Reflection, Dialogue, and Organization
as part of Taking Initiative in
Building a Professional Development Learning Community
of researchers working with educators on science education that emphasizes inquiry and problem-solving in an urban watershed context

led by
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Overall goal of session: To promote group and personal practices that catalyze, facilitate, and support your efforts to take initiative and generate constructive change in urban science education.

Themes/Take-homes
Reflection and Dialogue
Taking stock to deal with complexity: At the close of every activity/class/event identify at least one appreciation (thing that went well) and one thing to be developed further.

Listening (more than speaking) to voices of multiple players, with diverse dispositions and skills, from a range of situations.

Personal clarifying dialogue, e.g., through free-writing and journaling. We need to clear mental space so that thoughts about an issue in question can emerge that had been below the surface of our attention.

Dialoguing note-taking on texts and presentations [I put these in brackets] so that at the end you have digested the text/presentation enough to say: What was argued? What was not? Where could it have been taken further? Where does all this connect with my efforts?

Organization
Notebook to carry with you at all times for notes, reflection, and journaling.

Professional and Personal Development Workbook—organized binder and computer folders/directories.
　　　Think of yourself as a collaborator with yourself in the future. If you don't keep your materials organized now and include your reflection and digestion, you'd have to spend a lot more time then to get up to steam on what you were thinking in relation to what others were saying. Think of yourself as a collaborator with others now. If you reflect and dialogue as you go, you will prepare yourself to take initiative and generate constructive change.

Clippings and E-clippings: To keep up with current developments—and get you into the habit of this for your lifelong learning—look for articles related to educational change in newspapers, magazines, journals, and websites. The education column in NY Times on Wednesdays is often good.

Professional Development Learning Community
See National Science Education Standards on Professional Development for Teachers.

Do not assume that this will always be laid on for you (as WISP is doing), but instead plan/prepare so you can take initiative.

Guided (topic-based) freewriting

In a freewriting exercise, you should not take your pen off the paper. Keep writing even if you find yourself stating over and over again, "I don't know what to say." What you write won't be seen by anyone else, so don't go back to tidy up sentences, grammar, spelling. You will probably diverge from the topic, at least for a time while you acknowledge other preoccupations. That's OK—it's one of the purposes of the exercise to address then clear away distractions. However, if you keep writing for seven-ten minutes, you should expose some thoughts about the topic that had been below the surface of your attention—that's another of the aims of the exercise. Reference: Elbow, P. 1981. <u>Writing with power</u>. New York: Oxford U. P.
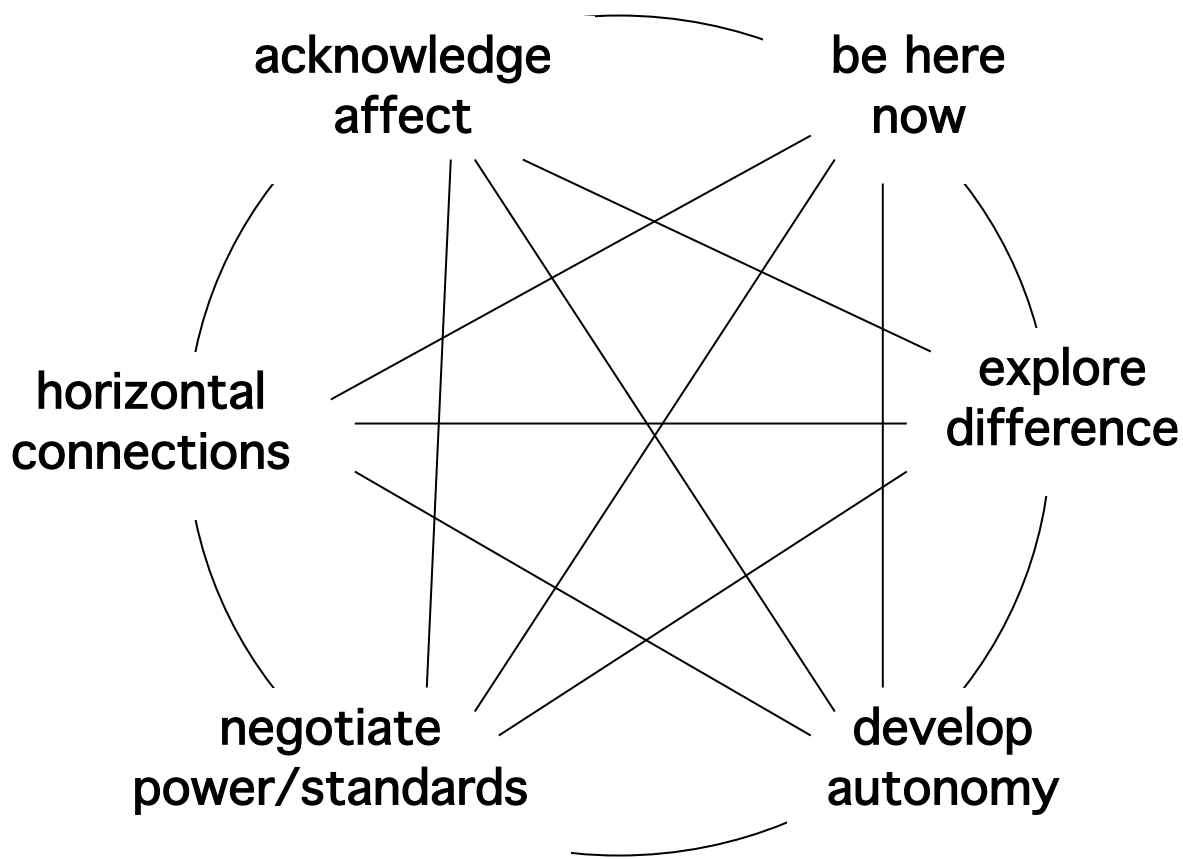
Continue where this sentence leads off:
"Peter has challenged us to provide a plan for inquiring into the question of how non-teachers can learn to become competent and valued contributors to middle school environmental science education. The thoughts, feelings, and/or experiences about inquiry, good learning situations, and/or middle school education that come to mind include..."

Professional development in education requires much more than learning content and procedures. You need to develop your capacity to

take initiative in and through relationships

acknowledge
affect

be here
now

horizontal
connections

explore
difference

negotiate
power/standards

develop
autonomy

Source: Taylor, P. J. (2002). "We know more than we are, at first, prepared to acknowledge: Journeying to develop critical thinking." Pedagogy, Pluralism, and Practice under review.
        http://www.faculty.umb.edu/peter_taylor/journey.html

Reflection and collaboration themes from
Science Education Standards for Professional Development for Teachers

extracted from National Research Council (1995). <u>National Science Education Standards</u>. Washington, DC: National Academy Press. (Available on line at http://www.nap.edu/bookstore/ or 800-624-6242)

Highly recommended: Read the full text, which gives the rationale and examples to flesh out these standards. Math. teachers are encouraged to review the National Council of Teachers of Mathematics (2000). <u>Principles and Standards for School Mathematics</u>. (Available on line at http://www.nctm.org/standards/buyonline.htm or 800-235-7566)

A. Professional development for teachers of science requires learning essential science content through the perspectives and methods of inquiry.

Science learning experiences for teachers must
v. Incorporate ongoing reflection on the process and outcomes of understanding science through inquiry.
vi. Encourage and support teachers in efforts to collaborate.

C. Professional development for teachers of science requires building understanding and ability for lifelong learning.

Professional development activities must:
i. Provide regular, frequent opportunities for individual and collegial examination and reflection on classroom and institutional practice.
ii. Provide opportunities for teachers to receive feedback about their teaching and to understand, analyze, and apply that feedback to improve their practice.
iii. Provide opportunities for teachers to learn and use various tools and techniques for self-reflection and collegial reflection, such as peer coaching, portfolios, and journals.
iv. Support the sharing of teacher expertise by preparing and using mentors, teacher advisers, coaches, lead teachers, and resource teachers to provide professional development opportunities.

D. Professional development programs for teachers of science must be coherent and integrated.

Quality preservice and inservice programs are characterized by:
iii. Options that recognize the developmental nature of teacher professional growth and individual and group interests, as well as the needs of teachers who have varying degrees of experience, professional expertise, and proficiency.
iv. Collaboration among the people involved in programs, including teachers, teacher educators, teacher unions, scientists, administrators, policy makers, members of professional and scientific organizations, parents, and business people, with clear respect for the perspectives and expertise of each.
v. Continuous program assessment that captures the perspectives of all those involved, uses a variety of strategies, focuses on the process and effects of the program, and feeds directly into program improvement and evaluation.

Premises of a Professional Development Learning Community

1. We know more than we are able, at first, to acknowledge.

2. There is insight in every response.

3. Our initial conclusions may change, especially about what you, teachers, your students, and your schools are capable of—Be open for surprises.

4. **Professional Development** is like **a journey** into unknown areas or allowing you to see familiar areas in a fresh light. It involves risk; requires support; creates more experiences than can be integrated at first sight; yields personal changes. Thus the need for PD to take place in a Learning Community.

5. Small group work: When a person is heard, they can better hear others and hear themselves. This causes us to examine decisions made in advance about what the other people are like, what they are and are not capable of. The aim of working in small groups is to keep us listening actively to each other, foster mutual respect, and elicit more of our insight.

6. What we come out with should be larger and more durable than what any one person came in with; the more so, the more voices that are brought out and energies mobilized by the process. In particular, the experience should result in your being engaged in carrying out/carrying on the plans you develop.

7. Inspired by the <u>National Science Education Standards,</u> the course will promote sound, considered standards for
    Professional development for teachers
    Math/Science teaching
    Assessment of student progress
    Curricular frameworks and content
    Engagement with the larger system shaping and supporting science education.

8. It is expected and understandable that you will choose at some point(s) to downplay sound standards and respond instead to pressures to focus on the test-driven content standards.

9. There is too much in the national and state standards, so you should select a subset of the standards (or components of standards, or other lessons from sessions) that you want to focus on at any time. (You should be prepared, however, to adjust your focus/subset as time goes on.)

10. There is too little in the national and state science/math. education standards, in the sense of not telling you what to do in your lesson planning and classes. A learning community should enable you to ask for help and support during WISP in making the translations of standards into classroom practice. You should also be able to develop relationships that will enable you keep getting help and support when the course is over.

11. We can approach WISP as a work-in-progress. Instead of harboring criticisms to submit after the fact, we can find opportunities to affirm what is working well and suggest directions for further development.

Others (to be added as they emerge and we articulate them)....

The Rs of the reflective practice
(personal, professional, and intellectual development)

journeying inquirer

focusing in — *opening out*

Reading

Review

Reasoning w/ respect to evidence & alternatives

Relationship w/ oneself (moving towards autonomy)

Reflection & metacognition

wRiting

Relationships w/ peers & allies (dialogue & collaboration)

Risk & experiment

Rearrange, adapt & create

being Read, heard, & Reviewed

Relationships w/ authority (negotiate power & standards)

Revision (incl. dialogue around written work)

Research & evaluation (learning from the work of others & your own)

Respect (explore difference)

Responsibility (concern w/ aims, means & consequences)

Recursion & practice (address same concern from many angles & in variety of settings)

Reevaluation (of emotions at root of responses) so as to better take initiative

Reconstruction (personal/organizational/social change)

reflective practitioner
wholehearted, responsible engagement with others
"Head, Heart, Hands & Human Connection"

Suggested use of chart: At the end of each 3 months for as many Rs as you are ready to, provide an example and your current sense of the R's meaning(s). Indicate cross-connections among examples and Rs.
Expect the later terms to have more meaning as you progress through the WISP program.