity?</td>
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<tr>
<td>• scaffold learning in “do-able” increments?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• revisit important ideas/questions and allow learners to rethink and revise earlier ideas/work?</td>
<td>[ ] [ ] [ ]</td>
</tr>
<tr>
<td>• remain flexible (e.g., to respond to student needs; allow revisions to achieve goals)?</td>
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</table>
“Yes, but...” – Responding to Predictable Concerns

Advocates for Understanding by Design often encounter predictable concerns (“yes, buts...”) from colleagues. The following exercise is designed to help you prepare thoughtful responses to likely objections.

Part 1 - Select one of the following concerns (or add one of your own) and generate ideas for responding to that concern. Record your ideas in the box below.

Part 2 - Meet with others who have selected the same concern and share responses.

I (we) would like to teach and assess for understanding, but...

1. We are expected to teach to state/district standards and benchmarks.

2. This approach takes too much time. I (we) have too much content to cover.

3. We are being held accountable for student performance on superficial state tests.

4. I am a “skills” teacher, and students need to master the ‘basics’ first.

I (we) would like to design curriculum using the UbD framework, but...

5. This approach is too demanding. We couldn’t possibly do this for everything we teach.

6. It’s not my job to develop curriculum. Besides, we already have a textbook.

7. I don’t know how to do this kind of design work.

8. We already do this.

9. This approach takes away a teacher’s freedom/creativity.

10. Other: _____________________________________________

Your response:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
“Yes, but...” – Planning Sheet

Advocates for educational reforms often encounter predictable concerns (“yes, buts...”) from colleagues. The following exercise is designed to help you prepare thoughtful responses to likely objections.

**Part 1** - Select one of the following concerns (or add one of your own) and generate ideas for responding to that concern. Record your ideas in the box below.

**Part 2** - Meet with others who have selected the same concern and share responses.

Yes, but....  ___________________________________________

Your response: __________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
## Stage 1 – Desired Results

**Goal(s):**
- What is our vision?  
- What “needs” do learning results/data reveal?  
- What improvements are needed?  
- What do we seek to accomplish as a result of this initiative?

**Understanding(s):**
- What understandings and attitudes do various constituencies (e.g., teachers, administrators, parents, students, and policy makers) need for these goals to be attained?

**Knowledge & Skills:**
- What knowledge and skill will teachers, administrators, policy makers, parents, and students need for this vision to become a reality?

**Essential Question(s):**
- What essential questions (e.g., about teaching, learning, results, school structure, change process) should guide our actions?

## Stage 2 – Assessment Evidence

**Evidence of Impact:**
- What evidence of student learning/performance will count as evidence of success?  
- What are the key indicators of success & progress?

**Sources of Evidence:**
- How will we obtain the needed evidence?  
- By what measures will we assess learning/performance?

**Other Evidence:**
- What other data (e.g., on organizational actions and outcomes) should be collected?

**By what measures will we gauge the effects of our short and long-term actions?**

## Stage 3 – Action Plan

What short- and long-term actions will we take to achieve our goals?  
What strategies will help us achieve the desired results?  
(Note: A more detailed action plan is developed here.)
### Backward Design Plan for an Elementary School Improvement Goal

#### Stage 1 – Desired Results

**Goal(s):**
- Reduce the amount of whole-group instruction and increase use of appropriate differentiated strategies.
- Increase the use of pre-assessments to diagnose students’ readiness levels and guide differentiation.
- Increase the achievement (annual growth) of all student sub-groups in reading and mathematics.

**Understandings (for teachers):**
- Learners differ in their readiness (background knowledge, skills and experiences), learner profile (culture, gender, and preferred style) and interests.
- Learning is enhanced when these differences are acknowledged and addressed.
- Diagnostic (pre-) assessments are essential to reveal differences in readiness, profiles, and interests to guide differentiation.
- Respectful tasks engage learners with content standards in ways that appropriately challenge them.

**Essential Questions (for staff exploration):**
- Why should we differentiate our instruction?
- What does effective differentiation look like in the classroom?
- How do we decide what differentiation is needed?
- How can we make differentiation feasible with large classes?
- Is differentiation compatible with a standards-based accountability system?

**Knowledge:**  
**Staff will know...**
- basic principles and practices of differentiation
- the ways in which students differ
- the content standards and benchmarks that all students are expected to learn

**Skills:**  
**Staff will be able to..**
- apply basic differentiation strategies – tiered lessons, flexible groupings, scaffolded assignments, and giving appropriate choices
- use diagnostic (pre-) assessments effectively
- manage a differentiated classroom

#### Stage 2 – Assessment Evidence

**Impact Evidence:**
**Classroom observations will find:**
- decreased use of whole-group instruction
- increased use of pre-assessments and appropriate differentiated instruction
- effective management of the class
- increase in student engagement in learning

**Student assessment data will show:**
- Increased achievement by sub-groups in reading and mathematics.

**Indirect Evidence:**
- Lesson plans include plan for differentiation.
- Teachers can explain how their instruction is responsive to student learning needs based on assessment data.
- Staff surveys identifying needs for future professional development.

#### Stage 3 – Action Plan

- Purchase copies of Differentiated Instruction and Understanding by Design (ASCD, 2006) for all teaching staff, and encourage them to read the book during the summer.
- Use the pre-school professional days and our two in-service days for book discussion, exploration of essential questions, and staff workshops on differentiation strategies conducted by district specialists.
- Engage staff in developing a set of observable indicators of effective differentiated instruction in the classroom.
- Use the agreed-upon set of observable indicators for “walk through” classroom visits; provide feedback to staff.
- Encourage grade level teams in sharing lesson plans that incorporate differentiated strategies.
- Use one faculty meeting a month for exploring a particular DI strategy (determined by staff needs assessment).
- Use regularly scheduled grade-level meetings to examine assessment data (from district benchmark assessments and state test results) and make plans for improving sub-group student performance. (Note: May involve some regrouping of students across classrooms.)
### Stage 1 – Desired Results

**Goal(s):**

**Understanding(s):**

**Essential Question(s):**

**Knowledge & Skills:**

### Stage 2 – Assessment Evidence

**Evidence of Impact:**

**Sources of Evidence:**

### Stage 3 – Action Plan