

Transcribed 2-24-07  
28 responses

**High School to Higher Education Science Transitions Summit II  
Evaluation  
February 23, 2007 Douglas, Wyoming**

Your comments will help us evaluate the success of this meeting and plan follow ups.  
Please be candid and complete in your responses. No names please.

1. On a scale from 1-10 with ten being high, rate the value of this meeting to you. \_\_\_\_

*average rating = 8.2*

*10 = 6, 21%*

*9 = 6, 21%*

*8 = 13, 46%*

*7 = 2, < 1%*

*no response = 1. < 1%*

For any response lower than five (5), please use the space below to explain.

*8 – access to more of the shared “inquiry would have been more beneficial – beyond that no complaints – excellent.*

2. We examined student work in the context of “science as inquiry.” What insights did you gain from this work? Please consider teacher expectations, student learning, student abilities, and other issues important to you.

*Teacher expectations should always be explicit and of a high level. Student learning is evident or not evident in student responses.*

*Others besides myself struggle with how to do/incorporate inquiry.*

*The quality of work at the high school level.*

*Inquiry has many different forms, although most of us first focus on an open-ended laboratory/hands on experience.*

*That the state mandated BOE’s developed by consortium are not inquiry based – also learned that communication ability is high.*

*Teachers have high expectations and are dealing with students with various abilities and experiences.*

*I was well impressed with the level of knowledge of inquiry methods that pervades the education structure throughout the school system.*

*What occurs at college isn’t that much different from what I expect at the high school level.*

*Students are the same no matter where you are & teaching problems are the same at middle school, high school, & college.*

*The interest is growing at all levels – new respect for constraints at different levels.*

*All of our students have similar issues with writing and communicating. Very surprised to hear UW is moving toward original thinking and not just regurgitating (sic)*

*Each level teaches in a different way but the goal of inquiry seems to be a constant.*

*Teacher expectations are adequate.*

*From the 1 example that I saw, h.s. students seem to be doing productive & high level work. Why are these students in my college courses. Is it connecting content or do community college students not take these classes?*

*Retention in students;  
Coordination between levels*

*I enjoyed sharing my views about science teaching and listening to my colleagues' experiences with inquiry in their classroom.*

*Teachers have high expectations for students and themselves. Students vary in learning and abilities yet students are students across the levels w/strengths and weaknesses.*

*High schools are already doing inquiry based learning, retention may be a large issue.*

*Across the board, most h.s. student do not summarize, reflect well. We need to teach these skills.*

*How much emphasis is placed on science as inquiry from 8<sup>th</sup> grade on – interesting that students don't carry inquiry over to college courses.*

*Expectations differ – big disconnect between h.s./c.c./UW*

*There are still some important misperceptions between teachers at different levels – state standards, etc.*

*Inquiry means different things to different people. I think there should be some consistency across the board.*

*Teachers don't expect too much, but we do need to guide students who are not familiar with the inquiry method. At h.s. level students do not know how to analyze info –but we're working on this.*

*Teacher expectations are high, student abilities vary and student learning cannot be gauged.*

*The expectations of students coming in @ the college level is not totally based on content. They came in as "learners" and know the process then they can work w/ them.*

*I learned that in different ways we are all constrained in our attempts to teach science as enquiry. Our expectations are high but student learning is constrained by not just "legislative" but social conditions.*

3. If there were another high school to higher education summit, what kind of activities for faculty would lead to improved science learning for students? Please focus your comments on *student learning*.

*There is so much "edu speak" going on we need clarification on the words we use. What one person identifies as inquiry could be considerably different from others. Inquiry, critical thinking, science literacy.*

*More, specific examples of specific activities and how they are structured to guide student learning.*

*Share more about transitions – what do we know about the level above or below where we teach?*

*Identifying core concepts, science skills, processes – for each: what are students able to do/what do students know/how can students expand on what they now & can do?*

*Have more articulation among all schools – have more consistency across the board. Have all participants develop inquiry based assessments. What can we as teachers do in the classroom to improve our students inquiry skills.*

*Sharing of activities & other ideas.*

*Bring other areas into the conversation education focused on biology. Then include chemistry physics, and ENGLISH (conversations).*

*Maybe a focus session specifically on writing questions, or on writing hypotheses, etc....*

*Ask some students to come or at least observe this process. Ask their opinion. Invite college & high school students at all grade levels.*

*Develop collaborate research projects across all levels.*

*This is the “big” learning. It is the focus of PAWS and has implication outside of academics. Possible theme – Reading, writing and math applications for improving student communication in science.*

*How do we help students learn to be critical thinkers. Articulation – hs – cc- UW*

*A sharing of teacher designs for inquiry activities – what are the expectations as well as the products.*

*Examples.*

*Demonstration of inquiry learning.*

*Retention.*

*Integration among subjects.*

*Doing a more in depth analysis of students’ work.*

*At the beginning of the day, have a short “inquiry workshop” so that we are all on the same page of what exactly inquiry is.*

*Specific action items to incorporate verbal, oral & quantitative communication into inquiry-based learning*

*Discuss the different types of inquiry – guided, structured, open.*

*Examine STDs. At all levels – apparently UW has no STDs.*

*What does cognition research suggest about what students capable of at different levels – K-20?*

*Have university instructors bring examples of what they consider “inquiry” lessons.*

*How do you teach writing a good scientific question (use activities that will teach this) ... do this for each stop of science process.*

*See 4a (More flexibility for schools in deciding teaching goals.)*

*How to encourage retention of information and applications “out of context.”*

4. This two-part question focuses on future science summit meetings:

- a) For you, what is the key issue concerning coordination of the teaching and learning of biology from high school to college?

*Having students to think and problem solve is a key issue for me.*

*How do we best teach high school students to be successful in college. What specifically does it take.*

*How do we engage the students to retain the process learning which occurs in high school.*

*Keeping the secondary schools-community colleges-UW lines of communication open.*

*Communication among all parties from state level to local level.*

*Articulation of processes of inquiry.*

*Having a consistent set of marching orders from top to bottom (e.g., science standards) of Wyo Ed.*

*Most students take biology as sophomores & then take it as college freshmen. This is a long time to remember anything.*

*Communication & thinking skills.*

*The level at which they (students) communicate – seems to be a huge gap of what is acceptable at each level.*

*How do we affect change?*

*Communication.*

*Unsure what standards & outcomes are in high school.*

*Critical thinking*

*Data analysis.*

*Testing*

*Standards.*

*Communication and teamwork.*

*Articulation of specific student skills/content needed for success at university.*

*Communication is essential. We need more conversation about articulation.*

*Process.*

*UW has a different set of expectations of h.s. students & little understanding of science standards.*

Communication/*What are expectations at each level/agree to definitions of terms.*

*Educating university instructors of what high schools are required to teach and have them provide examples or ideas or how those requirements/standards can be adapted to better prepare secondary students for college.*

*What does a college lab report “look” like? What should we be teaching to get it there?*

*More flexibility for schools in deciding teaching goals.*

*Sharing of the good ideas that other teachers have. What info do others have that would be a useful tool for other teachers.*

*We all need to know precise expectations and “standards” achieved or achievable at the various levels of K-16*

b) *How can future articulation meetings best address the issue you identified?*

*What is thinking?*

*How can I teach my students these skills and how can I tell that they are thinking.*

*By colleges defining specifically what they want from students.*

*Roundtables work well – the mix of different levels at a table is great.*

*Are there “common” labs or inquiry exercises? Could we identify them and then talk about differences/similarities in the exercises, what are the student expectations, extensions. Could we do a “homework” to bring exercises from 2-4 predetermined labs/concepts.*

*Coming up with k – college plan.*

*Probably a subcommittee, [indistinguishable] at a high administrative level, to re-write the standards from the perspective of education not politics.*

*Work to put capstone high school senior level classes that include & integrate physics, chemistry & biology.*

*Working together to insure standard (sic) address these issues.*

*Some focus on skills and strategies that will help our students have more success when they transition to college.*

*Communication is the key. Not only with each other, but with those in power.*

*Continue the same.*

*Describe & discuss specifically [standards and outcomes in high school].*

*Assigning more time to some activities. Maybe analyzing 2 students’ work only.*

*“Pairing” a middle/high school and university educator to communicate thru the year and prepare for the meeting together.*

*Very similar to today's meeting. We need face-to-face time with others.*

*Look at examples of how to interweave content & inquiry.*

*UW & H.S. should identify expectations of students.*

*Readings for discussion?*

*Have high school teachers submit some lessons ahead of time and give the university instructors time to review them and make recommendations that can be discussed at the next meeting.*

*Bring examples of what you want to see in student work (the examples today were definitely not at that level).*

*Identify a few achievable goals.*

*Bring a few legislators! Let them listen to the problems facing the educators. We are well-meaning but we need to talk to the people who hold the power reins.*

5. Anything else we need to know? (please continue on the back, if you need space)

*So inquiry always attached to the scientific method. If so, what is this – is there a set method?*

*Does this group have any “moral” duty to try to influence state standards, state testing, Hathaway scholarships, etc. as these influence student instruction/student learning. Articulation with mathematics and language arts. Could we keep up these conversations via compressed video, even if it involves smaller “break out” groups with specific focus concepts.*

*Maybe we could host monthly WEN video presentations by master-inquiry teachers who present a lesson about teaching inquiry. One thing I haven't gotten to do in the last 16 years is to observe other teachers in their classrooms. I think that would be very valuable – if I were able to observe some good science teachers, once a year or so.*

*High school science standards are due up for revision within the next few years. Some one(s) from this group needs to get on the writing committee so the problems & ideas generated here can be considered for inclusion.*

*Another great job!*

*Starting a web page, etc. and more meetings are good ideas.*

*Concern: Whose fault – don't point fingers – continue to communicate!!!*

*This was great. Thanks.*

Thank you for completing this evaluation. Safe travels home!