

Lumina Foundation for Education Grantee Interim Narrative Report

Legal Name of Organization: Utah Board of Regents

Common Name of Organization: Utah Board of Regents

Lumina Foundation Issued Grant Number: 7396

Grant start date: July 1, 2011 **Grant end date:** May 31, 2013

Period covered by report: June 1, 2011 to May 31, 2012

Table of Contents

Progress on Goals, Activities and Timelines	1
Short-term Objectives	1
Deliverables	2
Major Changes.....	4
Evaluation	5
Communication.....	5
Learning.....	5
Sustainability	6
Financial Report.....	7
Appendix A: Learning Outcomes for Individual Disciplines.....	8
Physics.....	9
History.....	12
General Education Mathematics.....	14
Elementary Education	15
Appendix B: Minutes from Tuning Team Meetings.....	16
Physics.....	17
History.....	36
General Education Mathematics.....	52
Elementary Education	70
Appendix C: Report on TEAC/NCATE Meeting.....	98
Appendix D: Degree Qualifications Profiles Presentations	100
Appendix E: Evaluator Report.....	103
Appendix F: Communications.....	112
Appendix G: Participation with Other Groups	122

Progress on Goals, Activities and Timelines

Short-term objectives

1. Tune the proposed disciplines and develop sets of learning outcomes and competencies at the associate's, bachelor's, and master's levels (or at the GE completion level for GE mathematics).
 - a. Utah Physics Tuning Team. The physics team has worked this year to improve the learning outcomes and gain approval of all departments for the outcomes.
 - b. Utah History Tuning Team. The history team has continued their efforts to improve the learning outcomes. Daniel McInerney, a member of the Utah Tuning Leadership Team, has been a member of the American Historical Association (AHA) committee that is working to develop a set of learning outcomes that can be used by history departments in all institutions in the United States. That committee will meet in early June, and the Utah History Tuning Team will meet on June 15 to reexamine their learning outcomes based on input from the AHA.
 - c. Utah General Education Mathematics Team. The GE math team has a particular challenge in that they have no degree attached to their project and no employers who specifically use these outcomes. However, team members will need to address the Common Core State Standards. They have developed a short list of learning outcomes that will be expected of all students completing the general education quantitative literacy requirement. They have now appointed committees to develop competencies for each of the individual classes that a student can take to meet this requirement.
 - d. Utah Elementary Education Team. The elementary education team has a number of standards with which they are expected to comply including the Utah Effective Teaching Standards and the requirements of accrediting associations. They are currently working to develop specific learning outcomes based on the Utah Effective Teaching Standards. These standards were created for teachers, and the team is adapting them for students. They are also attempting to dig deeper into the standards and make them more explicit for the students. This team also will need to work with the Common Core State Standards, now known as the Utah Standards.
 - e. The learning outcomes for physics, history, and general education mathematics are in Appendix A. The learning outcomes for elementary education are not yet ready to share, but the work being done to develop them can be found in the minutes of the team meetings in Appendix B.
2. Reach consensus among all participating institutions that these are appropriate outcomes. The team members have reached consensus on the learning outcomes and competencies. Consensus among the discipline departments in the participating institutions varies. History and physics have made progress with individual departments on reaching consensus on the outcomes and competencies. GE math and elementary education have begun this work and will continue during the next year. Institutions vary considerably from some that are research universities with large departments, others

are two-year institutions with few faculty members, and others are somewhere in between. Consensus is critical to the success of the project, and this work will continue throughout the next year.

3. Incorporate Tuning reference points and discussion of curriculum, pedagogy, and assessment and the DQP in our statewide Faculty Discipline Majors' Meetings.
 - a. Janice Gygi, a member of the Utah Tuning Leadership Team, presented at the general meeting at the Faculty DisciplineMajors' Meeting on September 30, 2011. Bill Evenson, another member of the Leadership Team, attended the individual majors' meetings for physics and mathematics, and Janice Gygi attended the individual majors' meetings for history and elementary education. They joined in the groups' discussions of Tuning and other issues facing the disciplines. Teddi Safman, from the Leadership Team, coordinates and oversees the Faculty Discipline Majors' meetings.
4. Share findings with professional and accrediting organizations.
 - a. Daniel McInerney, a member of the Utah Tuning Leadership Team and the Utah History Tuning Team, serves on a new Lumina Tuning grant with the American Historical Association, the premier academic organization of the nation's historians. The AHA will develop a set of learning outcomes for history programs across the U.S.
 - b. Bill Evenson and Janice Gygi met with Cid Seidelman, chair of the Northwest Commission on Colleges and Universities (NWCCU) to discuss possible ways to share the Tuning concepts with the commission. His suggestions were helpful and will be pursued during the next year.
 - c. Bill Evenson and Janice Gygi met with officers of the two major education accrediting organizations, TEAC and NCATE, in Washington, DC on January 24, 2012 to explain Tuning to them and review Utah's past and current work with education disciplines. See a complete report of this meeting in Appendix C.
 - d. Teddi Safman has been working with the State Higher Education Executive Officers (SHEEO) and the Western Interstate Commission for Higher Education (WICHE) through its Passport Initiative and the Western Academic Leadership Forum (WALF) to understand Tuning and its impact on teaching and learning.
5. Clarify relationships of DQPs and Tuning with accreditors and promote DQPs with Tuning as a robust evaluation tool of accreditation.

The Utah Tuning Project has worked within the state to clarify the harmonization of DQPs and Tuning. This will be expanded to accreditors during the next year.

Deliverables

1. Best practices related to implementation of Tuning reference points for history and physics.

All of the teams have shared best practices among the team members. Evaluators have noted that this is one of the outcomes that team members have reported as being most positive in their participation in the meetings. The Leadership Team is currently working to develop a web site that will allow for the sharing of best practices to all departments throughout the state.

2. Report of discussions and understanding achieved with NWCCU on Tuning as a foundational methodology for discipline evaluation and assessment.
See Outcome 4 above.
3. Reports on efforts with professional associations.
See Outcome 4 above.
4. Report of Tuning teams' use of and recommendations for DQPs. Report on DQP Conference and expected results.
 - a. The DQP conference was originally planned for the fall of 2011. After discussion, the Utah Tuning Leadership Team decided to reintroduce the topic of the DQPs at the annual "What Is and Education Person?" Conference held on November 4, 2011 at Snowbird, Utah. This conference is typically attended by members of the general education committees throughout the state. Approximately 100 people, representing all eight of the public institutions, Brigham Young University, and Westminster College attended. Michelle Kalina from IEBC also attended. Holiday Hart McKiernan, Executive Vice President and General Counsel for the Lumina Foundation, was the keynote speaker, and the topic of her presentation was "Pulling Back the Curtain on What Matters Most – Learning." She discussed ELOs, Tuning and DQPs. At the conclusion of the presentations, individual groups met to discuss issues pertaining to curriculum for individual disciplines. At the conclusion of the meeting, people met in discipline groups to discuss curriculum issues. Those attending who were members of Tuning teams also met as a group. This was very helpful as it was one of the first times that individuals from different Tuning disciplines shared ideas, and the resulting discussion was very helpful to the Leadership Team in planning the DQP Conference.
 - b. The DQP conference was held on April 2, 2012. The agenda is included in Appendix D. Carol Geary Schneider, president of the Association of American Colleges and Universities and one of the coauthors of the Degree Qualifications Profile, was the keynote speaker. The morning began with a breakfast for presidents and vice presidents, which was attended by 22 people. Dr. Schneider gave a brief presentation at the breakfast, encouraging the administrators to support the Tuning project and the DQPs. After the breakfast, the main session began with approximately 105 in attendance, including members of all four Tuning teams, deans, chairs of relevant departments, and vice presidents. Representative attended from all eight public institutions, Brigham Young University, Westminster College, and Western Governors University. Michelle Kalina from IEBC also attended. The agenda is included in Appendix D. Dr. Schneider gave her keynote address, "Helping Students Connect: The Degree Qualifications Profile and Tuning," and then she answered questions. After the presentation, a panel answered questions from the audience. The panel included Dr. Schneider, Bill Evenson, chair of the Utah Physics Tuning Team, Kathryn MacKay, chair of the Utah History Tuning Team, and Daniel McInerney, member of the Utah Tuning Leadership Team. Informal discussions were held at the individual tables during lunch. After lunch, the four Tuning Teams met separately. Some of the chairs joined with the team for their discipline. Comments from the attendees were positive, and people

throughout the state were exposed again to the coordination of Tuning and development of DQPs.

5. Deeper and more specific sets of learning outcomes and competencies at associate's, bachelor's, and master's levels for history and physics.

The revised learning outcomes and competencies are found in Appendix A.

6. Reference points for physics secondary teaching, doctoral level physics, history, elementary education, and GE mathematics.
 - a. Work is underway on these processes.
 - b. The physics team has determined that doctoral level physics is based on a unique program for each individual, and Tuning such programs would not be valuable at this time.
7. Learning outcomes for elementary education and general education mathematics.
See Appendix A for learning outcomes.

Major Changes

1. While no major changes were made, small changes emerged.
2. The original proposal called for the addition of professors who were involved in preparing secondary educators in history and physics. Those who teach in these areas tend to be adjunct professors. Some of the departments have professors who have been hired for this purpose, but they are extremely busy as they must supervise student teachers as well as teach classes. Because of this, it was difficult to select as many as we hoped. The physics team currently has one person from Weber State University and one from Utah State University, each in their physics departments and each responsible for the physics teaching program. The history team has one person from the University of Utah who is an adjunct in the history department and one from Utah Valley University who is in the School of Education and is in charge of the history teaching degree. The history team also has a student from Utah Valley University who is pursuing a history teaching degree.
3. For the GE math team, the intent was to have members who are in the mathematics departments and members who are in departments that use general education mathematics as a foundation. It has proved difficult to find team members from other disciplines. Currently, the team has an economics professor from Utah Valley University and a physics professor from Utah State University. A chemistry professor from Southern Utah University has just been recommended for the team. We will continue to pursue this objective.
4. In forming the new Tuning teams, a member of the Utah State Office of Education (USOE) was added to the elementary education team and to the GE math team. After meeting with Sydney Dickson, Director of Teaching and Learning at USOE, and several members of the USOE staff, a representative from USOE was added to each team. Their input on the transition from public education to higher education has been very valuable especially in the two Tuning areas that must be concerned with the Common Core State Standards..

5. The original plan was to have several of the team meetings online, but the teams have felt that they worked better face-to-face, so all meetings this year have been face-to-face with a few members joining online. This has necessitated some changes in the budget.
6. Some of the objectives have taken longer than was originally planned, so they will be carried forward into the next year of the grant.

Evaluation

1. Randy Davies and David Williams from Brigham Young University were hired to conduct a developmental evaluation of the project. Their report is in Appendix E.
2. Randy and David have attended meetings of the Tuning teams, and their input has been very valuable.

Communication

1. All articles and other communications are in Appendix F.
2. The *Deseret News* published an article about the receipt of the grant.
3. The Tuning process was reported in the April 2012, "Higher Ed Matters," a newsletter published by the Office of the Commissioner of Higher Education.
4. An article on the progress of Utah Tuning was submitted to IEBC for inclusion in their newsletter, which is forthcoming.
5. Members of the Utah Tuning Leadership Team have published articles and made presentations about Tuning at several conferences.

Learning

1. The elementary education team needs to drill down deeper than the national or state standards suggest. This is essential for achieving a common understanding of what the standards are asking as well as for developing learning outcomes that will be transparent to students, policymakers, and other stakeholders in addition to faculty. This will help to strengthen our work with faculty who prepare K-12 teachers and will facilitate a deeper understanding of the Common Core State Standards.
2. At Utah State University the link between the Tuning experience and general curricular change is explicit. At the level of the history department, the work on teaching toward the outcomes and levels continues. A faculty committee is now explicitly creating an entry level course to increase the efficacy of all upper division courses. The College of Humanities and Social Sciences has used the Tuning process to develop levels in all its majors, a process that will be repeated across the university as all majors use it for their DQPs.
3. From their experience, the history department at Utah State University learned that when a department starts to dig deeply into the Tuning process, faculty not only imagine how each part of the discipline's program can serve specific and clear purposes. They also think of the other

coursework students can, or must, take and imagine how those pieces fit in a coherent, meaningful, and sequential manner to develop learning over four years.

4. At Utah State University, the study of coherence, meaningfulness and sequence led to the creation of a pre-major program that looks back into general education requirements, determining which of those many choices most closely align with the knowledge, competencies, and styles of learning that both serve and prepare students for rigorous historical analysis.
5. Recognizing that general education expectations can be met at two-year institutions, the project also leads to considering appropriate levels of learning and achievement attained through associates' and bachelors' degrees. Discussions connected to the DQP process are as faculty-driven as Tuning conversations. Attention to coherence, meaningfulness, and sequence draws the DQP and Tuning initiatives together rather than driving a wedge between them.
6. When considering how to disseminate information about Tuning to students in colleges and universities, it may be useful to connect much more closely with all of the student services officers on campuses around the United States. The message of Tuning, with its emphasis on student learning, general and disciplinary learning outcomes, and the skills and competencies represented by quality degrees, could, perhaps, be made even clearer to students if faculty in specific disciplines built a stronger relation to academic advisors, career counselors, campus orientation officers, and course evaluation managers. This would allow the guidance coming out of all of those offices to convey the same set of ideas and themes to students.
7. It was good to learn early on that Tuning is a faculty driven process that is not "cut and dried." That has helped manage expectations on progress that sometimes seems slow or messy, especially in the uncharted waters of Tuning GE math.
8. At the initial meetings for the Elementary Education Tuning Team and the General Education Mathematics Tuning Team, one team met in the morning and one in the afternoon, and they had lunch together. Some members of all teams met together at the "What Is an Educated Person?" Conference. This sharing of ideas across teams was found to be very helpful to provide resources for the new teams and to suggest fresh ideas for the teams that had worked together previously. The DQP conference was planned so that the panel discussion could answer questions for all discipline teams.
9. Members of the Utah Tuning Leadership Team have worked on several other Lumina grants and have also worked closely with other organizations where they have shared information about Tuning. Teddi Safman has written an article on the convergence of some of these activities. The article and the details of Utah's participation are in Appendix G. Leadership team members and discipline team members are interested in learning about other projects and are happy to help where it is appropriate.

Sustainability

1. The Tuning process has been explained to the Faculty Discipline Majors' groups who now want to engage Tuning informally in their disciplines.

2. The history department at Utah State University has made major strides in Tuning their discipline and motivating other departments in their college to begin the process. It is now spreading throughout the campus. Utah State University serves as an exemplar to the other departments throughout the state.

Financial Report

The financial report and audited financial report are found in a separate attachment.

Janice Gygi, Ph.D.
Project Director

May 31, 2012
Date

APPENDIX A
Learning Outcomes for Individual Disciplines

Utah Physics Learning Outcomes

March 28, 2012

Using the competencies developed in the first part of this project, the Physics Team wrote the following Learning Outcomes for Bachelor's degrees in physics:

1. The Nature of Science and Nature of Physics

- Give examples of what constitutes convincing evidence for a scientific explanation; analyze the roles of experiment, interpretation of experimental results, and argument in establishing evidence. Define physical cause and effect; suggest how cause-effect relationships can be inferred from experimental data.
- Explain how experimental evidence can falsify scientific hypotheses and how it can contribute to acceptance of scientific concepts.
- Categorize the variety of approaches to research in physics; analyze the distinctive roles each approach plays in the development of physical explanations.
- Distinguish physics from other sciences by explaining the differences in focus on subject matter, kinds of questions, kinds of explanations, and techniques.
- Identify main points of scientific ethics and responsibility relating to laboratory practice, work with students and collaborators, co-authorship, publication and public advocacy.
- Explain how science is a community effort and argue both the necessity of scientific cooperation and the advantages and disadvantages of solitary science.
- Identify and relate the major historical threads in the development of physics. Identify major contemporary issues in physics and a range of applications of physics in today's economy.

2. Mathematical Skills, Modeling Skills, and Problem Solving Skills

- Solve correctly algebraic and calculus problems from typical bachelor's degree physics texts.
- Interpret the meaning of the mathematics that occurs in a particular physics context from typical bachelor's degree physics texts:
 - Explain what physics quantities are represented by the algebraic symbols.
 - Explain the physics meaning of vector algebra.
 - Discuss the context for the equations, i.e. assumptions and simplifications, and explain how the equations would change with different assumptions.
- Estimate orders of magnitude of physics quantities; estimate orders of magnitude of solutions to physics problems; explain how to identify quickly whether a problem solution or other physics quantity is of reasonable magnitude.
- Graph related physics quantities in ways that illuminate underlying physical interpretations; interpret graphs from typical bachelor's degree physics texts.
- Build a model for an effect from a typical bachelor's degree physics text; identify the most important physics concepts in the phenomena that must be included in the model.
 - Analyze what one can learn from simple models and what their limitations are.
- Build and work with mathematical models by
 - Casting a story problem from a typical bachelor's degree physics text into a mathematical model;
 - Identifying the physics concepts in a given mathematical model;
 - Distinguishing problem solving and modeling, identifying differences and relationships.
- Give examples of physics problems with similar mathematics but different physics.

- Organize a problem from a typical bachelor's degree physics text by identifying the relevant physics principles, identifying relevant vs. irrelevant quantities, and making appropriate diagrams.
- Organize quantitative information in a problem from a typical bachelor's degree physics text by clearly stepping through the mathematics of the problem solution.

3. Understanding of Physics Concepts

- Explain the major threads of physics concepts: conservation laws, forces (gravity, e&m), fields, Newton's laws, work and energy, optics, thermal and statistical physics, relativity, quantum mechanics.
- Identify key elements in the functioning of a physical system and relate them to the construction of a model.

4. Laboratory Skills

- Follow practices necessary for safety in using undergraduate research or teaching laboratory equipment. Explain these practices to others, including identifying both potential dangers and ethical issues. Suggest how safety could be improved in a particular undergraduate research or teaching laboratory.
- Carry out error analysis on laboratory data; explain what the errors mean for data interpretation.
- Evaluate the quality of laboratory data; explain the importance of such evaluation.
- Design a laboratory measurement to answer a physics question on the level of typical bachelor's degree physics texts.
- Analyze the connections between what one measures and how one infers the physics interpretation of the measurements.
- Outline ethical laboratory practices and make arguments for their importance. Include ethics of reporting laboratory procedures and results as well as ethical practices in carrying out an experiment and reporting data.
- Apply critical analysis of the generation and collection of data to computer experiments.

5. Scientific Presentation Skills (written, oral, and visual communication)

- Write essays on physics topics and problem explanations in complete, correctly punctuated sentences that are well organized and clearly express careful arguments.
- Explain physics concepts clearly in writing both with and without mathematics.
- Present physics topics clearly to peers and in the more formal setting of local or regional meetings.
- Impart knowledge of physics understandably to less advanced students in a teaching situation.
- Present research results clearly and coherently, identifying significant motivations for the work, describing and interpreting the findings, and explaining the significance of the results.

6. Computational and Information Skills

- Demonstrate the use of any of the scientific software packages associated with the usual bachelor's degree curriculum.
- Create a simple computer program to calculate physical effects.
- Demonstrate the use of a spreadsheet to solve physics problems; demonstrate the use of Maple, MatLab or a similar computer algebra system to solve physics problems.

- Explain the major issues of numerical analysis, such as error estimation, in the context of a problem from a typical bachelor's degree physics text or in the context of a computer program related to such a problem.
- Find information in the physics research or teaching literature on an assigned topic from a typical bachelor's degree physics text.

7. Research Skills

- Apply physics competencies in a research setting by designing an experiment that involves multiple concepts, interpreting experimental results that involve multiple concepts, suggesting an hypothesis for a physical effect and how to test it, or building a mathematical model that gives a coherent interpretation of a physical effect.
- Explain your role and the roles of your advisors and collaborators in a complex research project, such as envisioned in the previous bullet point. Explain how collaborations work in your physics subfield, both in the ideal and in reality.
- Synthesize physics principles and applications to explain an effect observed in the laboratory or in a thought experiment; i.e. make hypotheses about the physical causes of the effect that has been observed, propose tests of the hypotheses, debug both equipment and ideas that do not work, etc.
- Outline ethical research practices and explain why they are important. Include ethics of giving credit to prior related work, of coauthorship, of reporting data, and of retaining or destroying data.

Utah History Learning Outcomes

January 16, 2012

Note: Daniel McInerney, a member of the Utah Tuning Leadership Team, has been a member of the American Historical Association (AHA) committee that is working to develop a set of learning outcomes that can be used by history departments in all institutions in the United States. That committee will meet in early June, and the Utah History Tuning Team will meet on June 15 to reexamine their learning outcomes based on input from the AHA.

HISTORICAL KNOWLEDGE

- I. (Range of historical information)
 - A. Identify the key events which express/define change over time in a broad range of places or regions.
 - B. Identify how change occurs over time
 - C. Explain historical continuity and change
 - D. Describe the influence of political ideologies, economic structures, social organization, cultural perceptions, and natural environments on historical events
 - E. Discuss the ways in which factors such as race, gender, class, ethnicity, region, and religion influence historical narratives

HISTORICAL THINKING

- II. (Recognize the past-ness of the past)
 - A. Explain how people have existed, acted, and thought in the past
 - B. Explain what influence the past has on the present
- III. (Emphasize the complex nature of past experiences)
 - A. Develop an international perspective on the past that addresses the cumulative effects of global exchange, engagement, and interdependence.
 - B. Compare eras and regions in order to define enduring issues
- IV. (Emphasis the complex and problematic nature of the historical record)
 - A. Recognize a range of viewpoints
 - B. Compare competing historical narratives
 - C. Challenge arguments of historical inevitability
 - D. Analyze cause-and-effect relationships and multiple causation

HISTORICAL SKILLS

- V. (Develop skills in critical thinking and reading)
 - A. Evaluate debates among historians
 - B. Differentiate between historical facts and historical interpretations
 - C. Assess the credibility of primary and secondary sources
- VI. (Develop research skills)
 - A. Formulate historical questions

- B. Obtain historical data from a variety of sources
 - C. Identify gaps in available records
 - D. Recognize the discipline's standards for accurate and ethical research.
- VII. (Develop the ability to construct reasonable historical arguments)
- A. Construct a well-organized historical argument
 - B. Support an interpretation with historical evidence from a variety of primary and secondary sources

Utah General Education Mathematics Learning Outcomes

May 9, 2012

A student who has successfully completed any Math GE course will have demonstrated the following proficiencies:

1. Know when and how to apply mathematical knowledge to real world problems.
2. Interpret and critique quantitative information or arguments.
3. Construct quantitative, logical arguments.
4. Understand and use mathematics as a language to communicate.
5. Use technology to explore and analyze mathematical concepts.
6. Estimate to check reasonableness of an answer.

Utah Elementary Education Learning Outcomes

May 21, 2012

The learning outcomes for elementary education are not yet ready to share, but the work being done to develop them can be found in the minutes of the team meetings in Appendix B.

APPENDIX B
Minutes from Tuning Team Meetings

Minutes
Utah Physics Tuning Team Meeting
September 21, 2011

Present: Trina VanAusdel, Salt Lake Community College; Ross Spencer, Brigham Young University; Tonya Triplett, Utah State University; Adam Johnston, Weber State University; David Williams, Utah Tuning Evaluator; Samuel Tobler, Dixie State College; Brian Saam, University of Utah; Bill Evenson, Utah Tuning Project; Randy Davies, Utah Tuning Evaluator; Janice Gygi, Utah Tuning Project; David Kardelis, Utah State University – Eastern; Larry Smith, Snow College; Charles Torre, Utah State University.

Joining on IP Video: Phil Matheson, Utah Valley University; James Chisholm, Southern Utah University.

Excused: Duane Merrell, Brigham Young University; Mary Jane Chase, Westminster College; Teddi Safman, Utah System of Higher Education; Jeff Hodges, Student Team Member.

The meeting was chaired by Bill Evenson.

Announcements.

- “What is an Educated Person?” Conference, November 4, Snowbird. Everyone was encouraged to attend.

Evaluators.

David Williams, one of the Utah Tuning evaluators, discussed the rationale behind the evaluation. The evaluators are trying to discover ways to understand what the team is doing. They want to come up to speed on where the team is and plan to give feedback on the process. Did the process have any impact? What does the team think the impact should be both now and in the long run? He asked the team to report where they are, where they are heading, and what the expectations are. The focus is to help the team do even better what they are already doing. The evaluators will look at the standards and ideals and see how the team is doing.

Randy Davies, the other Utah Tuning Evaluator, said that they will be providing another set of eyes. They are here to learn from the team and go beyond the team to the faculty and colleges to see what is working in the departments.

David pointed out that this is a bottom-up process. How do you feel about that? The team discussed the questions:

- It is a bottom-up process, not administration mandated. The team is working on that. It has not yet been communicated successfully to the departments.

- It is a bottom-up process at the University of Utah where they this is seen as a real opportunity. A committee has been formed of people who are interested in the process, but it has not yet met.
- Initially there was skepticism on the team, but as it gelled together as a group, there was quick agreement.
- Some still feel Tuning is not quite ready and are reticent to take it to the department.
- At UVU there is a large departmental push to expand the assessment of learning objectives. This could be made into a community involved process.
- A lot of this is already going on. This process is seen as improving and articulating better what is already being done. If it were mandated, there would be a problem.
- A lot of faculty are interested in assessment, because they ask, "How do we know?"
- Some of the history departments have found it valuable to tell students up front what they need to know.
- Small schools and two-year schools have many adjuncts and no majors. The issue with the two-year schools is preparing students to transfer.
- It is also important to include new members of the faculty.
- BYU is not a state school but has the same issues. Their outcomes should be linked with the state. The next step is to add department learning outcomes and course learning outcomes.
- Some professors do not use tests, but consider it to be an assessment every time they interact with a student. Everything is explained orally. For classes as large as 700, this is not possible.
- Some departments publish learning objectives and link test questions to the objectives, but it is not clear that students understand this.
- The idea of Tuning is to define the outcomes that every student receiving that degree should master. It is not a statistical assessment of the program.

Tuning II Grant.

- The Deseret News published a good article about the grant on September 12.
<http://www.deseretnews.com/article/705390748/Giving-higher-education-a-tune-up-Utah-takes-steps-to-ensure-students-have-right-skills-for.html>.
- The grant will allow further Tuning of history and physics and the addition of elementary education and the general education piece of mathematics.
- Part of the grant is to link Tuning and the Degree Qualification Profiles (DQPs). A conference about DQPs will be held in Salt Lake on April 2 with Carol Geary Schneider, president of the Association of American Colleges and Universities as the keynote speaker. Team members should plan to attend.
- Jeff Hodges will continue as a student team member on the physics team. Team members should nominate a student in the physics teaching program to join.

Future Plans.

- Tune the degree in teaching physics. There are already requirements for certification. The team should work with the members representing the degree in teaching physics to develop a good set of outcomes and make the implicit explicit.
- The outcomes are currently detailed only for the bachelor's level. They need to be extended to the doctoral level. What does the student need to know, understand, and be able to do at the associate, bachelor's, master's, and doctoral level? What are the implications for curriculum, pedagogy, and assessment at each level? These will not be standardized but will be different for each institution due to such issues as emphases, faculty expertise, priorities, and assessment.
- The Lumina expectation is that the team will share experiences. They want to know how the team will take Tuning to the next level and how the private institutions will be included. Lumina is interested in the process.
- The team may want to consider first, refining the outcomes, and second, assessment.
- The point of the team discussions is to share ideas about curriculum, pedagogy, and assessment, reaching an understanding of what these mean but not standardizing them across institutions.

Assessment.

- It is important that every professor is assessing progress and not just saying, "I know."
- Some consider assessment to be "touchy, feely." There are a lot of differing opinions, and there is potential for conflict. One comment was, "Every minute you spend assessing is a minute you are not teaching."
- How can a department assess how you teach physics? Teachers need to know how to transfer knowledge. We should stick with what physics teachers need to know, understand, and be able to do. Teaching skills and physics knowledge need to be integrated.
- There is an extra level of learning outcomes for physics teachers, which would include pedagogy skills.
- The team might want to consider Praxis, a minimum competency exam for specific content areas.
- Those seeking degrees in teaching physics mainly take the same courses as physics majors.
- The team may need a subcommittee on teaching physics. Should some high school physics teachers be added to the team?
- The team may want to work first on bachelor's and master's degrees and the doctoral degrees may be an outgrowth of that.
- Interfacing with the department is the issue. The team can't select outcomes that cannot be assessed. Administratively, the team probably does not want 42 outcomes. The main seven headings are outcomes and the subsets may be assessment of those outcomes. Department faculties need to decide what the outcomes are from this set. This will be hard.
- Randy asked what instruments departments are using for assessment? Rubrics? Measurements? These need to be defined for the group. Informal assessment is done all the time. Departments need to assess the degree to which they are using the process as well as the end result. These decisions are made at the department level and assessment is at the classroom level.

- People are concerned about exams. These are created differently by every professor. At what level do we expect graduates to be able to perform? What level did we have in mind from the benchmarking? The benchmarks may not be understood by others, but they are universally understood by physics faculty members.
- It is important to take the assessment information and use it in the classroom. Categories must be assessed.
- For teacher education in history, the team is concerned about professionalism and ethics. Does the individual dress appropriately and not abuse children? These issues may be handled individually.
- The standards for education are available with specific expectations.
- How will the departments use the assessment? The team needs to find out what is acceptable to agencies but also what will work to make courses better for students. One place to begin would be with consistent introductory syllabi.
- One step might be to ask the professors, “How do you know?” This is popular because it is one source of evidence.
- The departments could look at the course structure with a set of guidelines for the course and areas the course is expected to cover. Ask what people are covering and how. Then see if there is a gaping hole. If no one is doing it, perhaps it doesn’t need to be done.
- Everyone should be going through the list of outcomes. Which bullet point does the student know, understand, and is able to do. A committee could be used to break it down.
- Are knowing, understanding, and doing levels of sophistication? We need to bring back the benchmarks. With the benchmarks we had to define levels of sophistication. Bill will send these to the committee.
- Will this make clear what is the difference among knowing, understanding, and doing? It will help to know the issues at any specific level: basic, adequate, etc. Perhaps we need alumni focus groups.
- The employer focus groups were concerned that the students did not know statistics. Another hole is estimation skills. Where do they learn those?
- There is a lot more detail from the employer focus group. (Janice will send the complete report to the team.) There is an expectation of undergraduate research. Information from all team members will be shared on a web site to be created soon.

Next Meeting.

- The team indicated that it was necessary to have time to share the outcomes with individual departments before meeting again. The next meeting will be in January. Thursday and Friday seem to be the best days.
- What are the outcomes for this project? What product do we need to deliver?
- Lumina wants reference points for specific degrees and practical implementation. The doctoral degree is not a high priority for them.
- There is a consensus about sharing this with individual departments. There is a concern about this coming from outside. We need to find and/or develop resources for the departments.

- In Europe the Bologna Process was top down. Here we want faculty involvement. We know implicitly what the discipline is about. We need to make it explicit.
- Bill reported that Texas is Tuning four or five engineering disciplines. He wrote a paper on how Tuning relates to ABET, the engineering accreditation body. Kentucky is Tuning five disciplines. Indiana and Minnesota were involved in the initial round of funding for Tuning. MHEC, the Midwest Higher Education Commission, has a grant to Tune across states, Missouri, Indiana, and Illinois in marketing and psychology. Lumina has given a grant to IEBC, the Institute for Evidence-Based Change, to allow them to teach the Tuning process throughout the states.
- At Utah State University, the College of Humanities and Social Sciences is expanding Tuning beyond history. Utah is a leader of the Tuning process nationally.
- Lumina's goal is to have more people getting degrees and to improve the quality of the degrees.

Evaluator Wrap-up.

- Does it work to get everyone to the Board of Regents building?
- It makes the team members feel included. Participation by IP video is not quite the same.
- Are you comfortable and do you feel you can say what you think?
- We are okay with individual feelings and prejudices. We are trying to muddle through and determine what will help us. The group is completely collegial.
- The process started with the Majors' Meetings. Bill gently steers the team but is willing to change course when necessary.
- Do you understand and buy in to Tuning?
- Each member was brought in at a different time. We are not doing European Tuning; we are doing Utah Tuning. Will people actually do it? They are candid about their skepticism.
- We have to do something like this for accreditors anyway. There is assessment pressure across the board. It is easier to use what we have developed.

Bill thanked everyone and reiterated that we will be using developmental evaluation. It will be like a research project.

Minutes
Physics Tuning Team Meeting
February 17, 2012

Present: Randy Davies, Bill Evenson, Janice Gygi, Jeff Hodges, Norm Jones, David Kardelis, Phil Matheson, Teddi Safman, Larry Smith, Samuel Tobler, Charlie Torre, Tonya Triplett, Trina VanAusdal, David Williams

Bill Evenson chaired the meeting.

Announcements

The Degree Qualifications Profile conference on April 2 will begin at 9 a.m. and will be held at the Marriott Downtown at the City Creek Center (75 South First West, Salt Lake City). Please plan to attend. We will meet as a Physics Tuning Team that afternoon.

The “What Is an Educated Person?” Conference will be held at Snowbird on October 26. Mark your calendars now for this important event.

Randy Davies asked team members to indicate a time when they will be available for an interview with him or David Williams. David will be sending an email with questions to consider for the interview. David and Randy have been working with us since last fall. If you have any questions let them know.

Learning Outcome Review

Bill reminded the team that they have seven categories of competencies with 42 learning outcomes (LOs). This is probably too many for effective assessment, and we need to consider how to refine the LOs to an assessable set. The LOs are basically focused on the bachelor’s degree level. Are they appropriate for that? What would be different at the associate’s and master’s levels? The team considered the outcomes section by section.

#1 – The Nature of Science and Nature of Physics

Are these correct expectations for a bachelor’s degree in physics?

Jeff, who has the most recent bachelor’s degree in physics, says the list fits with what should be a minimum, but his degree was more robust.

Phil questioned whether there anything here that talks about contemporary issues, such as environmental issues. Jeff thought the next to the last bullet point might deal with this. Phil noted that it would be something that the team should want to include. Charlie asked what are the open questions that are hot. Students must be expected to know something about what is

current in their field. Bill noted that students should be aware of such issues as the fact that physicists developed laser scanners for grocer stores. Phil said this includes political, economic, and environmental issues that are impacted by science. It is a little broader than just physics; it is knowledge of contemporary issues. There ought to be something to make them aware of what impacts their lives.

David pointed out that the first bullet point addresses the role of evidence, including contemporary issues. It is more a general education issue. When he teaches his general education class, he says, "That is physics."

Tonya said they are doing a review of what a general education science course is. This includes questions of what is important in our daily lives today. They are looking at intelligent life in the universe, which is mostly astronomy. Bill said that a student should know this and asked if physics majors take those general education courses.

Jeff noted that there are not many students who are oblivious to the issues of the day. The question is whether it is a natural thing for a physicist to do, to look at the world around them.

Phil said maybe the list should have something explicitly to let students know what the current issues are in physics.

Bill reminded the team that these learning outcomes are what a student should know, understand, and be able to do when they receive a bachelor's degree in physics.

Tonya said that there is concern about having students add a course when their schedule is already full. Teachers should talk about current issues in every course. Bill said this is one of the things that we are trying to do in physics. In many cases we should have multiple classes that will touch on pieces of this. Jeff noted that every one of his professors has discussed contemporary issues. He thinks just about every professor does that. Another course would burden the students.

Phil noted that this document is for teachers, not students. The team doesn't want the list to be five times longer than it is.

There was also concern about whether the list as it now stands adequately distinguishes physics from other sciences.

#2 – Mathematics Skills, Modeling Skills, and Problem Solving Skills

Is this the right level for bachelor's degree? Is there anything that is left off or anything that ought to be removed?

Larry asked about the requirement to “Build a physical model . . .” What does physical mean? Does it need to be built out of stuff or could it be mathematical? Tonya suggested removing “physical,” and make it a just “model.” Jeff suggested it could be a “model based on physical concepts.”

Bill said some of these are things that we do at the associate’s level. Maybe it is an issue of sophistication. At a bachelor’s degree we are expecting more? Are we still dealing with the right issues? One of the options we have is to say that at the bachelor’s level we ought to be able to do anything that we have done at the associate level, but add some and do them at a more sophisticated level.

Charlie said there are a few basic concepts that are built upon. We have the same topics but we should have levels of sophistications.

Phil noted that there probably are no associate’s degrees in physics, but the degree in teaching physics is probably comparable.

General Education Issues

Bill introduced Norm Jones, chair of the Regent’s Task Force on general education, and Teddi Safman, assistant commissioner for academic affairs.

Norm said there was a meeting at Utah State last Tuesday of people who teach general education physical science. What should a student leaving any section of this course know, understand, and be able to do? Issues will vary from individual to individual. The requirement is taught by several different disciplines, such as physics and geology. Where do you begin the physical science curriculum? Everyone at the meeting said students are not ready to do physical science when they come to the class. About 25% are not capable of doing college algebra; they can’t interpret or make a graph. At the other end are students who can do all those things and wonder why they are in that class. Should there be a requirement before they take that course? Should they pass quantitative literacy first?

Larry said they should at least have Math 1010 (intermediate algebra). He said they get a lot better students because they added that requirement.

Norm said they are wondering which pieces of general education need to be completed in preparation for the rest of the general education courses. The sense is that if we had such requirements it might make for a better learning environment. Tonya suggested there should be a prerequisite to make students take a course so they are prepared. A low level of math is a detriment to the class overall. Bill advocated that both Physical Science 100 and Biology 100 have a prerequisite. He noted it can be self-enforcing as students cannot do the work for the course without the prerequisite.

Phil said he has had experience teaching that class at two institutions, and 75% of any given class will miss simple parts of the course because they have no mathematical reasoning skills. Teddi noted that as students in high school become more competent with common core skills, we should be seeing students with better quantitative skills and math skills. Jeff serves as a teaching assistant at the University of Utah. He said students are getting much worse rather than better. Math skills are dropping by five percent from year to year in the same courses. David K. said in the last two years the students' math skills have dropped appreciably.

Norm said that general education is supposed to be preparing students to go into the STEM disciplines. The team may want to look at the skills students need when entering STEM programs. Bill said this is relevant to the levels of sophistication. The team is not looking at a very high level of sophistication in mathematics to go into physical science.

David K. said that students have changed in the past two years. They are relying too much on the calculator. They have no idea why it is wrong when they have inputted the negative sign incorrectly, for example. Sam said that they rely way too much on their calculators.

Phil said he teaches with Paul Hewitt's book on the 101 level. Students report they are glad they took the course because they didn't know the concepts and have finally learned what all this means. He does it at the conceptual level, without math.

Larry said he doesn't think engineers are less prepared than past years, but for others, such as art history majors, math skills are more abysmal and scary. Tonya said she has seen this over five years. There is an increasing number of students who have failed at the general education level. Jeff said he has seen this in science and engineering, perhaps because there is an increase in the number actually taking those courses. Tonya said, in a class of 380 students, 22% could not pass at 70%. Jeff asked about using AcuPlacer, and Larry said the team should let the Math Departments do that. Tonya reported on a student who was satisfied with 68% and felt it was high enough.

Bill said that what we are really trying to do with outcomes is state them in a way that is assessable. We need, for example, for students to know the magnitudes of physical quantities. We don't want to say they can do this 70% of the time, but that they can actually do it. This is the level we expect them to perform. Charlie noted that the benchmarks were how the team tried to address this issue. He wondered whether incoming physics majors have taken the prerequisite calculus courses. Phil said that the students have passed calculus, but don't understand physics concepts. It's not the math problem; it is the ability to handle the mathematics concepts. How do we state the goal? We want them to be able to do very basic reasoning.

Charlie said we may need to examine learning incomes as well as learning outcomes.

David K. pointed out that there is no integration of the sections in the math course. Students cram for the test and then forget it.

Norm said he appreciated the team's input. It gives a picture of students that are floundering in the curriculum, because they are not prepared to be in the courses in which they have been placed.

#3 – Understanding of Physics Concepts

We need to correct the wording “physical models” in this category also.

Charlie pointed out that this category summarizes all the subject matter. Do we want statistics and statistical physics? Bill asked if we want to change thermodynamics to thermal physics. That might be general enough. Thermal physics includes a lot more than thermodynamics, including statistical physics.

#4 – Laboratory Skills

Jeff suggested that ethics be added under the first bullet point. He says it is shocking the unsafe, unethical practices of some of his peers. He was asked if this meant dangerous practices or cheating. He replied that both apply. Students should learn that lying about results can do harm. It needs to be explained that there is an ethical side to laboratories.

Charlie asked why there should be two outcomes on safety. We definitely need safety and definitely need ethics. He reported that half of undergraduates rarely enter a lab.

Larry noted that bullet point two is redundant, but Phil said there should be something about ethics.

Bill said this applies to computer experiments as well as lab experiments. For example, it is important to save the data so it can be repeated.

5 – Scientific Communication Ability

Charlie said # 5 is dear to his heart nowadays. His students have a big problem trying to write an explanation using mathematics (bullet point two). Jeff said they need to cover this both with and without mathematics. Phil said they don't do this very well sometimes. Charlie said he liked #5 otherwise; the team agreed.

#6 – Computational and Information skills

Bill noted that the first bullet point is vague, and relevant scientific software packages change every year. Tonya said that maybe we need to leave it vague because of the constantly changing environment.

7 – Research

Bill said this implies that before they get a degree they should be assigned a paper showing they can do research. If we think that these are appropriate bullet points, it leads immediately to some sort of assessment, a specific requirement.

Larry asked if there was a capstone course.

Ross reported that at BYU they require their students to have a capstone writing assignment. It could be a manual for a piece of equipment. It is really hard to do this. The faculty has shot themselves in the foot by requiring this (in Physics 498R) because of the extra work it has entailed. Students do research with a faculty member and write it up.

Jeff said he had to take a technical writing course at UVU. Ross said at BYU this is a university requirement, and the physics department teaches their own course. Jeff asked if that could be an associate level course with the capstone being the bachelor's level. Bill responded that Tuning does not recommend courses, but departments could certainly consider such an arrangement.

Randy had a question on the placement of the last item. Might a literature review requirement be better under #5 (Scientific Communication Ability). Bill said the team originally wanted students to access information in physics literature. Larry noted that #5 is about producing information, while #7 is knowing how to access it. Jeff said it is making sure someone knows how to go out and access information on the computer and do a literature search.

Jeff said that we need to put an ethics section on this, too. Research as well as the laboratory has an ethical need.

Phil asked if we need clarification on first bullet point. Do we want to rephrase “semi-independently” to allow a group or a team project? Ross asked if Phil had an idea of a setting for that. Would it be a course? Charlie said it could be a research experience or an intermediate lab where students would spend a few weeks doing an experiment and writing it up. He thought that was what was intended here. Jeff suggested adding “collaboratively.” Bill said it would be a good idea to mention explicitly that this should be done under the direction of an advisor.

Bill commented that the second bullet point could be a little steep for an undergraduate. Is there much hope that bachelor's students can explain a "novel effect?" Ross said that the way they get this experience is debugging programs or examining effects that don't work. Bill said students also get this experience by sitting in a group with professors bouncing ideas off one another to try to understand experimental or theoretical results. Charlie said that it is not only that they can solve a problem but that they can explain something. Jeff said students should be able to hypothesize about reasons for the results they have seen.

Additional Issues

Bill asked what we would change here if we made a list at the associate's level. Because the time is exhausted, we may need to examine this remotely. Members at two year colleges can give us some guidelines. No one gets an associate's degree in physics, but students should come from a two-year college to a four-year college and be prepared to compete at that level.

Larry said a physics major is a rare bird at a junior college. Everyone who is in a two-year college could look at what we expect for four-year colleges. As far as coursework, the physics students take the same courses as engineers take.

Bill asked about what Phil suggested earlier: is it reasonable to conceptualize those first two years as being the same as a degree in teaching physics? Jeff said that UVU has a rather large mathematics teaching course that students take during their first two years. Phil said as far as he knows, students only have to take up to modern physics for the teaching degree. Ross said at BYU they have to take a couple of courses in the upper division, but also take some upper division physics teaching courses. They usually do take lower division astronomy. At Dixie they just recently got permission to add a physical science teaching degree. Now they take through modern physics, but they can take a higher level course that could be physics, but they may also take something else.

Reports from Departments

Charlie said he has brought this up on three occasions and has distributed the outcomes on three occasions. The faculty are passive about it. When assessment and consequences arise, maybe that will change, but for now they are content to let Charlie carry on with it.

Tonya said that the faculty said they already do those things.

Phil said he had nothing of substance to report from UVU. Tuning LOs were presented to the UVU physics faculty, but they have not yet affected curriculum or assessment.

Priorities

Bill asked what product the Tuning team needs to deliver. It is clear what the Lumina Foundation wants, but it is not clear what impact this could have on physics education.

The doctoral level is not a high priority for the Lumina Foundation. We originally had an interest but realized that it is basically a research degree, and have since put the doctorate in physics aside. If you have another viewpoint let Bill know.

We need to help departments implement Tuning. This will take further discussion. How do we get the faculty involved?

The other major thing is the question of assessment. If we have learning outcomes in an assessable form, how are we going to assess them?

Ross said at BYU, they have had a couple of professors who started to attack this. Giving grades is not the same as assessing competence. Some of the professors are giving quiz questions and expecting students to show competence by the end of the course. They can still get excellence or failure. Bill said he taught a class where they had to be able to do certain things (an irreducible minimum) or they failed the course. It was useful to identify the minimum level of performance.

David K. said he attended a workshop last summer with a keynote address from a physics professor, who said he had a class with specified learning outcomes, and assessment was 1, 2, 3, 4. 1 meant the student could write the problem correctly on the white board; 2, they sort of can do it; 3 was competent; and 4 meant he would brag about the students to the teacher at the end of the hall. It is a pain to grade, but it works.

Larry said that the problem with grades in regular courses is they are an average of all that goes on. We need to disaggregate and make sure that each student can do each of the outcomes before they graduate.

Bill will do a first stab at editing the outcomes and a first stab at how to work on the future steps.

Our next meeting will be on April 2 at the Degree Profile conference. We hope to get everyone there.

We have the beginnings of a web site, which is very much a draft right now. It would be useful to link anything you are aware of that would inform what we are doing, including physics education research. Please send possibly helpful links.

Minutes
Physics Tuning Team Meeting
April 2, 2012

Present: Jim Chisholm, Randy Davies, Bill Evenson, Adam Johnston, David Kardelis, Phil Matheson, Brad Talbert, Larry Smith, Sam Tobler, Charlie Torre, Trina VanAusdal

Bill Evenson chaired the meeting.

Announcements

We introduced team members again. We were pleased to have Brad Talbert from the Utah State Office of Education with us.

The “What Is an Educated Person?” Conference will be held at Snowbird on October 26. Mark your calendars now for this important event.

Physics Learning Outcomes

There was much discussion of the need to refine the learning outcomes (LOs) to an assessable set. It was suggested that the Associate level could focus on three categories from which assessment would sample: (1) Physics Knowledge (current categories 1-3), (2) Laboratory and Computer Skills (current categories 4 & 6), and (3) Scientific Communication and Research (current categories 5 & 7).

The March 28, 2012 version of the LOs seems adequate as a take-off point, so most of the discussion moved quickly to assessment issues (see below).

Physics Teaching Degrees

We noted that five of our institutions offer bachelor’s degrees in physics teaching (U of U, Utah State, Weber State, BYU, Westminster) and six offer bachelor’s degrees in physical science composite teaching (Utah State, Weber State, Dixie, SUU, BYU, Westminster). UVU offers a composite chemistry/physics education degree. We will return to the question of LOs for teaching degrees.

Assessment

Most of the meeting was devoted to discussion of assessment issues:

We need to expand assessment of understanding of physics concepts beyond solving problems to a close look at concepts.

We asked “what can we guarantee” in our graduates? Phil noted, to general agreement, that “grades mean something.” How can we best use them? What about signature assignments directed at specific LOs? Some institutions are experimenting with e-portfolios in which students have the responsibility to present their best work on each LO. This would be reviewed at the end of the junior year by a neutral party. Concerns were expressed about the added workload for faculty with a system like this. Would students profit from a self-evaluation and reflection essay based on their e-portfolio near the end of their program?

Capstone courses at the bachelor’s level and possibly at the associate level could play a significant role in assessment as well as connecting student learning from a variety of courses and experiences.

Randy Davies, one of our evaluation experts, reviewed various approaches to assessment. For example, we could assess student learning at the level of general instructional objectives, a sampling of detailed LOs, or at the level of each LO.

We noted that the hierarchy of sophistication we developed earlier in this project provides a basis for ratcheting up expectations from entry to associate to bachelor’s level. But it also implies that we might need to assess LOs at more than one level.

We noted overlap among the LOs, another issue that needs to be resolved, perhaps within different institutional contexts, in the design of assessment programs.

Team members will consider how these issues affect planning at their various institutions. Bill will suggest some assignments to be shared by email to help make progress.

Next Meeting

Please plan on meeting on **Friday, May 11, 2pm, at UVU**. More details will be sent out by email.

Minutes
Physics Tuning Team Meeting
May 11, 2012

Present: Jim Chisholm, Bill Evenson, Janice Gygi, Adam Johnston, David Kardelis, Phil Matheson, Brian Saam, Larry Smith, Ross Spencer, Brad Talbert, Sam Tobler, Tonya Triplett, Trina VanAusdal, David Williams

Bill Evenson chaired the meeting.

Announcements

The “What Is an Educated Person?” Conference will be held at Snowbird on October 26. Paul Gaston, one of the coauthors of the Degree Qualifications Profile and author of “The Challenge of Bologna: What United States Higher Education Has to Learn from Europe, and Why It Matters That We Learn It.” Mark your calendars now for this important event.

Physics Learning Outcomes

We talked about considering the physics learning outcomes (LOs) in three categories: physics knowledge, laboratory & computer skills, scientific communication & research, then sampling the specific outcomes for each of these broad categories. Jim Chisholm has done this for SUU. He will send us his outline. He also suggested that we look at the Weber State U Program Review documents online. Adam Johnston noted that Weber’s program review was not as detailed as what we are doing. And they essentially did the process in reverse by asking what they were measuring, then developing outcomes. This worked well as far as it went. To find it, Google Weber Program Review.

There was some concern that these broad categories would not allow us to certify that our graduates have accomplished the LOs. Since our institutions have very different contexts in terms of numbers of students, faculty loads, etc., we tried to be clear throughout that assessment must be institution-specific, while noting the value of sharing ideas with one another.

One idea was to have students present a portfolio before graduation that provides evidence of achieving each of the learning outcomes for the degree. This would work differently at different institutions. Phil Matheson suggested that each student could select their own evidence of competency in each LO. Different institutions have different challenges in reviewing such portfolios. Ross Spencer noted that portfolios he has reviewed tend to look all the same once students get the idea of what the faculty will be looking for – except for the test scores.

Bill reported that Charlie Torre at USU is working on mapping the learning outcomes to courses and developing an approach to assessment for USU. He will share his department’s progress with this team later in the summer. His current thinking is that their capstone course (Research in Physics) will play an

important role for assessment purposes, perhaps with a more stringent documentation of outcomes than they currently practice.

Bill pointed out that we have to look at assessment on several levels, e.g. course levels and graduation or capstone level, or it gets completely out of control. We can't look at 42 outcomes at the point of graduation.

Subcommittees

Bill asked that we form subcommittees to carry out the following tasks, primarily by email or telephone conference calls:

- Adapt the LOs to the associate degree level
Larry, Jim, David, Trina, and Sam volunteered. Jim agreed to chair this group.
- Adapt the LOs to the masters degree level
Brian and Ross volunteered, and we volunteered Charlie Torre. Bill will talk to them about who will chair the group.
- Adapt the LOs for bachelors degrees in physics teaching
Brian, Tonya, Brad, Adam, and Phil volunteered, and we volunteered Duane Merrell from BYU. Adam agreed to chair this group.

This work with LOs should also address levels of sophistication and benchmarks as well as the list of LOs. Larry pointed out that the statement of LOs for associate degree level should parallel what the four-year institutions will expect after two years. Similarly for the other two subcommittees.

Brad will share the state science standards as they develop the next generation version, so the physics teaching group can work in that context.

Activity in the Departments

As mentioned above, Charlie at USU is mapping outcomes into curriculum. Jim is doing a mapping for SUU with the three broader categories.

Brian reported that the U now has an advisory board that includes representatives of physics employers. They plan to use this group to inform how they restructure the curriculum. They also have an initiative for physics teaching in the Center for Math and Science Education. Hugo Rossi started this with NSF and other grants. They have a master's degree in science and secondary school teaching, but with only a few students a year. Nalini Nadkarni is now the director of the Center. Her focus is community outreach. The idea is to get these students licensed to teach, coordinating with the Utah State Office of Education on

alternate routes to licensing. Mike Hardman, Dean of Education, is serious about having his students major in a discipline, but is now interim senior VP for academic affairs.

Assessment

We discussed the problem of students meeting an LO but then losing it over time. In general, the group was not too concerned about this as long as the original understanding was sufficient that the student could look up details and know how to use them when needed later. Jim argued that a portfolio is an excellent middle ground between expecting students to keep track of everything forever and just letting learning drop after a course. David Kardelis also pointed out that mentors will already be assessing the senior project, which is likely fairly broad in terms of the LOs. They could look at a broader portfolio if needed. We thought it would be useful to consider junior year or mid-program assessment to be sure students are ready for graduation.

Ross reported that every course at BYU has learning outcomes; every class has competencies.

Bill commented that the European report on Tuning Physics has a table checking off how our current assessment via problem sets, exams, written assignments, etc. and addresses the LOs they identified. Unfortunately, they developed no real systematic assessment approach.

We discussed the value of rubrics for both assessment and making expectations explicit for the students.

Phil argued that it is the student's job to prove competence. Faculty can facilitate achieving the LOS, but it is the student's responsibility. Bill suggested that designing a portfolio the student could give to an employer might motivate students to document their learning.

Phil suggested that advisors might be assigned to follow up on students compiling portfolios.

Ross said that everything at BYU is driven by response to an accrediting agency. They want us to show that we are paying attention to what we do and that we want to get better. This connection to the accreditors will be a powerful motivator for administrators and, to a lesser extent, to faculty.

Larry warned that the assessment process could become onerous enough to discourage students from majoring in physics.

Tonya warned that many students do not start as physics majors, so their early work is not likely to be preserved in a portfolio.

Jim reported on SUU's program for an experiential requirement for every student. This is built around three courses: planning, carrying out, and writing up / interpreting. Each of the three courses entails some sort of tangible report.

Competencies at College/University Entry

Bill argued that it would be useful to consider what competencies students should bring when they begin the program. We make some assumptions, and are often disillusioned. If our assumptions about entry level are reasonable, then we should make them explicit.

Brian reported that he has just finished teaching PHYS 2210 for the first time in five years. They are bursting at the seams with 31,000–32,000 students at the University of Utah and 600 students in the 2210 course. Most students for whom this is their first physics course earn low Cs to Ds. Brian and colleagues did some surveys asking students what their preparation was – for 35% of the students (200 per semester, 400 per year) this was their first physics course. The biggest weakness is lack of facility with algebra and trigonometry. Calculus can be taught with the physics. Brad noted that high schools no longer teach a trigonometry course – it is now integrated in other high school math.

Tonya raised the problem of general education science courses. There is a lack of preparation for science at all. Should we give students a pretest? Education does that. Now we just let them come and flunk them out.

Brian noted that physics is a big service course for engineers so we need much better coordination with engineering faculty. Right now Engineering hates anything that slows students down. There are similar issues between Math and Engineering departments. With the current Utah Engineering Initiative and the emphasis on STEM education, we must make sure that students who want to go into these fields are prepared. Brian and his colleagues used Smart Physics from the University of Illinois as a comparison with the regular course. The diagnostic test came from Smart Physics.

Bill asked whether BYU is still providing a review course for returned missionaries. Ross said yes, a one block review (one-half semester).

Brad pointed out that secondary school preparation is a function of both state curriculum and also student motivations. They deal with a group of students who are young, not intrinsically motivated to take the classes. Even the most motivated students will have challenges in the secondary environment.

Bill reported that the USU History Department has prerequisites for entry to the major. They have a pre-major course at the end of the sophomore year in which they go over the bachelors level LOs so students can see what is expected of them. Jim wondered if we could require an exam to matriculate into the physics major. Bill said that historians at USU have reported that telling students what competencies are expected has changed the focus for many students from grades to LOs.

Next Meeting

After discussion we agreed to try for a September 21 meeting combined with the physics majors meeting.

Minutes
History Tuning Team Meeting
September 12, 2011

Present: Curtis Bostick, Southern Utah University; Dan McNerney, Utah State University; Isabel Moreira, University of Utah; Norm Jones, Utah State University; Susan Neel, Utah State University – Eastern; Teddi Safman, Office of the Commissioner of Higher Education; Randy Davies, Utah Tuning Evaluator, Brigham Young University; Jon Cox, Snow College; Kathryn MacKay, Weber State University; Spencer Clark, Utah State University; Axel Ramirez, Utah Valley University; John Macfarlane, Utah Valley University; Chip McLeod, Dixie State College; Marianne McKnight, Salt Lake Community College; Bill Evenson, Utah Tuning Project; Janice Gygi, Utah Tuning Project.

Excused: Don Harreld, Brigham Young University; George Henry, University of Utah; Mary Jane Chase, Westminster College.

Kathryn MacKay chaired the meeting, which began with brief introductions of all those present. Then she introduced Randy Davies, one of two evaluators who will be working with the Utah Tuning Project this year.

Randy said that the evaluators have been added to the project to help the group achieve its goals. They provide an extra set of eyes, building evaluation into what we are already doing. He briefly explained that evaluation is moving away from the summative approach of the past. He has been following Michael Patton who has introduced developmental evaluation, where the evaluator works with the team to determine what questions need to be answered. The three contributions that the evaluators will make are: 1) Act as consultants, providing an extra set of eyes; 2) Provide formative information, asking “How can we help you?” 3) Helping to create a foundation for evaluation, setting up a format, and assisting in collecting data as we proceed.

Randy was asked if he would be the evaluator working with the History Tuning Team. He indicated that he and the other evaluator, David Williams, will be working together to assist all four of the Utah Tuning Teams, so sometimes he would meet with the history team, and sometimes David would.

Kathryn announced the “What is an Educated Person” Conference to be held at Snowbird on November 4. Janice Gygi will send registration materials to the team. Holly McKiernan from Lumina will be the keynote speaker. She will be discussing the “Pulling Back the Curtain on What Matters Most – Learning,” which will be important to the work of the team this next year. There will be a presentation from SUU on experiential learning, one from USU on assessing information literacy, and one from SLCC on e-portfolios and more. Tuning teams will be involved in afternoon breakout sessions.

Kathryn indicated that the team needs to have a student member. Those who have appropriate students were asked to send nominations to Janice. Axel Ramirez asked if this could be a student

working on the history teaching degree, and Bill Evenson suggested the team could use one student from each degree, history and teaching history.

Kathryn used the notes from the April 4 meeting (attached) to structure the discussion.

Assessment

- John Macfarlane said that at UVU they are testing minimum skills. They have a mentor for each class including adjuncts and professors.
- Norm Jones said that USU has a new assessment system where professors build questions that relate to the outcomes. The test is normed.
- Curt Bostick indicated that they are using a normed test at SUU. They give it in class, because they had such a low rate of participation when it was voluntary. It has 31 statements for the student with eleven that the professor can add.
- Susan Neel asked John if he could make the UVU rubrics available to the group, and he said that he would.

Diploma Supplements

- No one had examined diploma supplements.

Syllabi and Outcomes

- Dan McInerney said that syllabi at USU begin with the learning outcomes. Professors are assured that they should not worry about how the course “measures up.” The point is to share ideas. This is a long-term cultural change. The faculty, department, and the students are transitioning to the new culture.
- Susan suggested that it would be nice to have a reservoir of syllabi.
- John pointed out that the syllabi provide good information for adjuncts.

Internships and Outcomes

- Isabel Moreira said that they do have internships at the U, and they use an advisor to supervise them.

- Marianne McKnight said at SLCC they are tying the internships to the outcomes. They will be providing interns for the Utah Historical Society.

“When are you a history major?”

- Dan distributed a packet that is used at USU to help students understand what is expected at each level of the program. Starting with the pre-history program, they explain requirements. The packet included a handout for the History Major including: History Pre-Major, History Major, History Teaching Emphasis, History Minors, and Classics. Other sheets were History Department Advising tips for History Majors, History Department Advising tips for History Teaching Emphasis, Careers for History Majors, and History classes available on-line. [These and additional materials are available on their web page at www.history.usu.edu.] Dan indicated that they are moving away from allowing entering students to take upper level courses and are gently drumming out students who do not belong in those courses. They are making genuinely profound changes in leading to the senior capstone course. They build skills gradually, incrementally.
- Isabel said that in practice at the U they shepherd students through a series of specific classes and keep an eye on the capstone class. They try to do this for history majors, but it is hard to do for students who are just taking one history class and have another major.
- Norm indicated this problem has not been solved. History is used by a lot of other disciplines. Some courses are taken almost exclusively by students in other specific majors. They try to make a distinction between history majors and others. Prerequisites may be a way to solve this problem partly.
- Bill said that physics prerequisites are self enforcing. Students cannot do the work in a course without the knowledge and skills from a prerequisite. He questioned whether this could be done for history, so that all students must have the needed skills rather than gearing the course toward students without the skills.
- John said that Banner would have to be restructured to accommodate prerequisite enforcement. If students could not get a class they needed because of a lack of prerequisites, an advisor could override the system.
- Norm indicated that another issue here is that they would lose recruits into the history major.

PRAXIS

- Axel indicated that PRAXIS, which is used for teaching majors, uses multiple choice and short answers. This seems to be testing the opposite of what history teaches, so students are pulled in

two different directions. It is very difficult because one method is focused and the other is broad.

- Dan said that USU designed their pre-major with PRAXIS in mind. He said it is important to always keep an eye on the endpoint; always keep an eye on the capstone course. They start at the end and work back. The pre-major for teaching history is different and requires different background information. Students have to diversify and take a range of classes to major in history.
- Norm pointed out that there is no “PRAXIS for Dummies.” There needs to be a pre-PRAXIS survey course.
- Randy said that PRAXIS is a minimum competency exam.
- Curt suggested that USHE needs to reconfigure their requirement. There is too much minutia in PRAXIS.
- Teddi Safman clarified that PRAXIS is an ETS exam. It provides information at the state level. She felt ETS would be open to suggestions for improvement.
- Norm asked when during the student’s coursework is PRAXIS required, and does the history department receive feedback on student performance.
- Axel said at UVU seniors take the exam. Perhaps they should take it earlier. The problem is not the difficulty of the exam but the huge variety of questions. Perhaps students need to take the exam earlier. There should be a discussion of how it fits with the common core standards.
- Spencer Clark said in Indiana, where he taught previously, PRAXIS is given the first semester of the senior year.

Break for Lunch

Discussion of the Learning Outcomes

- Isabel had two suggestions, based on information from the employer focus groups. One is that the outcomes do not have any international content. Second, they need to consider the issue of plagiarism. She said Turn It In is not adequate and a different type of assignment needs to be made.
- Susan also felt that something should be added about work habits and discipline.

- Kathryn asked for comments and asked to clarify if these changes are specific to history or more general learning outcomes.
- Norm said the team could beef up the historical skills section, and Randy commented that we often farm out the things we don't want to do.
- Bill said that in the spirit of Tuning – what the student knows, understands, and is able to do – plagiarism seems to fit with history Tuning.
- Dan suggested that in the historical knowledge section, the team could include the variety of human cultures, and in the historical skills section, the team could add familiarity with standards of accurate and ethical research.
- Chip McLeod said that he has used Turn It In, and it has been a great resource for him.
- Kathryn said we have student experiences, public history, research, and international. Do we need to put these in terms of curriculum?
- Curt said that internships with learning outcomes are useful in terms of diversity. They expose students to different work settings.
- Dan asked if the major for history teaching is really a five-year program.
- Spencer replied that the state requirements are that students be able to complete the degree in four years.
- Dan commented that, in the terms of transparency, students need to know what period of time it actually takes.
- Spencer noted that in Indiana they have a five year master's degree for this. He indicated that two reasons some students take longer than four years are problems with sequencing of courses and difficulty finding student teaching placements in the Logan area.
- Axel said it is possible to graduate in four years if the students just do the minimum.
- Curt said it is now possible to add to the course of study and still receive government money.
- Spencer said that in Indiana students could complete the course in four years, but it was normally five. They required 15 hours of history, 15 of social studies, and fifteen in a third area. This makes students more knowledgeable.

- Kathryn said that we need further discussion about the history teaching major.

Other Program Changes

- Norm said they are starting a new methodology course with librarians. The history department is teaming with them. Because professors cannot keep up with the nature of research, they are bringing in professionals. This will be a 3000 level, capstone preparation course.
- Kathryn asked what experience team members had in fitting pedagogy with outcomes.
- Bill said that an important thing would be to give students the outcomes early in their programs as they do at USU.
- Isabel discussed supplementary instruction in which they train undergraduates to teach in classes that are run by professors. This is a program run through the university. Students have to have taken the class and received an A, and they have to take a seminar.
- Norm said that USU has 30 to 35 undergraduate teaching fellows. They are not teaching but are working with the teacher.
- Kathryn said that at Weber students who are recommended by a professor can take a certification program and qualify as tutors, and Susan commented that peer mentoring appears to be the most successful.
- Norm said that students will ask other students (peers) many things that they wouldn't ask a professor.

Internships

- John reported that a professor at UVU is using a lot of interns to do oral histories of the Viet Nam war. The audio and video recordings are then available in the library.
- Kathryn said that Weber has a wonderful partnership with small museums through the humanities council. They are trying to be more mindful about how to find internships and partnerships. They try to nurture contacts and do not want internships to be too difficult or onerous.
- Curt asked if an internship could be combined with supplemental instruction, but Norm said that you really need to be able to fire the supplemental instructors, so it is best if they are paid rather than being enrolled in an internship.

- Janice said that some of the participants in the focus groups said that they wanted graduates to have internships, but they realized the difficulty of providing internships for the large number of students who would need them.
- Kathryn suggested that the team have a reservoir of internship materials including outcomes, contracts, or whatever is used to make the internships work.

Assessment

- Kathryn asked if anyone has been involved in considering assessment. She said that American Institutions is designed to make students better citizens. She said they give questions at the beginning and the end of the course. It is not a multiple choice or short answer test, and it is an assessment piece.
- Susan said that she gives a citizenship test, and she sends those who fail out in the hall with cleaning materials to clean the windows. She said it teaches them what it means to be a good citizen.
- Isabel suggested that students should be encouraged to register to vote. Kathryn noted that not all her students are citizens, but Isabel said those who are should be registered.
- Kathryn noted that some of the table talk had been about international students and plagiarism. Students are involved in social media which makes the plagiarism issue more challenging.
- Norm said that facebooking is fascinating. He has been thinking of it as an opportunity to build something where everyone could pool their information and share common research experience.

Possible Future Discussion Items

- Outcomes and curricula for teaching history majors.
- History and the new social media.

Upcoming Events

- If at all possible, plan to attend the “What is an Educated Person?” Conference, November 4 at Snowbird. Janice will send registration information.
- Majors’ Meetings will be on September 30. Upcoming exciting new jargon will be introduced, including the Degree Qualification Profile (DQP). Business left over from last year’s meeting will

be discussed including articulation and common course numbering. Essential Learning Outcomes from LEAP will be reviewed. How do we know that we are achieving the outcomes? What is the relationship between what we are doing with outcomes and measuring the outcomes?

Lumina Grant

- Janice discussed the grant that was just received from Lumina. For the history and tuning teams, the next steps are 1) to take the learning outcomes into the departments and implement them including having them on syllabi, planning curriculum and pedagogy around them, and assessing student mastery of the outcomes; and 2) developing learning outcomes, curriculum, pedagogy, and assessment for the degrees in teaching history and physics. The grant also allows Utah to begin Tuning elementary education and general education mathematics.

Wrap-up Suggestions

- The team discussed the possibility of having a web page where information for the team could be posted. This could include: 1) Examples of syllabi that include learning outcomes; 2) Assessment strategies; 3) Pedagogy and experiences; 4) Internship materials.
- The goal for the next meeting is to report on conversations with colleagues. Each team member should take the learning outcomes to their departments and discuss ways to implement them. A second item for the next meeting will be to discuss appropriate outcomes for the degree in teaching history.
- Norm recommended that we hold a larger gathering that would include as many historians as possible to encourage them to engage in this process. It could be held in a public history venue.
- Janice mentioned that she had sent the executive summaries of the focus groups to the focus group participants. The employers had wanted to students to have a public history degree, and in her email Janice had told them that Weber has an emphasis in public history. One participant replied that employers did not want an emphasis; they want a master's degree in public history. Kathryn said Weber had discussed this, but did not want to offer it.

Evaluator Comments

- Randy said he thought the team had a good handle on a lot of the issues. In developmental evaluation, there are three kinds of programs: simple, complicated, and complex. The Tuning project involves social complexity. It requires buy-in from all of the people in the department. Assessment is the weakest link. The departments need measurement tools. They need to know if students are meeting the outcomes. Changing attitudes is complex.

Minutes
History Tuning Team Meeting
February 10, 2012

Present: Curtis Bostick, Spencer Clark, Jon Cox, Randy Davies, Nadja Durbach, Bill Evenson, Janice Gygi, Adina O'Hara, George Henry, Norm Jones, Rick Kelson, John Macfarlane, Kathryn MacKay, Dan McNerney, Chip McLeod, Marianne McKnight, Isabel Moreira, Karleton Munn, Susan Neel, Lindsay Pennington, Axel Ramirez, Teddi Safman, David Williams.

Kathryn MacKay chaired the meeting.

Randy Davies asked team members to please sign up for a time when he or David could contact them for an individual interview.

Reports on Individual Institutions

Marianne reported that at Salt Lake Community College they are looking at outcomes and assessment course by course.

Jon indicated that at Snow, history is a two-person department, and he feels they are on track with Tuning.

Isabel said that at the University of Utah they are beginning to be on track. She has distributed the learning outcomes. Now the department is considering how to implement the outcomes. They are looking at using a senior seminar for assessment.

John reported that Utah Valley University is in good shape. They had a meeting at beginning of fall semester and are outlining basic standards at different levels for each of the outcomes. The GE committee has general learning outcomes, and the history department is looking at specific outcomes. There is a big push to increase internships, which are some of the better things, especially for students. The department still needs some more specific details.

Chip said that at Dixie State College, they are in the midst of lots of things, and learning outcomes have recently been discussed within the context of Tuning and syllabi as well as program reviews for accreditation. They have reached some useful agreement about basic objectives in fundamental courses.

Suggestions for Additional Help from the History Tuning Team

Kathryn asked if there is any way that the Tuning team can be additionally helpful in this. How could this group be helpful in planning?

John indicated that one of the most useful things is sharing best practices among institutions.

Susan suggested that it is helpful to see these things in writing.

In anticipation of the spring gathering, Kathryn said she would like to see some things written down. An example or two of something that has worked for each institution would be helpful.

Jon said it was helpful to hear from UVU, with a page outline for individual courses. Is that possible for other institutions?

Dan said that Weber has clear outlines for expectations for reading and writing for specific courses. This would be helpful for everyone.

Chip said at Dixie they are working on a few of the things conceptually but nothing as uniform and concrete as what we have, nothing formulaic.

Chip said that at Dixie they just hired a third historian, and they are happier when they don't talk about general education.

As director of general education, Norm said he sympathized with Chip. He noted that AAC&U has a new document on assessment that might be useful to see what general education is doing with History 1700.

Chip said we need to see what universe we are all inhabiting (meaning how much of the work can we realistically accomplish). He said he is not sure we are always doing the work as well as we should, because it is huge.

Discussion of Specific History Courses

Norm said we need to put into this discussion the difference between History 1700 and History 2700. History 2700 is where the discussion begins. Should we invite other folks who are involved in a discussion of American Institutions? He thinks this is a valuable discussion. For example economics can be a choice for the American Institutions general education requirement. He is not comfortable with that.

Kathryn noted that American Institutions includes economics and political science. If we look at the U.S. citizenship quiz, there are very few questions that have anything to do with economics. There is a small bank of questions that have to do with U.S. economics.

Teddi said we can start circulating the information now, and Norm asked if people wanted this for the majors or for Tuning. Teddi said to let her know what is going to be useful, and it can be

done. History needs to have a meeting about what American Institutions means to history before other disciplines are invited.

Report from Dan McInerney on the recent American Historical Society (AHA) Meeting

Dan said that Lumina has not yet made a public announcement that it has entered into an agreement with AHA to develop outcomes. Dan met with AHA and then met with people from Tuning and from the Institute for Evidence Based Change (IEBC). There was a discussion of learning outcomes, and why people engaged in the work. What do we mean by learning? What is unique to the discipline? The colleague who is in charge of the project is Professor Ann Hyde. At the end of two days of discussion, they had developed a preliminary set of outcomes.

Dan spoke with Jim Grossman, executive director of AHA, and discussed the ideas of Tuning in the context of the discipline. These are not conflicting initiatives. There are many points of cooperation and overlap amongst groups. In the Denver meeting, it was clear that there were some general directions that this project will take. Information should be forthcoming. Jim Grossman is deeply involved in this project. Bill Cronon, president of AHA, is also deeply involved. The discussion included a group representing every region. Jim suggested calling the project AHA Tuning: Faculty Led (something that had an acronym of FLASH). The group came to complete agreement that the word standards will never enter into the discussion. One of the central learning outcomes should be civic engagement. Everything we have talked about in Utah since 2008 is going to make an appearance in these outcomes. A message to take back to your campus is that this is always going to be a work in progress. Our team should not tinker with the process until after AHA has a statement on this.

The next meeting of the AHA group will include a total of 60 historians. Anyone with an interest in this can complete an application form, including department heads, deans, and provosts. In June there will be a two or three day meeting with some kind of clear discussion of outcomes. At the January 2013 AHA meeting in New Orleans there will be a wider discussion. AHA is itself interested in developing meaningful, substantive, workable outcomes for historians across the nation. We need to be open to revisions of the outcomes that we have developed. We have been some of the people to set the groundwork for this, but it is not a time to sit back and do nothing. We should be prepared to help our colleagues. The entire focus of the conversation was on the topic of learning.

Marianne asked about course-specific outcomes. Dan replied that AHA is very leery of micromanaging this project to the point of articulating a core curriculum. It doesn't want to define a curriculum for our discipline. The goal is to define what we want students to know, understand, and be able to do at the associate's, bachelor's, master's level. They are also looking at the Degree Qualifications Profile (DQP) process. AHA wants to pull K-12 teachers into this discussion.

Teddi reported that the current effort is bold and includes the WICHE Passport, the LEAP project for AAC&U, and Tuning. They all want to get away from considering courses and talk about learning outcomes and competencies.

Dan said this captures precisely the tenor of the talks in Denver. They made clear how different our resources are and how different our institutions are. They do not want to marginalize any department or make any department feel inadequate. Another important theme was that we always need to meet people where they are, not where we want them to be. They also realize that Tuning does not suddenly appear in some sort of assessment vacuum. Tuning will arrive on campuses in a context of current assessment. The point is not to burden faculty with another initiative but, rather, to let academic officers see how valuable it is to use initiatives that are faculty led and are focused on the knowledge, skills, and competencies that students have.

Isabel asked about the conversations on civic engagement. Dan said they wanted to get a sense of the way that many departments supply courses like our American institutions courses and use these as a base to introduce students to a discussion of how the republic works. Secondly, they want to include a component of civic dialogue, a part of building a community on a foundation of debate. This brief discussion will be fleshed out more in June.

Norm said he has been placed on a quality collaborative for civic engagement for AAC&U. He is concerned that there is no content involving the civic engagement issues. He felt at the meeting as if it was service learning. We need to come up with our own definition.

Dan said that AHA is not thinking of this only in classes on the U.S. but also in an international, intercultural context.

Dan said that Jim Grossman talked about the very troubling and puzzling questions of measurements and metrics. How do we show what the students have learned without impinging on academic freedom? They discussed some ways of thinking about how to measure outcomes. 1. One comes from course management systems. Some colleagues from California use Moodle. We may use Canvas. These provide a nice forum for discussion and are very convenient. Canvas and Moodle have an assessment link. Students will do an essay on the computer and submit it. The faculty can use comments and rubric evaluations. Students can have information about the way that about six or seven different skills are tested on this. Canvas can give a report that looks at six or seven different skills for the whole class. Which competencies were weaker and which were stronger? It allows the professor to tinker with the course in midstream. Dan is going to test this. It also allows the department to gather some numbers and report to external reviewers, such as accreditation agencies. This is a kind of nonintrusive way of starting to gather meaningful metrics. 2. IDEA is a course evaluation system that was rolled out at USU. The professors can ask their own distinctive questions in the course evaluation and put in learning outcomes from the syllabus. It is a nonintrusive way of gaining information. They want the AHA faculty to see how they can tie learning outcomes to

evaluations. It is a hard sell when we talk to people about how we measure what we have been doing in the classroom.

Report on the Conference of the Association of American Colleges and Universities - Shared Futures/Difficult Choices: Reclaiming a Democratic Vision for College Learning, Global Engagement, and Success

Norm said we have to get the system to quit obsessing about how many bodies we put through the system without looking at the quality. Presentations included “Academically Adrift” and “We’re Losing Our Minds” You don’t learn unless you put a lot of time into learning. They said business and education are not preparing students to be educated people the way that liberal arts are. There has been a decline in the amount of reading and writing that has been done in the past few years.

Bill noted that Norm got it right. One of the things that Bill took away from the meeting was that we are not paying attention to student learning. We need to put student learning at the top of the list. Norm said that most states don’t have an American Institutions requirement. We need to do something with the voluntary service that students do.

Kathryn said she is impressed with the literature that says we have to teach civics. Teaching civics is one of the critical things to help students understand what we need to know to be involved with the process.

Dan said that on the first day of the AAC&U meeting there were three special sessions on Tuning in U.S. and European Union (EU). There are 47 nations in EU and multiple institutions in U.S. Holly McKiernan said that among the key issues are questions about the attainment levels of students, their knowledge and skills. With Tuning, they have tried to aspire to transparency in what learning means, not just to the student, but also to the community. The goal is a smooth trajectory from K-12 through the university. This is what we have been discussing here in Utah. Nothing is more important in higher education than what these degrees represent. What we have learned in Europe and what we have learned from the U.S. is that we are well ahead in Utah.

Janice reported that the theme of the conference was civic engagement. The report that was distributed at the conference, “A Crucible Moment: College Learning & Democracy’s Future,” has some valuable information and is available on the AAC&U website (www.aacu.org).

Discussion of the Degree in Teaching History

George said that he teaches at East High School in Salt Lake City and also covers the history teacher training courses at the University of Utah. His questions for students are: do you know your history, do you understand, and are you able to teach it. What the students are learning is

key. How do they relate this to the common core requirements? How do they go about organizing instruction? In terms of teaching history to secondary students, we need to realize that historical thinking is not natural to high schools students. They are future minded. They need to know how the past is going to inform their present and future. Instead of the knowledge approach (Bloom's taxonomy), we need to make sure that students know what the most important things are to be taught, and how they go about teaching them using the process skills that are designed to teach history.

Axel said that this is very exciting for teacher education. The more modeling that takes place, the better. We want to make the conversation about outcomes as explicit as possible. History professors need to explain why they have students write a paper and why they assess it in a certain way. Students need to know how historians think. This can trickle down to students so they see the purpose of what they are doing.

Spencer noted that the program at Utah State has benefitted from the Tuning process. History students have good knowledge. Spencer works on pedagogy; he teaches a methods course.

Karleton noted that the class in teaching history at the University of Utah is only one semester. There should be more than one course.

Norm asked for clarification of what is done at the University of Utah.

George said it is not as much a capstone as basic training. Many have not engaged yet in the education school at the U. They tend to look at this more as this is how you begin this process. It allows them to take the content area where they are most comfortable and develop lessons and unit plans. They don't give too many variables to handle. They give them a blueprint of how to create engaging lessons. They need to understand basics and then get on with life. A lot of people have a difficult time understanding that teaching history is a unique career path. They also have to help future teachers learn the value of writing.

Norm reported that they have a new course on history research. They are having some interesting conversations. But it is best if the students learn that they have come to it by themselves. Are you able to get the resources that you need from the internet and other sources?

Axel noted that with the common core for K-12, reading and producing historical knowledge is important. Students need to hear that often so they understand the working skills of the historian. That should be made transparent. There should be a discussion of what the department wants in the freshman level course and other levels. The students should know what they need to do as public school teachers.

Involvement of Students in Developing Learning Outcomes

Rick said that the only real involvement for students in developing course outcomes is the teacher evaluation process at the end of the course. He asked if students were involved in developing the history learning outcomes. Norm reported that in first round of Tuning we did have students involved in developing outcomes. We have also given students the outcomes and asked for feedback.

Dan said he has purposely asked students in lower and upper division classes, what they think about the rubrics. USU has done surveys with employers, faculty, and alumni and has pages of comments from students. Students are critics and skeptics. Some resist the idea of rubrics, but in an open, non-threatening request of opinions from students, there was overwhelming support for the use of rubrics. They provide clarity and transparency, stating up front what we hope students will get out of this exercise. Students find guidelines and outcomes very useful. What are they getting out of history?

Kathryn suggested asking students how they see themselves as historians. What kind of skills have they obtained?

Norm said they do exit interviews with seniors. One of the problems is that students don't realize they are history majors until they graduate.

Future Plans and Announcements

Kathryn said that the next step for the team is sharing resources.

Janice announced the Degree Qualifications Profile conference on April 2. It begins at 9 a.m. and will be held at the Marriott Hotel Downtown at City Creek Center (75 South First West, Salt Lake City). Please plan to attend. The Tuning teams will meet that afternoon to continue this work.

The "What Is an Educated Person?" Conference will be held at Snowbird on October 26. Mark your calendars now for this important event.

Notes from History Tuning Team Meeting
April 2, 2011

Topics discussed at the 4 April 2011 meeting

- Learning outcomes = assessment
 - Courses could be selected for assessment in yearly cycle
- Diploma supplement – to explain what student has learned
- Train students to judge their own progress towards learning outcomes
 - Make outcomes explicit to students
 - How do students demonstrate that they have learned
- Assessment = implementation = pedagogy
- Employers are looking for persons who can research
- Internships should have outcomes listed
- When are you a history major?
 - At what point are student ready to be history majors?
 - Are 2700/2710 the entry to the major – when students begin to learn the tools of the discipline?
 - Should there be a pre-major as part of GenEd? (USU)
- Should PRAXIS be taken into account in terms of required courses, etc.?
 - The test is “World and U.S. History: Content knowledge”
 - Content categories
 - World history pre to 1400 B.C.
 - World history 1400 to 1914
 - World history 1914 to present
 - U.S. history to 1791
 - U.S. history 1971 to 1877
 - U.S. history 1877 to present
- The next meeting of the History Tuning Team will be June 15 at 1 p.m. at the Board of Regents Building

Minutes
Utah Mathematics Tuning Team
October 21, 2011
The Board of Regents Building

Present: Amanda Cangelosi, University of Utah; Dan Coster, Utah State University; Michelle Larson, Utah State University; Paul Talaga, Weber State University; Ron Skocki, Weber State University; Ben Moulton, Utah Valley University; Marty Larkin, Southern Utah University; Scott Mortensen, Dixie State College; Jonathan Bodrero, Snow College; Doug Richards, Salt Lake Community College; Liz Herrick, Westminster College; Steven McKay, Brigham Young University; Teddi Safman, Utah Commissioner's Office; Janice Gygi, Utah Tuning Project.

Joining via conference phone: Patt Allen, Dixie State College; Bill Evenson, Utah Tuning Project.

Excused: Henry Zwick, Utah State University – Eastern; Lynn Adams, Utah Valley University.

Evaluators:

David Williams, one of the Utah Tuning evaluators, explained that they will be using developmental evaluation. They will provide helpful feedback along the way and are here to help.

Randy Davies, the other evaluator, explained that our goals will define their needs and asked for information from the team.

- How did you become involved in Tuning? How were you selected?
- Why do you think you are here? What will you be doing?
- What are your expectations both personally and for your department?
- What is the biggest question that you have about all of this?

The team members discussed their answers.

- Generally, the team responded that they did not know what the project is about. What is a learning outcome?
- BYU has spent a lot of time on learning outcomes.
- What does the job market want the team to do?
- The team wants to improve student morale and understanding.
- They are concerned about how to get administrative buy in.
- They are constantly seeking ways to show they are teaching students effectively.
- There has been some discussion about the Tuning Project already.
- Higher education needs to be aware of the Common Core Standards that have been adopted for public schools throughout the state.

The Tuning Project.

- The team watched a video about Tuning that was produced by the Lumina Foundation for Education – <http://www.luminafoundation.org/newsroom/topics/tuning-adventures-in-learning.html>.
- The team needs to tie this to the skill set desired by employers.
- One member commented that he would hate that to be our only objective. We want students to be well educated, critical thinkers. Why are they taking this course?
- General education mathematics is tricky. They may never use it again. They may take general education mathematics in order to go into a specific discipline and may use it there.
- Are we developing tools or thinking processes? We want students to be able to analyze and dissect a situation. This should tie into the learning outcomes.
- Students need to get a better feel for why they are taking the class. We will have learning outcomes, but what about student expectations? Communication with students is important. We have to let them know what they will get out of it.
- What does quantitative literacy mean? MATH 1030 is the quantitative literacy course in the public institutions.
- There may be other courses, outside of mathematics, that teach quantitative literacy. The team wants to focus on quantitative literacy that is taught in mathematics courses.
- If the team identifies learning outcomes and assessment methods, they can bridge the gaps between MATH 1010 and K-12 math.
- The team needs to document what others want. Many departments have looked at this. What do we need to teach?
- Should calculus be included? The first semester of calculus is the gatekeeper to business, but in some institutions business calculus is taught in the School of Business. BYU also teaches finite math, a course intended to help business majors.
- The team needs to brainstorm learning outcomes. What about linear relationships and functions with inputs and outputs?
- Course objectives should be developed from the instructors' viewpoints and from students' viewpoints.

Next Steps.

- The team wants to have time to discuss outcomes with their departments before the next meeting.
- The public institutions in Utah have common course numbering. This needs to be coordinated with course names and numbers for the private institutions.
- The next meeting will be held in January. A doodle will be sent to survey members as to the best dates and times.

Minutes
Utah Mathematics Tuning Team
February 3, 2012

Present: Keith White, Utah Valley University, Ron Skocki, Weber State University, Paul Talaga, Weber State University, Bill Evenson, Utah Tuning Project, Liz Herrick, Westminster College, Randy Davies, Utah Tuning Project, Jonathan Bodrero, Snow College, Lynn Adams, Utah Valley University, Diana Suddreth, Utah State Office of Education, Amanda Cangelosi, University of Utah, Janice Gygi, Utah Tuning Project, Steven McKay, University of Utah, Doug Richards, Salt Lake Community College, Heather Brooks, University of Utah Student, Dan Coster, Utah State University, Scott Mortensen, Dixie State College, David Williams, Utah Tuning Project.

Joining via IP Video: Michelle Larson, Utah State University, Kathy Andrist, Utah Valley University, Brad Roundy, Utah Valley University student.

Jonathan Bodrero, Chair of the Mathematics Team, conducted the meeting, which began with introductions of team members.

Randy Davies, one of the project evaluators, announced that they would like to set a time to call and/or do video conferences with each of the team members. He passed a list for members to indicate an appropriate time for such a meeting.

Jonathan gave a brief summary of the Tuning project. It started with the Bologna process in Europe where they wanted to be sure that degrees were consistent across countries. They identified important learning outcomes and determined ways to measure those. The Tuning project in the United States is not a cut and paste of the European project. Utah has Tuned physics and history at the associate's, bachelor's, and master's degree levels. This year Utah received additional funding to Tune elementary education and the general education piece of mathematics.

Jonathan said that we want to look at Common Core outcomes. What are the characteristics and hallmarks of what we can expect from a math class.

Keith noted that teachers are under constant pressure to change developmental math. We need to look at what developmental math serves and to identify the needs of other groups. What quantitative, analytical kinds of skills are needed in today's world? Can we assume that what we've always done is the best way to teach these analytic skills? What is quantitative literacy today? What is the best way to teach that? We need to survey employers and students to determine what a recent graduate today needs to be able to do. As departments get into calculus and beyond, they don't need this. Math is a service department. What tools do students need to have? What skills should they have mastered when they come into your class? We should develop one coherent set of outcomes. Instead of asking what courses they need, ask what skills do they need?

Steve said that at BYU there are two different areas where they are working on learning outcomes. They have a dean of general education, the math faculty, and a general education panel. Outcomes are in place for each area. For math in general education languages and learning, these are generic quantitative literacy requirements. Three outcomes are those that any general education math course is expected to fulfill. All departments and courses have learning outcomes, which are assessed through exit interviews and peer evaluations of courses. BYU has learning outcomes for all of courses. Math 110, college algebra (1050 in state schools) has outcomes but they may not be the kind of learning outcomes we are want.

We are looking more for general learning outcomes, which can be refined for individual courses. For example, one who is generally educated in the mathematics area can solve problems at the appropriate time. How that is addressed by each course may be different.

Randy pointed out that most of other Tuning teams deal with outcomes where the whole the department touches on all of the outcomes. In the math group, there is no set of courses.

Michelle noted that the common core standards differ between general concepts and practices. Broader objectives are a way to articulate what the math practices we want students to be able to do.

Lynn said that we can't just touch on these once. They must have to do it in three or four classes, and need to see it for two years. We have to be more consistent in courses (other than just math courses).

Steve said that there are two different things. Some students need the skills for a future course, while others just need skills for life, and they don't affect major, but we want students leaving the university to have those skills. Lynn agreed that is a limitation of the project.

Keith agreed that Lynn's statement tells us precisely what we should be doing. Now we focus on skills and tell students they will not remember this. They don't retain skills. General education math could give an overall conceptual understanding of quantitative issues that they can take any way they want to. Let individual classes teach practice.

Amanda said that we need some sort of balance and need to preserve math for some students. We need an opportunity to build classes that pass down the intellectual tradition and folklore of math.

Bill Evenson suggested that they team needs to focus on the larger issues defining what we are trying to accomplish with the GE math requirement: what are the goals, what do students need to know, understand, and be able to do in order to accomplish those goals? All of the GE math courses should bring students to achieve these GE learning outcomes, but all these courses also do a variety of additional things. We should not get caught in the current courses, possibly getting the GE goals and the other goals of the courses mixed up in inconsistent ways. If we take a high-level view of what it means or should mean to fulfill the GE math requirement, then we can let students see how to accomplish that and choose a path with additional math (or not) according to their needs.

Lynn said that some of the skills are intuitive, and intuition development is more subtle. Steve agreed that most textbooks do not even try to teach intuition. Lynn noted that half of outcomes of the common core are in intuitive areas. Steve said it is difficult to develop intuition without the skill set. Students have to be able to deal with the symbols.

Lynn said that in mathematics, there is a continuum. At one end, we have exact answers, and at the other end, we have chaos, and the part that is exploding is chaos. It goes from exact answers to no answers at all, and we have to figure out where we are and what tools to use. Math creep is substantial. There is a clear relationship between algebra and everything else.

Keith said what is general education? Is it a tools-based approach or a liberal-education approach? Math, more than any other subject, raises that issue. What should we be teaching? What should we be helping them to learn?

Heather indicated that she is an applied-math major and is planning to go to graduate school. She is a supplemental instructor in math at the University of Utah where she does TA type discussions with math 1010 students, so she has seen the issues from both sides. Students remember algorithms but don't know how to apply them, don't know how to solve problems.

Brad is also a math major and is graduating this year. He started college 10 years ago and started out in math 990. He worked his way up. Math was his favorite subject. He has been at Utah Valley University for three years and is now a supplemental instructor.

Dan said that we have no problem assessing students acquired skills, but it is harder to assess and even teach conceptual skills.

Kathy reported that Utah Valley University has completed one round of assessment in general education math. The results may not have much meaning yet. They have struggled with the learning outcomes. She said that the University of Utah has a rubric with clear, precise learning outcomes. She recommended checking their web site.

Paul said that at Weber State College, over the last couple of years, they have developed mission statements for each of generic areas. They adopted the mission statements from the Regents Task Force on Quantitative Literacy. They now are trying to show how each course meets those outcomes. However, the Utah State Board requirements are more skills based and may not be as general as we want.

Diana noted that the part that Jonathan shared is only a piece of cores standards; the other part is broader. It is a mistake to think it has to be either/or. What we desire most is a piece of each of those things (skills/ folklore/etc.)

Dan said that a broader perspective is what we should be looking for, including knowledge, skills, and thinking. Jonathan noted we need to examine what a student knows, understand and is able to do.

Jonathan suggested that the group do some brainstorming concerning what other disciplines need from general education math. Ideas that were generated include:

Students need to be able to apply mathematical content to real world problems, which is the reason skills are there.

Do we expect the students to have applied it in class or that they will be able to do it once they exit from the university. There is a difference between “students will do this” and “students will be able to do this” and have a skill that will be useful later in life.

Students will be able to understand when to apply skills to real world problems and be able to recognize that math is useful in the world.

How will outcomes be assessed; we can't assess them 20 years down the road. We have to be able to demonstrate it while they are still in the institution. Some are difficult to assess.

We want students to be able to critique quantitative information and know exactly what that means. They should be able to critique a logical argument, which is a different skill. Logical reasoning is a mathematical thing. We ignore logic and focus on skills.

We want students to use math in their own lives and own decisions. For example, they should understand mortgages and payday lending. They should be able to apply mathematical reasoning to everyday problems.

Bill noted that the physics team looked at different levels of sophistication for their outcomes. They had seven general outcomes and then had specific examples.

Some of the common core outcomes should be included.

Students should understand estimation and number sense and be able to determine an approximate solution or approximate value. This is hard to assess but critical.

Diana noted that this doesn't seem like a higher education concept. Student should learn this from public school. Don't put things on the list that are not higher education's job. Rather, higher education should reinforce or extend the concepts. We need constant forward motion and eternal review.

Understanding formulas, graphs, and tables is important.

Jonathan asked what minimum “incomes” we can expect. What skills can we expect entering students to have? These may be mostly specific skills such as being able to convert between mathematical symbols and real world skills.

Steve noted that there are very inconsistent abilities among students coming from high school.

The overall objectives should be broad with specific ideas for classes. They should be appropriate developmentally and at the level you are assessing.

Students should have a numerical sense and a certain competency level. Teachers in courses such as business calculus have to go back and teach basic skills, but the class needs to be all together so we can focus on what needs to be taught. More competency level at high school is important. It is hard to have to go back and focus on what they should have learned in previous classes.

We should be able to assume common sense things and reinforce these things throughout a program. Students should be able to tell if they are answering the things that they want to answer.

Should we assume that high school skills are being taken care of with new common core? Should we be asking what we should be doing for students who are ready for college?

We need to fine tune basic math skills; students need is for relatively low level math. Courses such as calculus and statistics can be taught in disciplines.

Liz suggested that we should include the beauty, creativity, value, and history of math. One subgoal should be that students should not hate math. Another outcome would be for students to become parents who would not scare their kids about math.

We may want to look at what math is instead of how it can be used.

It is important to teach where things came from. Use math 1010 to create someone who will become a math major and help the students understand that it is not just formulas.

Some of the beauty of math might be what you can use it for. We should summarize patterns.

Amanda recommended the Vi Hart videos on UTube.

We should also examine the role of technology in math/ Do we just use technology as a way to deliver content? We should have enough use of technology so students can use it later. Is there a learning outcome with the use of technology?

Jonathan’s summary of the suggested outcomes is:

Learning Outcomes (brainstorming)

Students will be able to apply mathematical knowledge to real world problems. / Be able to apply mathematical reasoning to everyday problems.

Students will be able to understand when to apply mathematical knowledge.

Students will be able to critique quantitative information (including recognizing strengths, determining validity, identifying assumptions, ...)

Students will be able to reason logically.

Students will be able to convert between English language and mathematical representation of a situation.

Students will appreciate the beauty, creativity, and value of mathematics.

Students will be able to use technology appropriately.

Jonathan announced the upcoming meeting about Degree Qualifications Profiles (DQPs). It will be at 9 a.m. on April 2 at the Downtown Marriott Hotel in Salt Lake. Carol Geary Schneider will be the keynote speaker, and she will discuss the relationship of Tuning and DQPs. After lunch there will be breakout sessions for the discipline teams. This is an important meeting for all team members. Please plan to attend.

Minutes
Utah Mathematics Tuning Team
February 3, 2012
The Board of Regents Building

Present: Keith White, Utah Valley University, Ron Skocki, Weber State University, Paul Talaga, Weber State University, Bill Evenson, Utah Tuning Project, Liz Herrick, Westminster College, Randy Davies, Utah Tuning Project, Jonathan Bodrero, Snow College, Lynn Adams, Utah Valley University, Diana Suddreth, Utah State Office of Education, Amanda Cangelosi, University of Utah, Janice Gygi, Utah Tuning Project, Steven McKay, University of Utah, Doug Richards, Salt Lake Community College, Heather Brooks, University of Utah Student, Dan Coster, Utah State University, Scott Mortensen, Dixie State College, David Williams, Utah Tuning Project.

Joining via IP Video: Michelle Larson, Utah State University, Kathy Andrist, Utah Valley University, Brad Roundy, Utah Valley University student.

Jonathan Bodrero, Chair of the Mathematics Team, conducted the meeting, which began with introductions of team members.

Randy Davies, one of the project evaluators, announced that they would like to set a time to call and/or do video conferences with each of the team members. He passed a list for members to indicate an appropriate time for such a meeting.

Jonathan gave a brief summary of the Tuning project. It started with the Bologna process in Europe where they wanted to be sure that degrees were consistent across countries. They identified important learning outcomes and determined ways to measure those. The Tuning project in the United States is not a cut and paste of the European project. Utah has Tuned physics and history at the associate's, bachelor's, and master's degree levels. This year Utah received additional funding to Tune elementary education and the general education piece of mathematics.

Jonathan said that we want to look at Common Core outcomes. What are the characteristics and hallmarks of what we can expect from a math class.

Keith noted that teachers are under constant pressure to change developmental math. We need to look at what developmental math serves and to identify the needs of other groups. What quantitative, analytical kinds of skills are needed in today's world? Can we assume that what we've always done is the best way to teach these analytic skills? What is quantitative literacy today? What is the best way to teach that? We need to survey employers and students to determine what a recent graduate today needs to be able to do. As departments get into calculus and beyond, they don't need this. Math is a service department. What tools do students need to have? What skills should they have mastered when they come into your class? We should develop one coherent set of outcomes. Instead of asking what courses they need, ask what skills do they need?

Steve said that at BYU there are two different areas where they are working on learning outcomes. They have a dean of general education, the math faculty, and a general education panel. Outcomes are in place for each area. For math in general education languages and learning, these are generic quantitative literacy requirements. Three outcomes are those that any general education math course is expected to fulfill. All departments and courses have learning outcomes, which are assessed through exit interviews and peer evaluations of courses. BYU has learning outcomes for all of courses. Math 110, college algebra (1050 in state schools) has outcomes but they may not be the kind of learning outcomes we are want.

We are looking more for general learning outcomes, which can be refined for individual courses. For example, one who is generally educated in the mathematics area can solve problems at the appropriate time. How that is addressed by each course may be different.

Randy pointed out that most of other Tuning teams deal with outcomes where the whole the department touches on all of the outcomes. In the math group, there is no set of courses.

Michelle noted that the common core standards differ between general concepts and practices. Broader objectives are a way to articulate what the math practices we want students to be able to do.

Lynn said that we can't just touch on these once. They must have to do it in three or four classes, and need to see it for two years. We have to be more consistent in courses (other than just math courses).

Steve said that there are two different things. Some students need the skills for a future course, while others just need skills for life, and they don't affect major, but we want students leaving the university to have those skills. Lynn agreed that is a limitation of the project.

Keith agreed that Lynn's statement tells us precisely what we should be doing . Now we focus on skills and tell students they will not remember this. They don't retain skills. General education math could give an overall conceptual understanding of quantitative issues that they can take any way they want to. Let individual classes teach practice.

Amanda said that we need some sort of balance and need to preserve math for some students. We need an opportunity to build classes that pass down the intellectual tradition and folklore of math.

Bill Evenson suggested that they team needs to focus on the larger issues defining what we are trying to accomplish with the GE math requirement: what are the goals, what do students need to know, understand, and be able to do in order to accomplish those goals? All of the GE math courses should bring students to achieve these GE learning outcomes, but all these courses also do a variety of additional things. We should not get caught in the current courses, possibly getting the GE goals and the other goals of the courses mixed up in inconsistent ways. If we take a high-level view of what it

means or should mean to fulfill the GE math requirement, then we can let students see how to accomplish that and choose a path with additional math (or not) according to their needs.

Lynn said that some of the skills are intuitive, and intuition development is more subtle. Steve agreed that most textbooks do not even try to teach intuition. Lynn noted that half of outcomes of the common core are in intuitive areas. Steve said it is difficult to develop intuition without the skill set. Students have to be able to deal with the symbols.

Lynn said that in mathematics, there is a continuum. At one end, we have exact answers, and at the other end, we have chaos, and the part that is exploding is chaos. It goes from exact answers to no answers at all, and we have to figure out where we are and what tools to use. Math creep is substantial. There is a clear relationship between algebra and everything else.

Keith said what is general education? Is it a tools-based approach or a liberal-education approach? Math, more than any other subject, raises that issue. What should we be teaching? What should we be helping them to learn?

Heather indicated that she is an applied-math major and is planning to go to graduate school. She is a supplemental instructor in math at the University of Utah where she does TA type discussions with math 1010 students, so she has seen the issues from both sides. Students remember algorithms but don't know how to apply them, don't know how to solve problems.

Brad is also a math major and is graduating this year. He started college 10 years ago and started out in math 990. He worked his way up. Math was his favorite subject. He has been at Utah Valley University for three years and is now a supplemental instructor.

Dan said that we have no problem assessing students acquired skills, but it is harder to assess and even teach conceptual skills.

Kathy reported that Utah Valley University has completed one round of assessment in general education math. The results may not have much meaning yet. They have struggled with the learning outcomes. She said that the University of Utah has a rubric with clear, precise learning outcomes. She recommended checking their web site.

Paul said that at Weber State College, over the last couple of years, they have developed mission statements for each of generic areas. They adopted the mission statements from the Regents Task Force on Quantitative Literacy. They now are trying to show how each course meets those outcomes. However, the Utah State Board requirements are more skills based and may not be as general as we want.

Diana noted that the part that Jonathan shared is only a piece of cores standards; the other part is broader. It is a mistake to think it has to be either/or. What we desire most is a piece of each of those things (skills/ folklore/etc.)

Dan said that a broader perspective is what we should be looking for, including knowledge, skills, and thinking. Jonathan noted we need to examine what a student knows, understand and is able to do.

Jonathan suggested that the group do some brainstorming concerning what other disciplines need from general education math. Ideas that were generated include:

Students need to be able to apply mathematical content to real world problems, which is the reason skills are there.

Do we expect the students to have applied it in class or that they will be able to do it once they exit from the university. There is a difference between “students will do this” and “students will be able to do this” and have a skill that will be useful later in life.

Students will be able to understand when to apply skills to real world problems and be able to recognize that math is useful in the world.

How will outcomes be assessed; we can't assess them 20 years down the road. We have to be able to demonstrate it while they are still in the institution. Some are difficult to assess.

We want students to be able to critique quantitative information and know exactly what that means. They should be able to critique a logical argument, which is a different skill. Logical reasoning is a mathematical thing. We ignore logic and focus on skills.

We want students to use math in their own lives and own decisions. For example, they should understand mortgages and payday lending. They should be able to apply mathematical reasoning to everyday problems.

Bill noted that the physics team looked at different levels of sophistication for their outcomes. They had seven general outcomes and then had specific examples.

Some of the common core outcomes should be included.

Students should understand estimation and number sense and be able to determine an approximate solution or approximate value. This is hard to assess but critical.

Diana noted that this doesn't seem like a higher education concept. Student should learn this from public school. Don't put things on the list that are not higher education's job. Rather, higher education should reinforce or extend the concepts. We need constant forward motion and eternal review.

Understanding formulas, graphs, and tables is important.

Jonathan asked what minimum “incomes” we can expect. What skills can we expect entering students to have? These may be mostly specific skills such as being able to convert between mathematical symbols and real world skills.

Steve noted that there are very inconsistent abilities among students coming from high school.

The overall objectives should be broad with specific ideas for classes. They should be appropriate developmentally and at the level you are assessing.

Students should have a numerical sense and a certain competency level. Teachers in courses such as business calculus have to go back and teach basic skills, but the class needs to be all together so we can focus on what needs to be taught. More competency level at high school is important. It is hard to have to go back and focus on what they should have learned in previous classes.

We should be able to assume common sense things and reinforce these things throughout a program. Students should be able to tell if they are answering the things that they want to answer.

Should we assume that high school skills are being taken care of with new common core? Should we be asking what we should be doing for students who are ready for college?

We need to fine tune basic math skills; students need is for relatively low level math. Courses such as calculus and statistics can be taught in disciplines.

Liz suggested that we should include the beauty, creativity, value, and history of math. One subgoal should be that students should not hate math. Another outcome would be for students to become parents who would not scare their kids about math.

We may want to look at what math is instead of how it can be used.

It is important to teach where things came from. Use math 1010 to create someone who will become a math major and help the students understand that it is not just formulas.

Some of the beauty of math might be what you can use it for. We should summarize patterns.

Amanda recommended the Vi Hart videos on UTube.

We should also examine the role of technology in math/ Do we just use technology as a way to deliver content? We should have enough use of technology so students can use it later. Is there a learning outcome with the use of technology?

Jonathan's summary of the suggested outcomes is:

Learning Outcomes (brainstorming)

Students will be able to apply mathematical knowledge to real world problems. / Be able to apply mathematical reasoning to everyday problems.

Students will be able to understand when to apply mathematical knowledge.

Students will be able to critique quantitative information (including recognizing strengths, determining validity, identifying assumptions, ...)

Students will be able to reason logically.

Students will be able to convert between English language and mathematical representation of a situation.

Students will appreciate the beauty, creativity, and value of mathematics.

Students will be able to use technology appropriately.

Jonathan announced the upcoming meeting about Degree Qualifications Profiles (DQPs). It will be at 9 a.m. on April 2 at the Downtown Marriott Hotel in Salt Lake. Carol Geary Schneider will be the keynote speaker, and she will discuss the relationship of Tuning and DQPs. After lunch there will be breakout sessions for the discipline teams. This is an important meeting for all team members. Please plan to attend.

Minutes
Utah Mathematics Tuning Team
April 2, 2012

Jonathan Bodrero, Snow College; Heather Brooks, U of U student; Amanda Cangelosi, U of U; Dan Coster, USU; David Fearnley, UVU; Marty Larkin, SUU; Michele Larson, USU; Steve McKay, BYU; Scott Mortensen, DSC; Doug Richards, SLCC; Brad Roundy, UVU student; Diana Suddreth, USOE; Paul Talaga, WSU; Keith White, UVU

Two major goals for today's meeting:

1. Review learning outcomes including feedback from colleagues
2. Look at expected competencies coming in

Discussion about "Students will appreciate the beauty, creativity, and value of mathematics"

Do we keep this in even if it may be difficult to assess?

Is this mostly how the math is taught?

Consensus -- keep in to shape teaching.

We may need to be creative to find a way to assess.

Maybe change "appreciate" to "experience"?

Appreciate that mathematics describes the world around us.

Diana Suddreth suggested we make outcomes and then meet with focus groups of areas we serve to see how our outcomes fit their needs. For now we are talking about general goals not specific topics in courses. Once we get general outcomes we can come back and clarify the outcomes for each course.

Students need to see that the teacher enjoys math.

What subset of 1010 is needed for 1040 and 1050? Dan Coster asked about expectations for 1040 and 1050 and has a list of QL learning incomes that was sent to him. He will share this list through Jonathan Bodrero. He suggests a pre-stats class that is a subset of 1010 while keeping 1010 content for those going on to Math 1050 and beyond.

Keith White suggests another learning outcome from LEAP / DQP: Civic Engagement.

Review / discuss the learning outcomes we already have listed.

- #1. real world problems -- Keep
- #2. when to apply -- Combine with #1 "when and how" together.
- #3. includes statistical; not just critiquing but creating the argument in the first place.
 - "interpret and critique" or "construct and critique"
 - change to "construct, critique, and interpret"
 - "formulate" rather than "construct"
 - "quantitative argument" --- We can polish up later.

#4 move to #3

Students will be able to construct a logical argument and reason logically.
Will wordsmith later.

#5 English and math -- more modeling?

words versus math symbols? Math as a language?

Use math as a language

understand and use math as a language to communicate quantities.

this needs to be clarified since even those at the table interpreted differently

“...between mathematical representations and written/spoken language...”

#6 technology

How do we measure “appropriately”?

use technology to explain mathematics

Go to this -- “Use technology to explore and analyze mathematical concepts.”

Higher ed should be extending the goals of the K-12; i.e, higher ed should be extending the learning outcomes of the Common Core.

Action Items:

Next meeting: Wed. May 9 10:00 am -noon Most likely at Regents office but Janice Gygi will check on availability.

We have lost non-mathematics people for this committee (Pat Allen, DSC; Ron Skocki, WSU). Jonathan Bodrero will coordinate with Janice Gygi to see if we can replace them.

Dan Coster will forward the list of learning incomes that he has generated. Jonathan Bodrero will try to get learning incomes (from Dan Coster) and revised learning outcomes out to committee by Monday, April 9.

Jonathan Bodrero gave the assignment for committee members to communicate both the learning outcomes and learning incomes to other colleagues and get these comments back to him.

Math GE Learning Outcomes (2nd draft)

Upon successful completion of any Math GE course, the student will:

1. Know when and how to apply mathematical knowledge to real world problems.
2. Be able to interpret and critique quantitative information or arguments.
3. Be able to construct a logical or quantitative argument.
4. Understand and use math as a language to communicate quantities, including the ability to convert between mathematical representations and written / spoken language.
5. Experience / Appreciate the beauty, creativity, or value of mathematics.
6. Use technology to explore and analyze mathematical concepts.

Minutes
Math GE Tuning Meeting
May 9, 2012

Lynn Adams (UVU Business), Kathy Andrist (UVU Math), Jonathan Bodrero (Snow Math), Heather Brooks (Univ. of Utah student), Amanda Cangelosi (Univ. of Utah Math), Dan Coster (USU Math), Randy Davies (BYU evaluator), Bill Evenson (Tuning Team), Janice Gygi (Tuning Team), Liz Herrick (Westminster Math), Marty Larkin (SUU Math), Michelle Larson (USU Vice Provost), Steven McKay (BYU Math), Doug Richards (SLCC Math), Brad Roundy (UVU student), Teddi Safman (USOE & Tuning Team), Paul Talaga (Weber State Math), Keith White (UVU Dev. Math).

Jonathan: Major goal of today's meeting is to refine general Math GE Learning Outcomes. After a brief review of the current draft of the outcomes, Jonathan read some goals from the MAA that Doug Richards had recently given him (www.maa.org/past/ql/ql_part2.html):

"A quantitatively literate college graduate should be able to:

1. Interpret mathematical models such as formulas, graphs, tables, and schematics, and draw inferences from them.
2. Represent mathematical information symbolically, visually, numerically, and verbally.
3. Use arithmetical, algebraic, geometric and statistical methods to solve problems.
4. Estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results.
5. Recognize that mathematical and statistical methods have limits."

After discussion, it was decided that most things match up nicely. However, it was agreed upon that we should add an outcome to address the "estimation and reasonableness" proficiency. Jonathan will work on wording this one and send it out for feedback.

Jonathan invites others to share feedback from their colleagues and other departments across campus regarding the current draft of the learning outcomes. A significant discussion ensued regarding outcome # 5: "Experience / Appreciate the beauty, creativity, or value of mathematics." This could be problematic to assess and may not be a "bottom line" essential outcome. SLCC has reflection reports that students write and include in their e-portfolios. Suggestions for improvement were to eliminate the word "Experience" to simplify to just "value." A team member asked Bill if the Physics Tuning group had dealt with a similar issue. Bill reports that they tried using "Recognize and explain" but ended up omitting it as an outcome. Steven McKay notes that this outcome is more of a directive to the instructor. After further discussion, all agreed to strike this as a student learning outcome and to incorporate it as a teacher objective / recommendation in the details about each course.

The next outcome analyzed was # 3: "Be able to construct a logical or quantitative argument." Kathy asks what is meant by a "quantitative argument?" Does that mean formal proofs? After discussion, the outcome was revised to "Be able to construct quantitative, logical arguments" to avoid

misinterpretation that would allow philosophical or existential arguments to qualify. Examples of such quantitative, logical arguments include statistical hypothesis tests and solving an equation / problem in a step-by-step manner. Keith asks if we want “a quantitative, logical argument” or “a logical, quantitative argument”?

More discussion leads to analysis of “Be able to” at the beginning of outcomes # 2 and # 3. It was proposed that the first line be changed to “To receive quantitative literacy credit” This brings up the issue of CLEP and prospective students trying to use work or military experience to meet the outcome. To address the task at hand and since the vast majority of the students will be taking the QL course, the committee decided that it should read “Upon successful completion of any Math GE course, the student will:” and to wordsmith “Be able to” for outcomes # 2 & # 3.

Review of the other outcomes brings up concern about # 4: “Understand and use math as a language to communicate quantities, including the ability to convert between mathematical representations and written / spoken language.” Steven feels that it is unwieldy and prone to misinterpretation. After discussion, it was agreed to modify the outcome to read, “Understand and use mathematics as a language to communicate” and to include more of the translation between math and written / spoken language into the details for each specific course.

Janice has a few business items. The Lumina people want to meet with us in September. Would the morning of Friday, Sep. 7 be ok? Another item is that some of the original team members have left the team. Janice asks current team members to think of candidates outside of the math department that could replace the team members and get back to her. Biology, nursing, sociology/psychology could be good areas because the students potentially use the math they’ve learned in those fields.

The next issue is to take these learning outcomes back to our departments and get buy in and see how they can implement the outcomes. Next steps include sharing ideas on curriculum, pedagogy, and assessment. Committee members are encouraged to look at what the physics team and history teams have done. Janice is still working on getting a website to serve as a repository for sharing Tuning information.

Several committee members agree to return to their departments and gather information on current practices and report them back to the Tuning team. The assignments are Math 1030: Amanda C. and Keith W.; Math 1040: Dan C., Liz H., Doug R.; Math 1050: Heather B., Marty L., Scott M., Brad R., Paul T.; Math 1210/1100: Lynn A., Jonathan B., and Steven M. Please return information to Jonathan Bodrero by July 4 so he can send it out to the group.

Minutes
Elementary Education Tuning Team Meeting
October 21, 2011

Present:

- Janice Gygi, Director, Utah Tuning Project
- Mike Patch, Teacher Education, Multicultural, and ESL, Utah Valley University
- Shirley Dawson, Education Law, Education Research, Salt Lake Community College
- Emily Lyman, Math, Introductory Chemistry, Western Governors University
- Sandy Petersen, Math Methods, Language Arts, Capstone, e-portfolio, Dixie State College
- Dee Caldwell, Reading Methods, Classroom Management, University of Utah
- David Williams, Tuning Evaluator, Brigham Young University
- Randy Davies, Tuning Evaluator, Brigham Young University
- Teddi Safman, Assistant Commissioner, Utah System of Higher Education
- Janet Young, Literacy, Brigham Young University
- Sue Womack, Curriculum, Math Methods, Weber State University
- Peggy Wittwer, Elementary Education, Science Education, Special Education, Southern Utah University

Joining via Conference Call:

- Bill Evenson, Consultant, Utah Tuning Project

Joining via Skype:

- Sylvia Read, Team Chair, Utah State University

Excused:

- Richard Squire, Snow College
- Lorel Preston, Westminster College

Announcements.

- “What is an Educated Person?” Conference, November 4, Snowbird Lodge at Snowbird, 9 a.m. – 4 p.m. Keynote Speaker: Holly McKiernan, Vice President, Operations, and General Counsel, Lumina Foundation – “Pulling Back the Curtain on What Matters Most – Learning.”
- Conference on Degree Qualification Profiles, April 2, Salt Lake City. Keynote speaker: Carol Geary Schneider, President, Association of American Colleges and Universities. Time and place will be announced. All team members should plan to attend.

Internal Evaluators: Developmental Evaluation.

David Williams and Randy Davies explained that they have joined the team to evaluate the whole Tuning process and to help us accomplish our goals. They will share information from other groups in the state who are working to Tune different disciplines. They asked the team to

write down how each came to be on the team, what they perceive their role to be, what they expect from this both personally and for their departments, and their biggest questions about the process right now. Participants shared their answers and questions:

- Want to be able to contribute to the conversation.
- Are seeking alignment, not conformity.
- Want to facilitate the conversation within their individual departments.
- Want to learn about other institutions and how they all compare.
- Noted that representatives to the Majors' Meetings are often advisors. The Elementary Education Team is faculty.

Team Expectations.

- Prepare students to enter the workforce and understand what the school districts want. For two-year colleges, prepare the students to transfer.
- Begin to work collaboratively with people throughout the state.
- The project is funded through May 2013. Hopefully Tuning will be an ongoing process.

Randy commented that this team sees things differently than the other teams. The evaluators will seek commonalities as well as what is unique with each team.

General Understanding of the Tuning Process.

- The team viewed the Lumina video on Tuning – <http://www.luminafoundation.org/newsroom/topics/tuning:adventures-in-learning.html>.
- Tuning is a way to make degree outcomes consistent across the state. Employers should be assured of what a graduate with a degree in the major knows, understands, and is able to do.
- Consistency in outcomes does not mean that the team is standardizing across institutions. Curriculum, pedagogy, and assessment will differ from school to school.
- Assessment for Tuning is different from assessment for accreditation. The point of accreditation is to assess the program, and a sample of student work is adequate. For Tuning, if a graduate obtains a degree, the employer can be assured of what the graduate knows, understands, and is able to do. Every graduate must be assessed on the outcomes.
- Utah State University's Department of History has posted their outcomes and assessment documents on their webpage: http://history.usu.edu/learning_outcomes.aspx. These are then transparent to accreditors, administration, faculty, and students.
- Tuning is a collaborative process of faculty working with faculty.

Outcomes.

- Janet Young reported that she participated in Standard Setting for the Praxis II, Content Test. They were asked to think constantly about the "just qualified candidate."
- For Utah learning outcomes, are we looking for "just barely" criteria or ideal criteria? Competence, not perfection, is what we are after.
- The team is determining learning outcomes and competencies.

- An elementary education degree ends with licensure, which makes the major different from other majors, such as history. This is an advantage because outcomes are clearer.
- When they leave the program, they should be ready to teach. Some assessments that test minimal competencies, such as Praxis, are already in place.
- Even though licensure requirements are met, a principal may feel a graduate of the program is not prepared. The goal is to graduate someone whom we would want to have as a teacher for our children or grandchildren.
- Outcomes must be determined first and then assessment can be discussed.
- Because raters don't always agree about what they see, outcomes must be explicit and measurable.
- One possible outcome would be that a prepared ELED graduate should be able to examine assessment data on a student and decide if he/she is receiving appropriate instruction and adjust instruction accordingly.
- Outcomes for elementary education could be based on broad categories, defined by current standards that could be collected and evaluated as a starting point.
- Assessment instruments for individual departments can also be collected and compared across institutions.
- The bases for outcomes should be: "What are the needs of the students?" "What are the needs of the employers?" "What are the needs of the children in the schools?"
- Principals need to be asked about what a prepared student should know, understand, and be able to do. Most will complain about classroom management, which is necessary but not sufficient for being able to teach effectively.
- Dispositional outcomes, such as "What does it mean to be a professional?" also need to be determined. Being a professional teacher overlaps a bit with being a good classroom manager. Management is facilitated by content, engaging lessons, and strong content knowledge.
- A possible pivotal outcome may be "withitness," effective classroom management.
- While it is easy to assess trivial things, higher level skills may be more difficult to assess.
- It would be good to have common questions to ask individual faculties. What do our students need to know, understand, and be able to do?
- When students graduate, they need to be strong generalists. Education departments deliver the pedagogy piece, but they come to the department with general education completed. Science educators are especially frustrated with the science background of elementary education students. There may need to be better connections to general education areas.
- Are there gaps in what elementary education students are required to take, such as history? Requirement sheets for elementary education for each institution should be collected.
- Should ethical behaviors of teachers be included as an outcome? Social media are complicating this issue. A related area is ethics of standardized testing administration. University of Utah students take a law and ethics course.
- It may be necessary to focus on a subset of the standards, rather than all of them. Would it be best to go deeper within a subset of standards? Are there areas that may be missed by the standards?

- It would be helpful to collect relevant standards: NTASC, Utah Effective Teaching Standards, TEAC, and NCATE and start from the commonalities. The NCATE report on Clinical Preparation might also be helpful.
- Accreditation is about the program, but it is also about the evidence that graduates of the program know, understand, and are able to do certain things.
- Department feedback is REQUIRED. Faculty must be involved in developing our outcomes, implementation, and assessment. Uniformity across institutions is not the expectation.

Student Team Member.

- The team needs a student member, someone who has had experience with the program. Dee will check with a recent University of Utah graduate.

Next Steps.

- Sylvia will do a doodle poll for a meeting time between November 8 and Thanksgiving.
- Team members should inform Janice if they will need to participate through IP video.
- Team members should collect standards and assessments that can be sent electronically and studied as “homework” before the next meeting.

Evaluator Wrap Up.

- The evaluators asked the team to write down thoughts and questions about the process. What questions do team members still have?

Minutes
Elementary Education Tuning Meeting
December 2, 2011

Present: Dee Caldwell, Sylvia Read, Sue Womack, Mike Patch, Peggy Wittwer, Sandy Petersen, Richard Squire, Shirley Dawson, Tim Morrison (sub for Janet Young), David Smith, Emily Lyman, Tamara Moore, Teddi Safman, Janice Gygi, David Williams

Minutes:

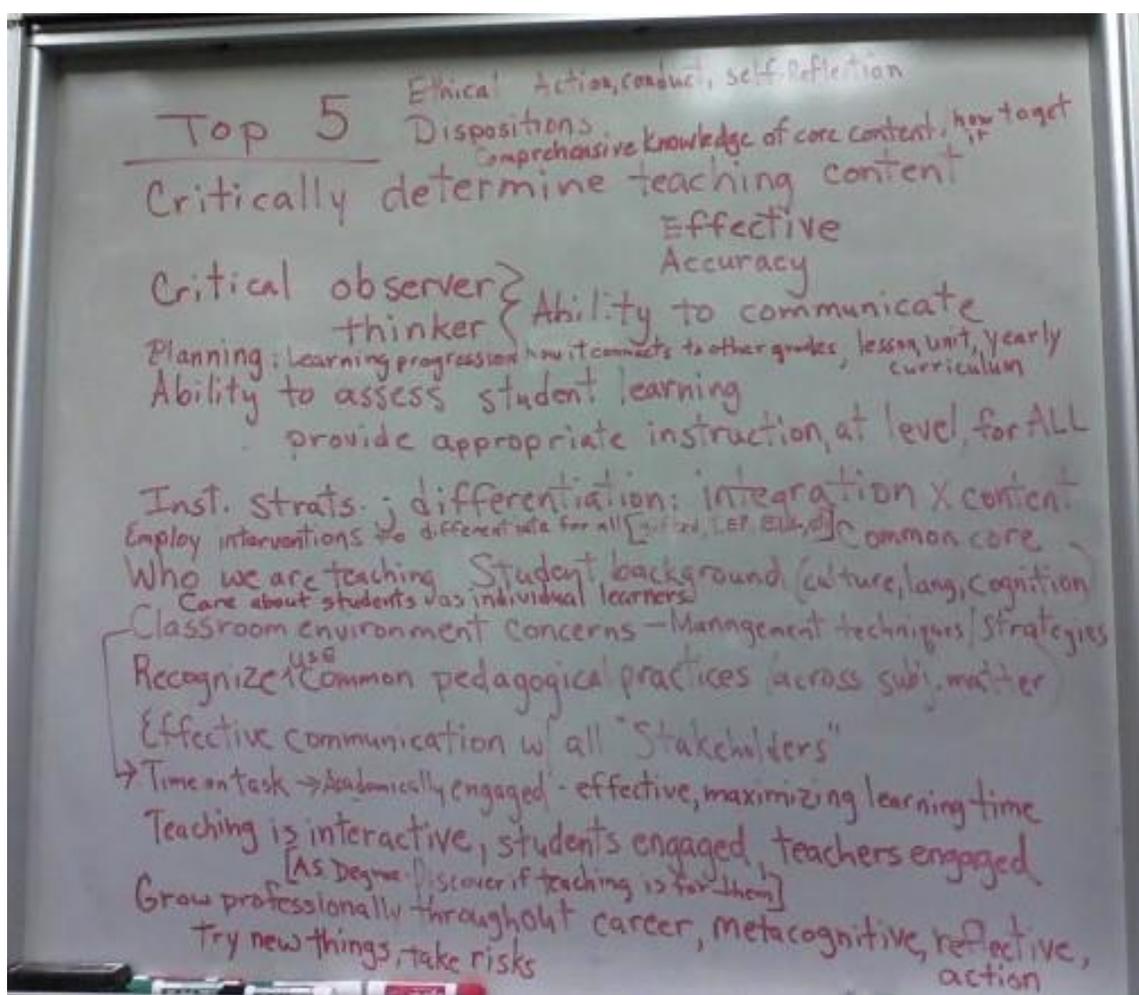
After engaging in an exercise where we all generated our top 5 learning outcomes, the following outcomes were generated. Later, possible modes of assessment were generated for some of the items.

- 1) Critical observer and thinker, with the ability to express it and make changes as a consequence
 - a) Self-reflection using a prompt
 - b) Observation of students' behavior
- 2) Ability to assess student learning and provide appropriate instruction in all subjects; employ interventions to differentiate for all learners (advanced, learners with IEP, struggling)
 - a) Lesson plan with student work and the assessment that was used to determine what the students learned
 - b) Teacher work sample
- 3) Integrate across content using the Common Core and critically determine appropriate content to teach in terms of accuracy and the given curriculum
 - a) Teacher work sample
 - b) Unit plans
 - c) Portfolios with artifacts
- 4) Know who the students are teaching in terms of their class, culture, language, cognition and care about them as learners and human beings
 - a) Contextual factors in teacher work sample, accommodations
 - b) Lesson plans with cultural references from students' cultures
 - c) Observations by cooperating teachers and supervisors
- 5) Establish classroom environment based on caring, responsibility, respect; effective management strategies to maximize learning time and student engagement
- 6) Knows and can use pedagogical practices that are useful across the curriculum
- 7) Effective communication with students, parents, and colleagues
- 8) Understand that being a teacher is an interaction with learners that requires engagement on both sides
- 9) Able to grow professionally and a willingness to reflect on their weaknesses and take action to improve by finding the resources needed
- 10) Ethical behavior in classroom and community in terms of actions, conduct, self-reflection
- 11) Comprehensive knowledge of core content and Common Core standards and how and where to find the resources to learn
- 12) Willingness to try new methods or adjust or enhance the use of mandated programs to meet the needs of the students
- 13) An understanding of learning progressions and how learning aligns across grade levels
- 14) Ability to plan lessons, subject units, integrated units on a daily, weekly, yearly basis

15) An understanding that learners bring their knowledge to the classroom that can be used as a foundation for further learning

Associates level:

- 1) Have enough knowledge about education and schooling to know whether or not they want to pursue teaching
- 2) Understand how lessons flow in the classroom
- 3) Understand how to keep students engaged through planned, structured interactions
- 4) An understanding that assessment should drive instruction
- 5) An understanding of the complexity of students, teaching, and schools
- 6) Open to learning more and willingness to grow; understanding that continuing education is required as a professional in order to stay current



White board notes. Thanks Sue!

We discussed how to assess outcomes and whether or not certain outcomes were assess

sable. We agreed that whether or not an outcome is assessable depends on what you think is assessable. Some people think only in terms of multiple choice tests. However, constructed responses to a text based or video based prompt are assessable. Teacher work samples could be used to collect information on students' ability to critically think and reflect. Videotaping themselves and reflecting on the experience can also be a valid form of assessment.

We discussed the concern for how well students know different subjects. Finding a balance between adequate content knowledge and length of schooling is tricky. Math is an example. Pedagogically, it's hard to teach math unless you have strong content knowledge. Laying the foundation for mathematical thinking is complex, even in the primary grades. They need to be able to teach more than just math and literacy, for example science and social studies. The arts are left out of the curriculum in schools, and yet programs don't have room to get adequate preparation to teach the arts.

How do we fit in the Common Core standards? They are in two of our outcomes. We'll want to discuss this more.

We ended with a discussion of how we don't want these outcomes to be seen as "just another set of standards." There is a sense that educators are feeling inundated with standards. We asked David Smith for his help with the USOE in making them aware of the Tuning process and how it might be integrated with the newly adopted Utah Effective Teaching Standards.

A Doodle poll will be sent out for a meeting time in January.

Minutes
Elementary Education Tuning Team
February 10, 2012

Present: Peggy Wittwer, Bill Evenson, Richard Squire, Tamara Moore, Randy Davies, David Williams, Janice Gygi, Sandy Peterson, Sue Womack, Dee Caldwell, Shirley Dawson, Adina O'Hara

We began by reviewing the December minutes. Then we carefully went through the Utah Effective Teaching Standards (UETS), and made sure that the essential learning outcomes that we had drafted so far were aligned with the UETS. When we found gaps—places where our essential learning outcomes didn't reflect something that we found in the UETS—we addressed it by either revising an existing outcome or drafting a new one. Finally, we decided it would be good to organize our essential learning outcomes into three superordinate categories: The Learner and Learning, Instructional Practice, Professional Responsibility (just like UETS).

**Essential Learning Outcomes for Bachelor's degree
organized into UETS Categories**

The Learner and Learning

1. Ability to assess student learning and provide appropriate instruction in all subjects
2. Ability to plan lessons, subject units, integrated units on a daily, weekly, yearly basis
3. An understanding of learning progressions and how learning aligns across grade levels
4. Know who the students are teaching in terms of their class, culture, language, ability, disability, and cognition and care about them as learners and human beings
 - a. Contextual factors in teacher work sample, accommodations
 - b. Lesson plans with cultural references from students' cultures
 - c. Observations by cooperating teachers and supervisors

Instructional Practice

5. Ability to plan lessons that incorporate academic language, problem-solving, critical thinking, or multiple representations and explanations as appropriate to the content
6. Ability to select assessments that match learning objectives
7. When planning, demonstrate that they provide opportunities for students to use complex thinking skills in organizing and generating original work.
8. An understanding that learners bring their knowledge to the classroom that can be used as a foundation for further learning
9. Uses instructional strategies that require engagement between teacher and students and among students (e.g., questioning, analysis, reflection on learning)
10. Establish classroom environment based on caring, responsibility, respect;
11. Effective management strategies to maximize learning time and student engagement
12. Knows and can use effective pedagogical practices that are useful across the curriculum, including technology, when appropriate
13. Employ interventions to differentiate for all learners (advanced, learners with IEPs, struggling, ELL)
 - a. Lesson plan with student work and the assessment that was used to determine what the students learned
 - b. Teacher work sample
14. Integrate across content using the Common Core to create authentic learning experiences

15. Critically determine appropriate content to teach in terms of accuracy and the given curriculum
 - a. Teacher work sample
 - b. Unit plans
 - c. Portfolios with artifacts

Professional Responsibility

16. Effective communication with students, parents, colleagues, and other professionals to improve student growth and success
17. Able to grow professionally and a willingness to reflect on their interests and/or weaknesses and take action to improve by finding the resources needed
 - a. Set goals with plans for implementation
18. Ethical behavior in classroom and community in terms of actions, conduct, self-reflection
19. Comprehensive knowledge of core content and Common Core standards and how and where to find the resources to learn
20. Willingness to try new methods and technology or adjust or enhance the use of mandated programs to meet the needs of the students
21. Critical observer and thinker, with the ability to express it and make changes as a consequence
 - a. Self-reflection using a prompt
 - b. Observation of students' behavior

Below are the learning outcomes for teacher candidates at the associate level with the applicable Utah Effective Teaching Standards noted (Thanks Shirley and Richard!)

1. Have knowledge and understanding about education and school systems to determine if a teaching career is the desired goal. Standards 1 & 10.
2. Understand the process of lesson planning and implementation. Standard 6
3. Understand student engagement in the classroom. Standards 3 & 7.
4. Understand that assessment should drive instruction. Standard 5
5. Understand the complexity of students, teaching, and schools. Standards 1, 2, & 3.
6. Understand that continuing education is required as a professional. Standard 4 & 8
7. Communicate in a professional manner with others in educational settings. Standard 9
8. Understand the professional and ethical behavior required of educators. Standard 10.

During the early stages of teacher preparation, foundational knowledge is needed to build further skills and knowledge. The above outcomes reflect the need for foundational knowledge. Student outcomes could be measured by student desire to continue in elementary education or by passing introductory courses in education.

Upcoming:

April 2, Degree Qualifications Profile meeting, downtown Marriott
Oct. 26, Educated Persons Conference

Minutes
Elementary Education Tuning Team
April 2, 2012

Present: Sylvia Read, Dee Caldwell, Tamara Moore, Sue Womack, Emily Lyman, Shirley Dawson, Michelle Kalina, Janet Young, Richard Squire, David Williams

We began by reviewing the February minutes, which were essentially a draft of objectives we worked on last time. Most of the feedback was about wordsmithing that needs to be done. Then Sylvia invited everyone to think about how what they are doing ties in with what K-12 is doing about similar issues.

Sylvia explained that according to the USOE, we have to build our standards around the Utah Effective Teaching Standards* according to the board rule** and to maintain our accreditation. We discussed how these standards are the foundation for expectations for licensure and not just something what teachers will be judged on in the profession.

We discussed whether we needed to keep working from our draft or whether we should take a closer look at the Utah Effective Teaching Standards and see if we agree with them and if they are stated as learning outcomes. There was group consensus that we should examine the UETS closely for fit with our own brainstormed list of essential learning outcomes.

We began a careful review of the UETS to determine whether they needed further clarification or operationalizing.

Emily Lyman, who works in a competency based program (WGU) expressed a concern that there may be some pressure to get to an objective level at a very granular level, but didn't think we want to get to that level since we have variation among institutions. Everyone agreed.

There was some discussion about whether or not "awareness" was measurable as a learning outcome. We decided that it is, though it is the lowest level on Bloom's taxonomy. This is a level appropriate for the Associate's degree.

We also discussed dispositions and whether they are measurable as learning outcomes. Several institutions have instruments for measuring dispositions and one institutions screens for dispositions at the point of admission to the program. Dispositions are clearly defined in the Utah Effective Teaching Standards.

One institution doesn't measure dispositions at all because of worries about FERPA. They do try to counsel them out but saying we just don't think they are "suited" for teaching. WGU put a lot of lawyers on that and have decided it is not a problem with FERPA because their files are cellurized.

We then finished carefully reading and evaluating all of the Utah Effective Teaching Standards and each individual indicator. We decided that all of the indicators were already written as learning

outcomes. There was some discussion about whether or not Standard 8: Reflection and Continuous Growth matched well with our expectations of undergraduate teacher candidates. But when we examined the rubric for Standard 8, we decided that the descriptor for “practicing” matched well with our expectations for teacher candidates.

Sylvia noted that her students have to provide artifacts to show that they have knowledge and skills that meet the indicators. Might take a suite of artifacts to make this case.

Utah Effective Teaching Standards

The Learner and Learning

Teaching begins with the learner. To ensure that each student learns new knowledge and skills, teachers must understand that learning and developmental patterns vary among individuals, that learners bring unique individual differences to the learning process, and that learners need supportive and safe learning environments to thrive.

Standard 1: Learner Development

The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.

The teacher:

- a. creates developmentally appropriate and challenging learning experiences based on individual students’ strengths, interests and needs.
- b. collaborates with families, colleagues and other professionals to promote student growth and development.

Standard 2: Learning Differences

The teacher understands individual learner differences and cultural and linguistic diversity.

The teacher:

- a. ensures inclusive learning environments that allow each student to reach learning goals.
- b. designs, adapts and delivers instruction to address each student’s diverse learning strengths and needs.
- c. uses instructional strategies that are sensitive to the multiple experiences and diversity of learners and that allow for different ways of demonstrating learning.

d. brings multiple perspectives to the learning context that allow each student to persevere, advance, and accelerate learning.

e. incorporates tools of language development into planning and instruction, including strategies for development of English proficiency.

Standard 3: Learning Environments

The teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self motivation.

The teacher:

a. develops learning experiences that engage and support students as self-directed learners who internalize classroom routines, expectations and procedures.

b. collaborates with students to establish a positive learning climate of openness, respectful interactions, support, and inquiry.

c. uses a variety of classroom management strategies to effectively maintain a positive learning environment.

d. equitably engages students in learning by organizing, allocating, and managing the resources of time, space, and attention.

e. extends the learning environment using technology, media, and local and global resources.

f. encourages students to use speaking, listening, reading, writing, analysis, synthesis, and decision-making skills in various real-world contexts.

Instructional Practice

Effective instructional practice requires that teachers have a deep and flexible understanding of their content areas and be able to draw upon content knowledge as they work with learners to access information, apply knowledge in real world settings, and address meaningful issues. They must also understand and integrate assessment, planning, and instructional strategies in coordinated and engaging ways to assure learner mastery of the content.

Standard 4: Content Knowledge

The teacher understands the central concepts, tools of inquiry, and structures of the discipline.

The teacher:

- a. knows the content of the discipline and conveys accurate information and concepts.
- b. bases instruction on approved content standards and current research.
- c. engages students in applying methods of inquiry and standards of evidence of the discipline.
- d. uses multiple representations and explanations of concepts that capture key ideas.
- e. helps students to learn and use academic language accurately and meaningfully.
- f. evaluates and selects instructional resources for accuracy, accessibility, and relevance.
- g. stimulates student reflection on prior content knowledge, links new concepts to familiar concepts, and makes connections to students' experiences.
- h. understands common misconceptions in the discipline and how to direct student learning to replace them with accurate conceptual understanding.

Standard 5: Assessment

The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in content standards have been met.

The teacher:

- a. designs and/or selects pre-assessments, formative, and summative assessments in a variety of formats that match learning objectives and engages the learner in demonstrating knowledge and skills.
- b. engages students in understanding and identifying the elements of quality work and provides them with timely and descriptive feedback to guide their progress in producing that work.
- c. adjusts assessment methods and makes appropriate accommodations for English Language Learners, students with disabilities, advanced students, and students who are not meeting learning goals.
- d. uses data to assess the effectiveness of instruction and to make adjustments in planning and instruction.

e. documents student progress and provides descriptive feedback to students, parents, and other stakeholders in a variety of ways.

f. understands and practices appropriate and ethical assessment principles and procedures.

Standard 6: Instructional Planning

The teacher plans instruction to support students in meeting rigorous learning goals by drawing upon knowledge of content areas, core curriculum standards, instructional best practices, and the community context.

The teacher:

a. plans instruction based on the approved state curriculum.

b. individually and collaboratively selects and creates learning experiences that are appropriate for reaching content standards, relevant to learners, and based on principles of effective instruction.

c. differentiates instruction for individuals and groups of students by choosing appropriate strategies and accommodations, resources, materials, sequencing, technical tools, and demonstrations of learning.

d. creates opportunities for students to generate and evaluate new ideas, seek inventive solutions to problems, and create original work.

e. integrates cross-disciplinary skills into instruction to purposefully engage learners in applying content knowledge.

Standard 7: Instructional Strategies

The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.

The teacher:

a. understands and practices the principles, techniques, advantages and limitations of a range of developmentally, culturally, and linguistically appropriate instructional strategies.

b. uses appropriate strategies and resources to adapt instruction and vary his or her role to meet the needs of individuals and groups of learners.

- c. continuously monitors student learning, engages students in assessing their own progress, and adjusts instruction and modifies resources in response to student learning needs.
- d. analyzes student errors and misconceptions in order to redirect, focus, and deepen learning.
- e. models effective strategies to support and expand learners' communication through speaking, listening reading, writing, and other media.
- f. provides multiple opportunities for students to gather, analyze, synthesize, and evaluate information and ideas and develop meta-cognitive skills.
- g. provides opportunities for students to demonstrate and apply their knowledge with a variety of student products and performances.
- h. encourages students to understand, question, and analyze information from multiple and diverse sources and perspectives to answer questions and solve real-world problems.
- i. supports content and skill development by using multiple media and technology resources and knows how to evaluate these resources for quality, accuracy, and effectiveness.

Professional Responsibility

Creating and supporting safe, productive learning environments that result in learners achieving at the highest levels is a teacher's primary responsibility. To do this well, teachers must engage in meaningful, intensive professional learning by regularly examining practice through ongoing study, self-reflection, and collaboration. They must be aware of legal and ethical requirements and engage in the highest levels of professional and ethical conduct.

Standard 8: Reflection and Continuous Growth

The teacher is a reflective practitioner who uses evidence to continually evaluate and adapt practice to meet the needs of each learner.

The teacher:

- a. independently and in collaboration with colleagues, uses a variety of data to evaluate the outcomes of teaching and learning and to reflect on and adapt planning and practice.
- b. actively seeks professional, community, and technological resources, within and outside the school, as supports for reflection and problem-solving.

- c. recognizes and reflects on personal and professional biases and accesses resources to deepen understanding of differences to build stronger relationships and create more relevant learning experiences.
- d. actively investigates and considers new ideas that improve teaching and learning and draws on current education policy and research as sources of reflection.
- e. engages in meaningful and appropriate learning experiences to improve professional practice and student learning.
- f. develops a professional learning plan based on individual needs and the needs of learners, schools, and educational communities.

Standard 9: Leadership and Collaboration

The teacher is a leader who engages collaboratively with learners, families, colleagues, and community members to build a shared vision and supportive professional culture focused on student growth and success.

The teacher:

- a. prepares for and participates actively as a team member in decision-making processes and building a shared vision and supportive culture that effect the school and larger educational community.
- b. participates actively as part of the learning community, sharing responsibility for decision-making and accountability for each student’s learning, and giving and receiving feedback.
- c. advocates for the learners, the school, the community, and the profession.
- d. works with other school professionals to plan and jointly facilitate learning to meet diverse needs of learners.
- e. engages in professional learning to enhance knowledge and skill, to contribute to the knowledge and skill of others, and to work collaboratively to advance professional practice.

Standard 10: Professional and Ethical Behavior

The teacher demonstrates the highest standard of legal, moral, and ethical conduct as specified in Utah State Board Rule R277-515.

The teacher:

- a. is responsible for compliance with federal and state laws, State Board of Education Administrative rules, state assessment policies, local board policies, and supervisory directives.
- b. avoids actions which may adversely affect ability to perform assigned duties and carry out the responsibilities of the profession, including role-model responsibilities.
- c. takes responsibility to understand professional requirements, to maintain a current Utah Educator License, and to complete license upgrades, renewals, and additional requirements in a timely way.
- d. maintains accurate instructional and non-instructional records.
- e. maintains integrity and confidentiality in matters concerning student records and collegial consultation.
- f. develops appropriate student-teacher relationships as defined in rule, law, and policy.
- g. maintains professional demeanor and appearance as defined by their Local Education Agency (LEA).

**** R277-530. Utah Effective Teaching and Educational Leadership Standards.**

R277-530-1. Definitions.

A. "Board" means the Utah State Board of Education.

B. "Local education agency (LEA)" means a Utah school district or charter school.

C. "Promises to Keep" is the Board's statement of vision and mission for Utah's system of public education. Utah's public education system keeps its constitutional promise by ensuring literacy and numeracy for all Utah children, providing high quality instruction for all Utah children, establishing curriculum with high standards and relevance for all Utah children, and requiring effective assessment to inform high quality instruction and accountability.

D. "School administrator" means an educator serving in a position that requires a Utah Educator License with an Administrative area of concentration and who supervises Level 2 educators.

E. "Teacher" for purposes of this rule means an individual licensed under Section 53A-6-104 and who meets the requirements of R277-501.

F. "USOE" means the Utah State Office of Education.

R277-530-2. Authority and Purpose.

A. This rule is authorized under Utah Constitution Article X, Section 3 which vests general control and supervision over public education in the Board, by Sections 53A-1-402(1)(a)(i) and (ii) which require the Board to establish rules and minimum standards for the qualification and certification of educators and for required school administrative and supervisory services, and Section 53A-1-401(3) which allows the Board to make rules in accordance with its responsibilities.

B. The purpose of this rule is to establish statewide effective teaching standards for Utah public education teachers and to establish statewide educational leadership standards for Utah public education administrators consistent with the Board's supervision of the public education system under Utah Constitution Article X, Section 3 and supports one pillar of the Board's Promises to Keep - high quality instruction for all Utah children.

R277-530-3. USOE Responsibilities for Effective Teaching and Educational Leadership Standards.

A. The Board shall use the Effective Teaching Standards and Educational Leadership Standards as the foundation of educator development that includes alignment of teacher and school administrator preparation programs, expectations for licensure, and the screening, hiring, induction, and mentoring of beginning teachers and school administrators.

B. The Board shall use the Effective Teaching Standards and Educational Leadership Standards to direct and ensure the implementation of the Utah Common Core Standards.

C. The Board shall rely on the Effective Teaching Standards and Educational Leadership Standards as the basis for an evaluation system and tiered-licensing system.

D. The Board shall develop a model educator assessment system for use by LEAs based on the Effective Teaching Standards and Educational Leadership Standards.

E. The Board shall provide resources, including professional development, that assist LEAs in integrating the Effective Teaching Standards and Educational Leadership Standards into educator practices.

R277-530-4. LEA Responsibilities for Effective Teaching Standards and Educational Leadership Standards.

A. LEAs shall develop policies to support teachers and school administrators in implementation of the Effective Teaching and Educational Leadership Standards.

B. LEAs shall develop professional learning experiences and professional learning plans for relicensure using the Effective Teaching and Educational Leadership Standards to assess educator progress toward implementation of the standards.

C. LEAs shall adopt formative and summative educator assessment systems based on the Effective Teaching and Educational Leadership Standards to facilitate educator growth toward expert practice.

D. LEAs shall use the Effective Teaching and Educational Leadership Standards as a basis for the development of a collaborative professional culture to facilitate student learning.

E. LEAs shall implement induction and mentoring activities for beginning teachers and school administrators that support implementation of the Effective Teaching Standards and Educational Leadership Standards.

R277-530-5. Effective Teaching Standards.

A. The Board document, Promises to Keep, identifies the development and retention of teachers who have the skills and knowledge to provide effective, high quality instruction to all of Utah's students as one of four essential promises between the Board and the public education community. The Utah Effective Teaching Standards describe what effective teachers must know and be able to do to fulfill the Board's constitutional promise. The Effective Teaching Standards focus on the high-leverage concepts of personalized learning for diverse learners, a stronger focus on application of knowledge and skills, improved assessment literacy, a collaborative professional culture, and new leadership roles for teachers.

B. Effective Teaching Standards - Utah teachers shall demonstrate the following skills and work functions designated in the following ten standards:

(1) Learner Development - A teacher understands cognitive, linguistic, social, emotional, and physical areas of student development.

(2) Learning Differences - A teacher understands individual learner differences and cultural and linguistic diversity.

(3) Learning Environments - A teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self motivation.

(4) Content Knowledge - A teacher understands the central concepts, tools of inquiry, and structures of the discipline.

(5) Assessment - A teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in content standards have been met.

(6) Instructional Planning - A teacher plans instruction to support students in meeting rigorous learning goals by drawing upon knowledge of content areas, core curriculum standards, instructional best practices, and the community context.

(7) Instructional Strategies - A teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.

(8) Reflection and Continuous Growth - A teacher is a reflective practitioner who uses evidence to continually evaluate and adapt practice to meet the needs of each learner.

(9) Leadership and Collaboration - A teacher is a leader who engages collaboratively with learners, families, colleagues, and community members to build a shared vision and supportive professional culture focused on student growth and success.

(10) Professional and Ethical Behavior - A teacher demonstrates the highest standards of legal, moral, and ethical conduct as specified in R277-515.

R277-530-6. Educational Leadership Standards.

A. The Board document, Promises to Keep, expects that school administrators shall meet the standards of effective teaching and have the knowledge and skills to guide and supervise the work of teachers, lead the school learning community, and manage the school's learning environment in order to provide effective, high quality instruction to all of Utah's students. The Educational Leadership Standards focus on visionary leadership, advocacy for high levels of student learning, leading professional learning communities, and the facilitation of school and community collaboration.

B. In addition to meeting the standards of an effective teacher, school administrators shall demonstrate the following traits, skills, and work functions designated in the following six standards:

(1) Visionary Leadership - A school administrator promotes the success of every student by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by all stakeholders.

(2) Teaching and Learning - A school administrator promotes the success of every student by advocating, nurturing and sustaining a school focused on teaching and learning conducive to student, faculty, and staff growth.

(3) Management for Learning - A school administrator promotes the success of every student by ensuring management of the organization, operation, and resources for a safe, efficient, and effective learning environment.

(4) Community Collaboration - A school administrator promotes the success of every student by collaborating with faculty, staff, parents, and community members, responding to diverse community interests and needs and mobilizing community resources.

(5) Ethical Leadership - A school administrator promotes the success of every student by acting with, and ensuring a system of, integrity, fairness, equity, and ethical behavior.

(6) Systems Leadership - A school administrator promotes the success of every student by understanding, responding to, and influencing the interrelated systems of political, social, economic, legal, policy, and cultural contexts affecting education.

KEY: educators, effectiveness, leadership, standards

Date of Enactment or Last Substantive Amendment: 2011

Authorizing, and Implemented or Interpreted Law: Art X Sec 3; 53A-1-402(1)(a)(i); 53A-1-401(3)

Minutes
Elementary Education Tuning Team
May 8, 2012

In attendance: Bill Evenson, Janice Gygi, Sylvia Read, Dee Caldwell, Emily Lyman, Mike Patch, Sandy Peterson, Teddi Safman, Janet Young, Peggy Wittwer, David Smith.

1. We reviewed the April minutes. Dee had a question about what actually is the lowest level of Bloom's taxonomy. Is it knowledge or awareness. Teddi said we need to change our language from "measurable" to "assessable." Also, she commented that awareness is not appropriate for associate's degree.
2. We then heard from Teddi about the need for transparency with the learning outcomes. In ELED we are bombarded with standards, but somehow the standards are supposed to mean something. She urged us to drill down to what it means. For example, what levels of "cognition" are we talking about? How are the levels demonstrated?
3. We then took a look at some of the learning outcomes on Kentucky's Tuning USA Elementary Education Learning Framework.
4. The bulk of our meeting was spent reviewing and refining our draft of Essential Learning Outcomes. The changes we made are shown below. The bold font indicates wording changes from the Utah Effective Teaching Standards. The red text indicates ways that the outcomes could be assessed. We only got as far as Standard 3, indicator c. We will pick up from where we left off when we meet on May 21, 2012, at 2:00. At the very end, we all had a big "ah ha" moment when David Smith pointed all that many of the outcomes we had so far were not assessable until the end of the students' teacher education program. He urged us to think about wording some of the outcomes in ways that would allow us to assess them earlier in the program.

Standard 1: Learner Development

The teacher:

- a. creates developmentally appropriate and challenging learning experiences based on individual students' strengths, interests and needs. (What does this mean and what does it look like at each level? How do we explain and demonstrate this to our students?) (Lesson plans must be written for specific grade levels, with Common Core standards citations and Utah core standards citations, and with the needs of individual students in mind.)
- b. collaborates with families, colleagues, and other professionals to promote student growth and development. (e.g., attend PLCs, SEPs, IEPs, newsletters in different languages, attend grade level meetings) (Portfolio or teacher work samples with artifacts that demonstrate their understanding and enactment of these principles.)

Standard 2: Learning Differences

The teacher:

- a. ensures inclusive learning environments that allow each student to reach learning goals. (Labeling in different languages, using sticks with names to call on students, traffic patterns accommodate wheelchairs, assignments that don't assume that students all come from the same background,

individualized learning goals.) (Portfolios, teacher work samples, observations, classroom maps that show evidence of understanding.)

b. designs, adapts, and delivers instruction to address each student's diverse learning strengths and needs. (Lesson plans, teacher work samples.)

c. uses instructional strategies **and perspectives** that are sensitive to the multiple experiences and diversity of learners and that allow for different ways of demonstrating learning. (Lessons plans, work samples, portfolios, reflections on lessons or reflective journals).

d. **communicates high expectations for learners** that **encourage** each student to accelerate learning, persevere, and advance. (Reflections on artifacts, student teaching evaluations/observations, case study analyses)

e. incorporates tools of language development into planning and instruction for English language learners and supports development of English proficiency. (case study analyses, lesson plans, observations of student teaching)

Standard 3: Learning Environments

The teacher:

a. develops learning experiences that engage and support students as self-directed learners who internalize classroom routines, expectations, and procedures. (classroom management plans)

b. collaborates with students to establish a positive learning climate of openness, respectful interactions, support, and inquiry. (class meetings, morning meeting, webpages, suggestion boxes) (student teaching observations)

c. **describes, evaluates, and/or** uses a variety of **research-based and theoretically-grounded** classroom management strategies to effectively maintain a positive learning environment. (classroom management plan)

d. equitably engages students in learning by organizing, allocating, and managing the resources of time, space, and attention.

e. extends the learning environment using technology, media, and local and global resources.

f. encourages students to use speaking, listening, reading, writing, analysis, synthesis, and decision-making skills in various real-world contexts.

Standard 4: Content Knowledge

The teacher:

a. knows the content of the discipline and conveys accurate information and concepts.

b. bases instruction on approved content standards and current research.

c. engages students in applying methods of inquiry and standards of evidence of the discipline.

d. uses multiple representations and explanations of concepts that capture key ideas.

e. helps students to learn and use academic language accurately and meaningfully.

f. evaluates and selects instructional resources for accuracy, accessibility, and relevance.

g. stimulates student reflection on prior content knowledge, links new concepts to familiar concepts, and makes connections to students' experiences.

h. understands common misconceptions in the discipline and how to direct student learning to replace them with accurate conceptual understanding.

Standard 5: Assessment

The teacher:

- a. designs and/or selects pre-assessments, formative, and summative assessments in a variety of formats that match learning objectives and engages the learner in demonstrating knowledge and skills.
- b. engages students in understanding and identifying the elements of quality work and provides them with timely and descriptive feedback to guide their progress in producing that work.
- c. adjusts assessment methods and makes appropriate accommodations for English Language Learners, students with disabilities, advanced students, and students who are not meeting learning goals.
- d. uses data to assess the effectiveness of instruction and to make adjustments in planning and instruction.
- e. documents student progress and provides descriptive feedback to students, parents, and other stakeholders in a variety of ways.
- f. understands and practices appropriate and ethical assessment principles and procedures.

Standard 6: Instructional Planning**The teacher:**

- a. plans instruction based on the approved state curriculum.
- b. individually and collaboratively selects and creates learning experiences that are appropriate for reaching content standards, relevant to learners, and based on principles of effective instruction.
- c. differentiates instruction for individuals and groups of students by choosing appropriate strategies and accommodations, resources, materials, sequencing, technical tools, and demonstrations of learning.
- d. creates opportunities for students to generate and evaluate new ideas, seek inventive solutions to problems, and create original work.
- e. integrates cross-disciplinary skills into instruction to purposefully engage learners in applying content knowledge.

Standard 7: Instructional Strategies**The teacher:**

- a. understands and practices the principles, techniques, advantages and limitations of a range of developmentally, culturally, and linguistically appropriate instructional strategies.
- b. uses appropriate strategies and resources to adapt instruction and vary his or her role to meet the needs of individuals and groups of learners.
- c. continuously monitors student learning, engages students in assessing their own progress, and adjusts instruction and modifies resources in response to student learning needs.
- d. analyzes student errors and misconceptions in order to redirect, focus, and deepen learning.
- e. models effective strategies to support and expand learners' communication through speaking, listening reading, writing, and other media.
- f. provides multiple opportunities for students to gather, analyze, synthesize, and evaluate information and ideas and develop meta-cognitive skills.
- g. provides opportunities for students to demonstrate and apply their knowledge with a variety of student products and performances.
- h. encourages students to understand, question, and analyze information from multiple and diverse sources and perspectives to answer questions and solve real-world problems.
- i. supports content and skill development by using multiple media and technology resources and knows how to evaluate these resources for quality, accuracy, and effectiveness.

Standard 8: Reflection and Continuous Growth

The teacher:

- a. independently and in collaboration with colleagues, uses a variety of data to evaluate the outcomes of teaching and learning and to reflect on and adapt planning and practice.
- b. actively seeks professional, community, and technological resources, within and outside the school, as supports for reflection and problem-solving.
- c. recognizes and reflects on personal and professional biases and accesses resources to deepen understanding of differences to build stronger relationships and create more relevant learning experiences.
- d. actively investigates and considers new ideas that improve teaching and learning and draws on current education policy and research as sources of reflection.
- e. engages in meaningful and appropriate learning experiences to improve professional practice and student learning.
- f. develops a professional learning plan based on individual needs and the needs of learners, schools, and educational communities.

Standard 9: Leadership and Collaboration

The teacher:

- a. prepares for and participates actively as a team member in decision-making processes and building a shared vision and supportive culture that effect the school and larger educational community.
- b. participates actively as part of the learning community, sharing responsibility for decision-making and accountability for each student's learning, and giving and receiving feedback.
- c. advocates for the learners, the school, the community, and the profession.
- d. works with other school professionals to plan and jointly facilitate learning to meet diverse needs of learners.
- e. engages in professional learning to enhance knowledge and skill, to contribute to the knowledge and skill of others, and to work collaboratively to advance professional practice.

Standard 10: Professional and Ethical Behavior

The teacher:

- a. is responsible for compliance with federal and state laws, State Board of Education Administrative rules, state assessment policies, local board policies, and supervisory directives.
- b. avoids actions which may adversely affect ability to perform assigned duties and carry out the responsibilities of the profession, including role-model responsibilities.
- c. takes responsibility to understand professional requirements, to maintain a current Utah Educator License, and to complete license upgrades, renewals, and additional requirements in a timely way.
- d. maintains accurate instructional and non-instructional records.
- e. maintains integrity and confidentiality in matters concerning student records and collegial consultation.
- f. develops appropriate student-teacher relationships as defined in rule, law, and policy.
- g. maintains professional demeanor and appearance as defined by their Local Education Agency (LEA).

Minutes
Elementary Education Tuning Team
May 21, 2012

Present: Sylvia Read, David Williams, Emily Lyman, Janice Gygi, Shirley Dawson, Richard Squire, Teddi Safman, Mike Patch, Peggy Wittwer, Janet Young

Next meeting date: September 7, 1:30-4:00 with lunch @ noon?

Shirley Dawson will remain a member of the ELED Tuning Team even though her contract with SLCC is ending. Yay!

Today's meeting was spent continuing the work we began on May 8, namely going through each indicator and making sure that we had consensus on what each means and clarifying what we felt wasn't transparent enough to a wider audience than ourselves.

We had to re-review some of the ones we reviewed on May 8 because we were working with draft language that had been changed before final adoption by the USOE. We are not working with the final language throughout.

Text that appears in red contains ideas for assessment.

Text that appears in blue contains ideas for how it might get conveyed to undergraduates.

Bold text refers to minor changes in wording from the UETS for the purpose of making these essential learning outcomes specific to preservice teacher candidates rather than practicing teachers.

There were a few indicators that we removed because they were not applicable to teacher candidates. We stopped our work when time ran out. We have now fully reviewed the first 5 clusters of indicators, which encompasses 24 essential learning outcomes. We don't necessarily have assessment ideas for all of the essential learning outcomes we've reviewed to this point.

We need to continue to keep in mind the importance of having essential learning outcomes that can be assessed earlier in the program as well as ones that can be assessed at the end.

Learner Development

The teacher candidate:

1. Creates developmentally appropriate and challenging learning experiences based on individual students' strengths, interests and needs. (Lesson plans must be written for specific grade levels, with Common Core standards citations and Utah core standards citations, and with the needs of individual students in mind.)

2. Collaborates with families, colleagues, and other professionals to promote student growth and development. (e.g., attend PLCs, SEPs, IEPs, newsletters in different languages, attend grade level meetings) (Portfolio or teacher work samples with artifacts that demonstrate their understanding and enactment of these principles.)

Learning Differences

The teacher candidate:

1. Understands individual learner differences. (e.g., Labeling in different languages, using sticks with names to call on students, traffic patterns accommodate wheelchairs, assignments that don't assume that students all come from the same background, individualized learning goals.) (Portfolios, teacher work samples, observations, classroom maps that show evidence of understanding.)
2. Holds high expectations for all students' social and academic learning. (analysis of case studies)
3. Designs, adapts, and delivers instruction to address each student's diverse learning strengths and needs. (Lesson plans, teacher work samples.)
4. Expects students to demonstrate learning in ways that are sensitive to their multiple experiences and diversity. (oral demonstrations of learning instead of written, drawing the solution, etc.) (Lessons plans, work samples, portfolios, reflections on lessons or reflective journals).
5. **Communicates high expectations for learners** that **encourage** each student to accelerate learning, persevere, and advance. (Reflections on artifacts, student teaching evaluations/observations, case study analyses)
6. Incorporates tools of language development into planning and instruction for English language learners and supports development of English proficiency. (case study analyses, lesson plans, observations of student teaching)

Learning Environments

The teacher candidate:

1. Develops learning experiences that engage and support students as self-directed learners who internalize classroom routines, expectations, and procedures. (classroom management plans)
2. Collaborates with students to establish a positive learning climate of openness, respectful interactions, support, and inquiry. (class meetings, morning meeting, webpages, suggestion boxes)
(student teaching observations)
3. **Describes, evaluates, and/or** uses a variety of **research-based and theoretically-grounded** classroom management strategies to effectively maintain a positive learning environment.
(classroom management plan)
4. **Understands how to** equitably engage students in learning by organizing, allocating, and managing the resources of time, space, and attention. (calling on students in systematic and fair ways, for example) (case study of a classroom)
5. **Demonstrates ability to** extend the learning environment using technology, media, and local and global resources. (lesson plans, assignments in technology class)
- ~~f. Encourages students to use speaking, listening, reading, writing, analysis, synthesis, and decision-making skills in various real-world contexts.~~

Content Knowledge

The teacher candidate:

1. Knows the content of the **Utah Common Core Standards/Core Curriculum** and conveys accurate information and concepts.
2. Demonstrates an awareness of the Utah Common Core Standards/Core Curriculum and references it in short- and long-term planning.
3. **Demonstrates ability to** engages students in applying methods of inquiry **in the content areas**.
(assess lesson plans)

4. Uses multiple representations and explanations of concepts that capture key ideas.
5. Supports students in learning and using academic language accurately and meaningfully. (videos of themselves teaching, observations of a teacher, lesson planning)

Assessment

The teacher candidate:

1. Designs and/or selects pre-assessments, formative, and summative assessments in a variety of formats that match learning objectives and engages the learner in demonstrating knowledge and skills.
2. Engages students in understanding and identifying the elements of quality work.
3. **Demonstrates ability to** provides students with timely and descriptive feedback to guide their progress in producing **quality** work.
4. Adjusts assessment methods **when necessary** and makes appropriate modifications or accommodations for English Language Learners, students with disabilities, and advanced students. and students who are not meeting learning goals.
5. Uses data to assess the effectiveness of instruction **in order** to make adjustments in planning and instruction.
6. Documents student progress **in order to** provide descriptive feedback using documented student progress to students, colleagues, and other stakeholders (when appropriate).
- f. Understands and **applies** appropriate and ethical assessment principles and procedures.

APPENDIX C
REPORT ON TEAC/NCATE MEETING

Meeting with Education Accreditors
January 24, 2012
Washington, DC

Janice Gygi and William Evenson met with officers of the two major education accrediting organizations in Washington, DC on January 24, 2012 to explain Tuning to them and review our past and current work with education disciplines. The meeting was held in conjunction with the Council for Higher Education Accreditation (CHEA) Annual Conference.

Participants in this dinner meeting were the following officers of NCATE (National Council for Accreditation of Teacher Education) and of TEAC (Teacher Education Accreditation Council): James G. Cibulka, President of NCATE; Deborah B. Eldridge, Senior Vice President of NCATE; Mark LaCelle-Peterson, President of TEAC; and Diana Rigden, Executive Vice President of TEAC. Bill Evenson worked with Diana Rigden to arrange this meeting.

Janice and Bill reviewed Tuning with this group, explaining the process as it has developed in Tuning USA and Utah's work, in particular. Janice and Bill explained that Utah had recently begun Tuning of Elementary Education Teacher programs in Utah. They emphasized that Tuning will respect accreditation standards and state licensing requirements, but drill deeper in making explicit the expectations associated with these standards and requirements. They emphasized that Tuning is an iterative process, not a one-time activity. It is faculty driven. It will lead to shared learning outcomes at the degree level that are defined clearly, with common understanding throughout the state institutions. It does not standardize curriculum, or pedagogy, or assessment, while nonetheless providing opportunities to share practices and ideas. It is contemplated that different institutions, with their different demographics and contexts, will help their students achieve the learning outcomes in various ways, appropriate to the institutional contexts and strengths. It is also expected that the degree-level outcomes will not only be explicit and shared through the state, but will also be expressed in transparent language that students, parents, prospective students, and policy makers will understand.

The accreditors express enthusiasm about this effort and want to cooperate with us. They do not currently address elementary education programs specifically in the accrediting process. In fact, many states no longer have separate departments of elementary education, but handle licensing in the more general context of the Schools of Education. The accreditors believe our work can help them establish clearer expectations and better accrediting reviews for the elementary education programs.

We agreed to keep them posted. (We should find a time, when our El Ed team has come to an appropriate point, to invite TEAC and NCATE representatives to visit Utah and participate in a meeting of the El Ed team.)

APPENDIX D
DEGREE QUALIFICATIONS PROFILES
PRESENTATIONS

**“What is an Educated Person?”
Round XIV
November 4, 2011
Snowbird, Utah**

- 8:00 a.m. Registration and Continental Breakfast
- 8:45 a.m. Liz Hitch, Associate Commissioner for Academic Affairs, Utah System of Higher Education
- Charge to the Conference** -- Norm Jones, Chair, Regents' General Education Task Force
- 9:00 a.m. Holiday Hart McKiernan, Vice President, Operations and General Counsel, Lumina Foundation
“Pulling Back the Curtain on what Matters Most - Learning”
- 10:00 a.m. Break
- 10:15 a.m. **Welcome:** William Sederberg, Utah Commissioner of Higher Education
- 10:30 a.m. **SUU’s Experiential Learning Curriculum**
Briget Eastep, Assist. Prof. of Outdoor Recreation and Director of the SUU Outdoor Engagement Center
- Todd Petersen, Assoc. Prof. of English and Director of the SUU Creativity & Innovation Center
- 11:15 a.m. **Assessing Information Literacy** -- Wendy Holliday, Library Instruction Coordinator, USU
- 12:00 **Lunch** Columbine room
Report from the GE Task Force – Norm Jones
- 1:15 p.m. **SLCC’s Assessment Plan for College-Wide Learning Outcomes**
Dr. David Hubert, Professor of Political Science and ePortfolio Director
- Barbara Grover, Assistant Provost of Institutional Effectiveness
- 2:00 p.m. **Breakouts: How do you assess the Essential Learning Outcomes in your domain of General Education?**
- | | |
|-------------------------|----------------------|
| Communications Literacy | Humanities |
| Quantitative Literacy | Arts |
| Social Sciences | Physical Science |
| Life Sciences | Information Literacy |
- 3:00 Turn in assessment matrices and adjourn

Agenda
DQP Conference
April 2, 2012
Marriott Downtown at City Creek Hotel

8:00 – 8:50 – Breakfast

Welcome – Liz Hitch, Associate Commissioner of Higher Education

Presentation – Carol Geary Schneider

Attendees

Presidents

CAOs

Utah Tuning Leadership Team

IEBC Representative

9:00 – 9:20 – Review of Utah Progress – Norm Jones

Attendees

All of the above

Members of the Utah General Education Task Force

Members of all Utah Tuning Teams (Elementary Education, History, General Education
Mathematics, and Physics)

9:20 – 10:30

Introduction – Bill Sederburg, Commissioner of Higher Education

Presentation by Carol Geary Schneider

10:30 – 10:45 – Break

10:45 – 12:15 – Panel leading questions and discussion

Carol Geary Schneider

Bill Evenson

Dan McInerney

Kathryn MacKay

12:15 – 12:30 – Break

12:30 – 1:45 – Lunch with Discussion at Tables

2:00 – 4:00 – Team Meetings

APPENDIX E
EVALUATOR REPORT

Utah Tuning 2 Project
Interim Evaluation Report
August 2011 – May 2012

Prepared by

Randall Davies, Ph.D.
David Williams, Ph.D.
External Evaluators

May 2012

Brigham Young University
150 MCKB
Provo, UT, 84602

INTRODUCTION

This report documents evaluation activities from August 2011 to May 2012 for the Utah Tuning 2 Project funded by the Lumina Foundation. The purpose for this evaluation was to provide developmental evaluation consultation and formative evaluation assistance to key stakeholders (i.e., the Utah Tuning Leadership Team and discipline Tuning team members) in their efforts to adapt and improve the project. This evaluation report is provided in support of the Utah Tuning 2 Project's requirement to evaluate the project.

Project Background

This project is intended to improve student learning by embedding Tuning and Tuning reference points within the academic culture and practices of those working at institutions of higher education in Utah. In essence, the project endeavors to facilitate a systemic change at institutions of higher education by clearly articulating a common set of expectations for what students should know, understand, and be able to do upon completing a specific degree or set of learning experiences. The stated purpose of this initiative is to improve the quality of higher education by establishing transparent and fully assessable learning outcomes and competencies for degrees, discipline by discipline. The Tuning 2 project was designed to work in conjunction with other existing programs, including the Degree Qualifications Profiles initiative and Utah's Faculty Discipline Majors' Meetings. The long-term objective of the Utah Tuning 2 project is that all disciplines will be tuned, and every student graduating with a degree in a tuned discipline will demonstrate mastery of all learning outcomes and competencies that the team has determined to be critical for work in that discipline.

Project Activities and Components

The central activity of this project revolves around Tuning teams. There are four such teams currently in operation in Utah: physics, history, elementary education, and general education mathematics. This project continues a pilot project of the Tuning process for physics and history. The physics and history teams have been Tuning for over two years; however, several team members representing the various institutions have only recently joined the team, either replacing prior team members or representing institutions new to the Tuning process. The Tuning 2 project expands efforts to the areas of elementary education and general education mathematics (GE Math). These two teams began meeting in September of 2011. As stated earlier, the purpose of these teams is to establish fully assessable transparent learning outcomes and competencies for each degree or discipline in terms of what students should know, understand, and be able to do upon completing a specific degree (or set of learning experiences in the case

of GE Math). General education mathematics and elementary education were added to accommodate the Common Core State Standards adopted by the Utah State Board of Education (K-12). Each team member is to represent their institution as a liaison and advocate for the Tuning process back in their department. The Utah Tuning Leadership Team consists of five principle members and the external evaluators. The main function of the state coordinating committee is to facilitate the success of Tuning teams. The Utah Tuning Leadership Team for the Tuning 2 project meets regularly to discuss the progress of each team, plan next steps, and provide professional development opportunities aligned with the project goals (e.g., the Educated Persons and the Degree Qualification Profiles conferences). For some meetings the chairs of the discipline teams are included.

EVALUATION ACTIVITIES

The external evaluators for this project provided evaluation support using a developmental evaluation approach (Patton, 2011). Developmental evaluation centers on situational sensitivity, responsiveness, and adaptation. It is particularly suited to this project given the socially complex nature of the initiative and the fact that participants expect to continually adapt and revise the program and outcomes to meet the changing needs and purposes of specific degrees. In this role the evaluators serve as participating members of the Utah Tuning Leadership Team. An important purpose for this evaluation was to provide consultation and evaluation expertise to key stakeholders (i.e., the Utah Tuning Leadership Team and discipline Tuning team members) in their efforts to accomplish their Tuning goals.

The role of the evaluators is primarily one of consultation but is also targeted data collection and analysis. Evaluation activities included observing (and at times participating in) Tuning meetings and conferences, conducting surveys and focus groups, and counseling with the coordinating group. This was done to better understand what is currently happening, how it affects the Tuning process, and what to do next. In this role the evaluators have attended all Tuning meetings and activities, conducted focus groups with the GE math and elementary education teams at their initial meetings to establish baseline indicators, and conducted individual interviews with most members of all four teams to clarify understanding of the Tuning process, perceptions of the teams' progress, and any challenges and concerns they may have encountered while participating in the Tuning process.

SUMMARY OF EVALUATION FINDINGS

The contextual analysis below provides a summary of observations and feedback about this project. These descriptions are based on team meeting observations and interviews with participating team members. These results have been shared with the coordinating group and Tuning team leaders informally and through written summaries of results. The following section provides a summary of evaluation findings and discussions in terms of each group's current status, issues affecting the Tuning process, and suggestions for what to do next.

Current Status

Tuning often means something different to individual people depending on their role, length of involvement, and the context within which they perform their job. Each Tuning team experiences a unique set of conditions in which they function.

GE Math Tuning. As expected, individual Tuning team members were initially somewhat unsure about what they were supposed to be doing. The GE math Tuning team finds itself in a unique situation in that this group does not represent a specific degree, but rather provides specific service courses for various degrees and disciplines. Thus GE Math does not have a particular employer for its students but rather a variety of clients who rely on GE math courses to prepare students to succeed in their degree or discipline. At first this was a substantial challenge for the group, but they seem to have overcome this difficulty. The current learning outcomes established by this team for GE math are well formed, and the group is currently in the process of fine-tuning the wording for their outcomes. They are now exploring what they need to do next.

Elementary Education Tuning. Like the GE math team, initially these individuals were somewhat unsure what they were supposed to be doing. However, they are very process oriented; unlike any of the other groups, they have a clearly defined employer (i.e., elementary schools), and they have clearly established accreditation and licensure standards (e.g., the Utah Effective Teaching Standards) to which they must align their Tuning efforts. Therefore, team members are very familiar with learning outcomes and assessment. They currently have a comprehensive set of learning objectives aligned with the Utah Effective Teaching Standards, which focuses expectations on what might best be described as “classroom ready” outcomes. They often get caught up discussing how individual institutions function and focus on assessment issues, perhaps a bit prematurely. They struggle with the fact that their outcomes can only be determined using performance based assessments in a practicum or student teaching field experience setting. They also have expressed the concern that they might need to spend more time on the

development of these outcomes. Many have indicated they already have a required list of learning objectives (in fact they have several lists) that students are required to demonstrate meeting in order to become licensed teachers. Mandates from government and accrediting organizations also require teacher preparation institutions to meet a variety of standards and conditions. Tuning might seem like one more pressure to colleagues they represent.

History Tuning. The history group is probably one of the most advanced teams in terms of implementing Tuning at the various institutions. This is largely due to the efforts of Utah State University to integrate Tuning into the department and promote aspects of Tuning in other departments. Other institutions also have reported that faculty in their departments are fully aware of Tuning and are integrating aspects of Tuning into their department practices. Still some of the team members are new to the process and are implementing Tuning at a variety of levels. While they have established a clear set of student learning outcomes for their degrees, they recently have learned that their national organization (the American Historical Association, AHA) has become interested in Tuning at a national level. This may have implications for outcomes Utah has developed and implementation strategies they pursue.

Physics Tuning. The physics group has been working on Tuning for some time. Like elementary education they have a fairly comprehensive list of outcomes they feel students would need upon graduating with a physics degree. They have also been working at delineating these outcomes in terms of associates, bachelors, and graduate degrees. They are now grappling with the issue of assessment, while acknowledging that some of the outcomes are challenging to measure, making it difficult for them to guarantee that graduates have the listed knowledge, understanding, and skills.

Claims, Concerns, and Issues

Tuning is a socially complex process in that there is often low agreement on the specifics of what degree learning outcomes and competencies should be and how to complete the task of Tuning, given the diverse settings and contexts in which Tuning takes place. An oft used term when referring to the Tuning process is “muddling.” Based on observations and interviews the following claims, concerns, and issues have been raised by participants.

Claims Regarding Tuning. Several participants made claims about the value of Tuning in addition to those articulated in the official purposes. These include: (1) the benefit of meeting with colleagues from other institutions to network and discuss common interests and issues; (2) the perceived benefit of personal learning; and (3) the fact that Tuning is aligned with and useful for meeting accreditation requirements.

Concerns Regarding Standardization. A consistently mentioned concern is that Tuning may become a subtle form of standardization. Reactions vary though, with some participants saying they accept this as the goal of Tuning. Others have accepted the official statement that establishing standards and expectations for degree completion does not mean institutions must standardize the way they provide services or assess students. Yet, a few participants talk about Tuning as a way to align all the participating institutions and faculty with the same learning objectives as a kind of standardization. This is compounded somewhat by the Faculty Discipline Majors' Meetings where issues of course credit transferability are considered although standardization is not. This concern is more prominent with individuals new to the Tuning process and less so with those who have been participating in the project for a while.

Concerns Regarding Assessment. A concern many groups have mentioned often in meetings is that of assessment; specifically, some important outcomes and expectations are extremely difficult to measure. This makes it difficult to guarantee that students graduating from a program will have all the important dispositions and abilities Tuning members hope they would have.

Concerns Regarding Tuning as a Grassroots Initiative. A concern some have expressed is the perception that Tuning claims to be a grassroots initiative, but may actually be motivated by accreditation requirements and/or administrative and state-level pressure. Certainly it is faculty-driven in that input from department faculty through their representatives is sought and usually obtained. Still, some have mentioned that more input is needed from the faculty being represented. The Utah Tuning Leadership Team is careful not to prescribe outcomes or the ways team members implement and assess them. This often leads to a concern regarding time and the issue of getting department feedback discussed below.

Concern Regarding Time. Several participants have expressed concerns about the amount of time it takes to accomplish the Tuning tasks. Although none has mentioned feeling they do not wish to participate, and most feel it is important to take time in order to "get it right," they do worry that the process takes more time than expected. Several have suggested the need to meet more often to keep the momentum going between sessions.

Issue Regarding Department Feedback. The most common issue mentioned by almost all participants focused on getting department feedback and buy-in. There is a general perception that faculty in their departments are slow to provide feedback and in some instances resistant to or express some apathy regarding this endeavor. This often is noted in conjunction with the feeling that departments are already doing certain aspects of Tuning or that there are several other related initiatives that should be getting at the same purposes. This issue was most prominent with the elementary education group but was also expressed by some members of each team.

Suggestions for Next Steps

While each of the Tuning teams is at a different place in their Tuning efforts, the most pressing issue each of the teams faces is getting feedback and buy-in from their colleagues and administration back in their departments. The physics and history teams have had some discussion about this but the GE Math and elementary education teams are just beginning to struggle with this issue. Each of the Tuning teams has additional issues and concerns they are addressing as well.

GE Math Tuning. In addition to getting input from the various clients they serve with GE math across their institutions, this team must next discuss ways to implement and assess the learning outcomes they identify through collaboration with their clients.

Elementary Education Tuning. While this group has made good progress in identifying and aligning their list of essential learning outcomes with state standards, the biggest issue for this team is the need to reduce their list of outcomes into a manageable set of key expectations. Their current set of outcomes is tied to the Utah Effective Teaching Standards, which focus expectations on what practicing teachers should be doing in the classroom. Because of this, another challenge they will face is backing up a bit to make their outcomes assessable in terms of knowledge, understanding, and demonstrated skills a pre-service teacher should be expected to have for licensure, while taking individual institutional perspectives into account.

History Tuning. The greatest challenge facing the history Tuning groups seems to be the pending alignment of their outcomes with whatever their national association (AHA) comes up with for essential learning outcomes.

Physics Tuning. The physics Tuning team has a clear set of learning outcomes. Like the elementary education group they are faced with the issue of reducing their list to a set of key expectations that can be assessed. They are also looking at adapting the learning outcomes to the associate, bachelor, and master degree levels.

CONCLUSION

Overall, this initiative is well organized and in compliance with all the specified aspects of the grant. The Utah Tuning Leadership Team functions well together and actively seeks to facilitate the success of each of the Utah Tuning teams. The specific teams meet regularly and each is making progress toward their goals. While each group has specific issues they are dealing with, the main issue all participants face is collaborating fully with and thereby getting adequate input, feedback and buy-in from their department colleagues.

REFERENCE

Patton, Michael Quinn (2011). *Developmental Evaluation: Applying complexity concepts to enhance innovation and use*. New York: Guilford Press.

APPENDIX F
COMMUNICATIONS

Giving higher education a tune-up: Utah takes steps to ensure students have right skills for workforce

Educators, officials meet with industry to improve degrees

By [Geoffrey Fattah](#), Deseret News

Published: Tuesday, Sept. 13 2011 12:29 a.m. MDT

SALT LAKE CITY — Utah's higher education officials are working to make sure its college students are in tune with the industries they want to work in.

More than ever, a college education is becoming expected for many industries. National education data shows a majority of employers in the U.S. expect some level of post-secondary education and that number is expected to grow.

Utah is one of a handful of states that is working to clearly identify the knowledge and skills expected by employers in a variety of industries.

In a method called "tuning," faculty from Utah's eight institutions of higher learning who teach the same subjects meet to discuss the fundamental knowledge students need to become engineers, physicists, historians, teachers, etc. State higher-education officials also meet with industry officials in order to get a feel for what skills students need to have when they enter the workforce.

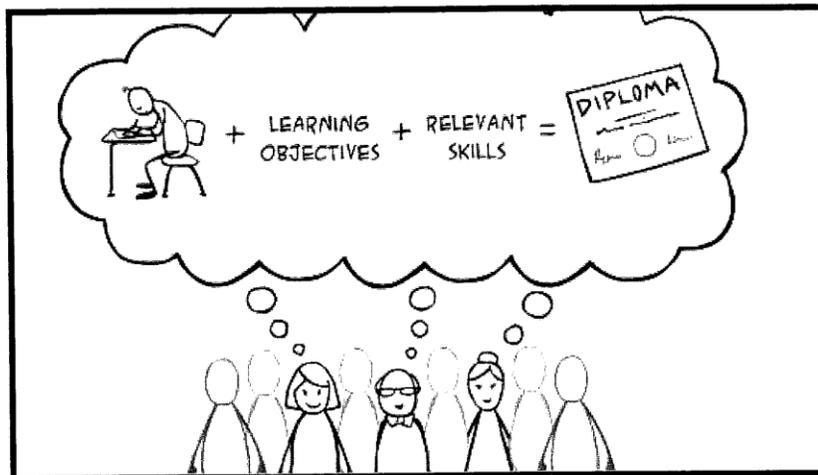
"We can say to employers, this is what a student understands and can do," Janice Gygi, director of the Utah Tuning Project, said. While tuning is just beginning to catch on in other states, Gygi said Utah's colleges and universities have been evaluating courses and degree requirements for a decade now.

Utah's work caught the eye of the prestigious Lumina Foundation for Education, one of the nation's largest foundations that is dedicated to expanding access to education after high school. In 2009, the foundation gave Utah a \$150,000 grant, along with Indiana and Wisconsin. This month, Utah officials announced that the Lumina Foundation had expanded its grant to another \$390,000.

The ultimate goal of tuning, Gygi said, is to make it clear to students, parents and policymakers what a student must know and be able to do for each major and degree level. For lawmakers, the approach gives them information so they can allocate resources based on an understanding of what a given degree means for students, society and industry.

Based on feedback from various industries, Gygi said many employers say they want students with skills in problem solving, written/spoken communication and critical thinking. The challenge is that each of those skills are taught in a different way depending on the discipline. It will take time to identify needs for each area.

"We are working on making sure that we're giving students what they need," said Phyllis Safman, assistant commissioner of academic affairs for Utah System of Higher Education. Safman said tuning is time intensive and requires faculty from multiple institutions to meet.



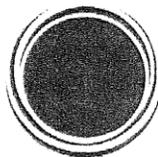
Tuning: Focus on Learning Outcomes

Tuning represents a shift from seat time to outcomes in both teaching and learning. USHE is now in the third year of this process that brings together faculty from all eight public institutions, plus Westminster, BYU and WGU to collaborate and identify essential learning outcomes and competencies expected of students. This project disciplines are physics and teaching physics, history and teaching history, general education mathematics and elementary education. In the latter two, learning outcomes and competencies aid the common core state standards adopted by the State Board of Education in K-12 mathematics and language arts.

This process is faculty-driven, where learning outcomes and competencies are identified and expectations for each discipline are defined. Faculty determine at each degree level what a student needs to understand and do to demonstrate competencies, and the process is transparent so that parents, students, policy-makers and employers know exactly what to expect of each graduate. Additionally, each

faculty member is encouraged to use their own creativity in how courses are taught and how students may demonstrate learning. This upholds their discipline's standards, but without "standardization."

The Lumina Foundation funded this project in Utah to show the nation how to better focus on learning outcomes; Tuning shifts higher education from focus on grades to competencies expected of students. Students learn from the assessment experience, demonstrate what they have learned and graduates are well prepared to enter the labor market. Ultimately, Tuning challenges traditional notions of seat time and credits and gives a blueprint of what is expected from students. Tuning changes how we prepare students for 21st century success.



Lumina[™]
FOUNDATION

June 6, 2010, Chronicle of Higher Education

The Fading Illusion of Institutional Brands 1
The Chimera of College Brands

Mark Shaver for The Chronicle

By Kevin Carey

I noticed two advertisements recently that say a lot about the power of institutional branding in higher education. I also had two conversations that suggest how that power might someday fade.

The first ad was pasted inside a bus stop in Washington. The University of Phoenix, the sign noted, has the same accreditation as "America's top universities."

The reason that Phoenix runs such an ad is obvious: The company suffers from a brand deficit. The university was the butt of a joke in a recent issue of GQ, which published a facetious letter to the Class of 2010. "You graduated!" the letter read. "Or maybe you just spent 45 minutes on the University of Phoenix Web site, clicked PRINT DIPLOMA, and went back downstairs to do a couple of pre-Family Guy bong rips." People are suspicious of for-profit colleges, and of online degrees; the two together doubly so. Thus, Phoenix's attempt to rub elbows in public with the higher-education elite.

The second ad, published in The New York Times's Education Life section, featured a young woman wearing a Harvard T-shirt, sitting studiously in front of academic-looking stone columns. The ad touted "Harvard Summer School," where anyone with \$4,450 and a dream can live in "historic Harvard houses" for seven weeks. ("JFK slept here," the Web site says, "and so did Henry David Thoreau, Natalie Portman, and Al Gore.") But they'll also need an additional \$2,580 per four-credit class, which may be taught by either Harvard College professors or "visiting scholars" (i.e., not Harvard professors).

But there's a catch: You can apply those credits toward a Harvard degree only if you get accepted at Harvard, and good luck with that. Or you can transfer the credits to another college, but only if the other college accepts them. One should be even more wary of online credits from Harvard Summer School, as the list of institutions that won't accept them includes ... Harvard College.

Harvard has the opposite of a brand deficit. It has a brand surplus. The name is so strong that Harvard can run a side business selling fake Harvard credits and nobody bats an eye.

Brands are a mighty force in this complicated world. They provide clarity and predictability, a way of quickly categorizing information. Branding seems a natural fit with the predominant method of organizing and governing higher education: creating institutions. Institutions have deep roots in our society and collective consciousness. They create tribes whose markings last a lifetime. The more people

around the world who need and desire higher education, the more important institutional brands appear to be.

Yet brands fit the reality of higher education less snugly than they seem to. Every Banana Republic in America will sell you the same merino sweater. Even closer parallels in the intellectual-property business have identifiable standards. A randomly selected album issued by Matador Records will almost surely feature fine indie rock. So too with Basic Books, with its roster of nonfiction books by distinguished authors, or the Met, with its renowned operas.

What you get from a college, by contrast, varies wildly from department to department, professor to professor, and course to course. The idea implicit in college brands—that every course reflects certain institutional values and standards—is mostly a fraud. In reality, there are both great and terrible courses at the most esteemed and at the most denigrated institutions.

That's because responsibility for the content and quality of courses lies largely with individual professors, and it's very hard for students to know how good a course is before they enroll. Students also have to buy all or most of their courses from the same institution. Lacking information and locked into institutions, people fall back on brands.

That, however, is starting to change. One doesn't normally associate Utah with phrases like "European-style reform." Yet the Beehive State is at the forefront of a movement to create far more rationality and openness in the process of undergraduate education.

With a grant from the nonprofit Lumina Foundation for Education, physics and history professors from a range of Utah two- and four-year institutions are applying the "tuning" methods developed as part of the sweeping Bologna Process reforms in Europe. Led by William Evenson, a former professor of physics at Brigham Young University, faculty members developed a comprehensive account of what physics students need to know and be able to do at the associate, bachelor's, and master's degree levels. "The B.S./B.A. student should demonstrate the ability to use statistical mechanics to define the entropy from the density of states and connect this form to the 2nd law when expressed as $ds = dQ/dT \geq 0$," for example. Other requirements include extensive laboratory, research, and communications skills.

The group also created "employability maps" by surveying employers of recent physics graduates—including General Electric, Simco Electronics, and the Air Force—to find out what knowledge and skills are needed for successful science careers.

"The process builds in accountability," Evenson told me. "Once you've defined the outcomes, you can ask, 'Are the programs really doing that?' If a student finishes and can't do what's advertised, they'll say, 'I've been shortchanged.' Transparency makes it easier for students, parents, and policy makers to make the right choices." Tuning works only if it's faculty-driven, Evenson stressed, rather than imposed from the outside. And tuning doesn't mean that different colleges and professors will all start teaching exactly the same way—only that they will teach with shared, public goals in mind.

The history team, led by Kathryn MacKay, an associate professor of history at Weber State University, drew on recent work from the American Historical Association to define learning goals in historical knowledge, thinking, and skills. Far from the sad ahistoricism displayed by the Texas Board of Education's textbook-standards committee in recent months, the Utah tuning team focused on a combination of rich knowledge and the development of historical perspectives and analytic skills. "We all see through a glass darkly," says MacKay, in acknowledging the challenge of translating this work at the institutional and departmental level. But tuning is a crucial first step.

In the immediate future, as the higher-education market continues to globalize and the allure of prestige continues to grow, the value of university brands is likely to rise. But at some point, the countervailing forces of empiricism will begin to take hold. The openness inherent to tuning and other, similar processes will make plain that college courses do not vary in quality in anything like the way that archaic, prestige- and money-driven brands imply. Once you've defined the goals, you can prove what everyone knows but few want to admit: From an educational standpoint, institutional brands are largely an illusion for which students routinely overpay. The best teaching might be at Salt Lake Community College, or Weber State, or somewhere else entirely. It might even be from a place that's not an institution at all, but rather a provider of individual, *à la carte* courses. Openness will let us know.

When that future arrives, life will be both harder and easier for the University of Phoenix. The easy—and, frankly, absurd—argument that mutual accreditation means anything important won't hold water anymore, so Phoenix will have to find some other selling point for its ads. But if it really does provide a good education, it'll be able to prove it in a way that might silence the wags at GQ.

Harvard, meanwhile, won't be able to generate spare cash by peddling a for-profit Disneyland version of itself. The irony of institutions dedicated to knowledge creation creating little information about what their own students learn will eventually be history. The sooner the better.

Kevin Carey is policy director of Education Sector, an independent think tank in Washington, which receives financial support from the Lumina Foundation for Education.

Tuning physics in the US

Taking a page from the education reforms in Europe, groups around the world have been exploring tuning as a tool for making university programs more relevant and transparent. In the US, physics was one of two fields Utah began tuning last year.

Utah's nine publicly funded colleges and universities took part in a tuning pilot project that included schools in Minnesota and Indiana. With \$150 000 apiece from the Lumina Foundation for Education, each participating state picked two or three fields to tune; the exercise is part of the nonprofit, Indiana-based foundation's goal of upping the percentage of people in the US who earn a college degree from around 40% now to 60% by 2025.

Says Lumina program director Kevin Corcoran, "The Achilles heel of higher education is that people cannot describe what degrees mean without using credit hours." Tuning is a faculty-driven process that aims to spell out—for prospective students, their parents, faculty, potential employers, and policymakers—the competences of a graduate: What skills does a bachelor of physics have? A master's?

"Even with a relatively consistent physics curriculum, there are significant variations in how well the major learning outcomes are achieved," says retired physicist William Evenson, the Utah System of Higher Education consultant who led the state's physics tuning panel. The panel's student representative, Jeff Hodges, who is in his first year of PhD work at the University of Utah, says, "It shocks me to be in graduate school with people who do not have any [upper-division] E&M under their belt." In the tuning process, he says, "we focused on defining degree programs. How do you tell a teacher what a student needs to know, without telling them how to teach? We came up with skill sets."

Guided by input from students, alumni, faculty, and private-sector employers, the academic panel developed a list of dozens of skills. For starters, the list says a physics bachelor should have an understanding of the role of evidence, of cause and effect, of

experiment, of scientific ethics, of science as a community effort. A bachelor should have estimation skills, understand simple models, practice laboratory safety, be able to carry out error analysis, and be able to present an informal talk on a lab experiment or class project.

"It is realistic to expect students to accomplish a certain level by a certain degree," says Evenson. "We are not saying what the curriculum should be or how you get those competences. We recognize that every institution has a different set of students, a different mission. So every institution will have their own take on how to achieve these outcomes." In addition to transparency, he says, "tuning focuses a lot on accountability."

But Brad Carroll, a panel member from Weber State University in Ogden, says, "Ultimately, it is about curriculum. If you find that businesses say they want people who work well in teams, we might restructure lab courses. If we find out that they need more electronics, we might change what we teach." Each faculty panel member, he says, will take results from the tuning process back to their own department, "and we may make curricular changes."

The Utah tuning panel members are now advising the Texas Higher Education Coordinating Board, which, as part of a \$1.8 million grant over four years from Lumina, is launching tuning in four engineering fields. One aim in Texas is for students to be able to more easily transfer among institutions, says Mary E. Smith, the board's assistant deputy commissioner for academic planning and policy. "We have lots of swirling students that take classes all over the place." The hope behind Texas's tuning effort, she says, "is to get more students to successfully graduate from engineering programs in our state. Our data show that Texas is not meeting its targets for graduating STEM [science, technology, engineering, and math] students. Tuning is part of [our plan for] closing the gap by 2015."

Toni Feder

competences, rather than content," says Donà dalle Rose. For physics, some three dozen generic and subject-specific competences emerged. For bachelor's and master's graduates, the generic competences include varying levels of "capacity for analysis," "capacity for synthesis," "learning to gather relevant information," "teamwork," "ethical commitment," and "good working knowledge of the English language." Specifically in physics, graduates at those levels should display "deep knowledge and understanding," "experimental skills," and abilities in estimation, mathematics, searching the literature, and problem solving, among other things.

The tuning process "changed my way of thinking," says Donà dalle Rose. "I try to convince my students that what is important is what remains in their minds. Looking at outcomes rather than content means rethinking how to shape the lecture, how to make it more interactive." Tuning, he adds, represents a "pedagogical revolution. The European convergence of higher education and the national reforms to-

gether made fertile soil for the tuning process."

"No university will accept a group of people telling them what to do, so the way implementation is done is up to each university," says Fernando Cornet, a physicist at Spain's University of Granada and a member of the physics tuning team. "But tuning is somehow a landmark. It has been accepted by everybody. Each country has modified it a bit and adapted it to their mentality and culture." Implementation is also helped, Donà dalle Rose says, by "many concepts being impressed by national law."

"Tuning has become core to so much of the Bologna Process," says Birtwistle. "It incorporates learning, students, employability." Taking into account the private sector, he adds, "is anathema to some wings of liberal education. But everyone needs a job."

The concept has spread quickly. The first knock-off project, for which Gonzalez and others in Europe have served as consultants, was for 18 countries in Latin America. Pilot tuning projects have been undertaken in the US (see ac-

companying story), and projects are on the books in Africa, Russia, Lithuania, Georgia, Australia, and India.

An ongoing process

Going into the second decade of the Bologna Process, "the first priority should be not to add any more new goals," says Haug. Education ministers have repeatedly widened the list of goals involving credit systems, lifelong learning, funding, the link between education and research, and other things. One official goal, adopted in 2009, is for the percentage of students who study abroad to grow to 20% by 2020. The additions have "blurred the initial short list of structural changes," Haug says, and, combined with the expanding circle of participating countries, "complicated enormously the implementation of the Bologna Process. We need to make sure that what remains to be done is done. And where initial reforms have not been done properly, I am quite certain some countries will reconsider." For example, he expects that some of the new bachelor's programs will be switched from three-year to four-year degrees.

THE CHRONICLE

of Higher Education

Brainstorm

Home Opinion & Ideas Brainstorm

Previous Screamers and Users and Trolls, Oh My!	Next Student Loans and Subprime Mortgages: An Invalid Comparison
---	---

June 23, 2010, 12:00 PM ET

Tuning, Continued

By Kevin Carey

Earlier this month I wrote some blog posts and a column focused, in part, on the European "Tuning" process and the possible virtues of its use in the United States. Reasonably enough, some people think Tuning sounds like one more bureaucratic assessment mandate that will waste everyone's time, think tank people may be enthusiastic about this kind of thing but they don't know what it's like to be in the trenches with actual students, and so on and so forth. So I held off writing about tuning until I had a chance to talk to actual American college professors who have worked through the process themselves and could explain to me why it's a good idea for faculty to sit down together and work through what students in a given field ought to learn, based on the consensus of the discipline and the job market.

Surprisingly, their testimony didn't seem to hold much water. So I'm going to try again. With their permission, I'm posting the Utah Final Tuning USA Report here. Take a look! It describes why the historians and physics professors in Utah think this is a good idea, what they did, and what they came up with in terms of outcomes and expectations for students. Nobody thinks the process is perfect or entirely complete, but it's fair to say they believe it was valuable and worth continuing.

In the column I quoted Dr. Bill Evenson, leader of the physics team, explaining the value of tuning. I only had space for a few lines in the column but here are some more quotes from my conversation with Dr. Evenson that I thought were interesting:

"We tried to refine our notions of what the workplace needs in a physics or history major or whatever discipline we're looking at. We did this by conducting surveys of employers, current students, alumni and faculty members. We asked, "What are the most important competencies to focus on? What is our discipline about? What does a person who gets a degree really need to know?"

"Tuning is more program and discipline definition than it is curricular reform. We understand that every university has its own students, its own mission, its own way of achieving its goals. We had groups from all over, many different institutions, and they could agree on what a bachelor's degree would represent. They also felt it was important to have freedom to achieve those outcomes. We didn't define curricula; we defined outcomes."

"I think it's quite unlikely that we'll have common assessments, because of the different conditions at the different universities. It's more likely that there would be assessments that are coordinated in terms of focusing on the same outcomes. At some institutions you're going to have a senior course with five students and a lot of hands-on activities while somewhere else there would be 50 students so the appropriate assessment is different."

"We created 'employability maps' as part of this process. We indicate where students with bachelor's degrees and master's degrees in these disciplines are employed, so we have a sense of how these degrees feed into the market. Students and parents will know at the start the program what the employment prospects are. I would hope that students and parents and policy makers take seriously the possibility of seeing those things up front."

"I talked to somebody in Texas a few weeks ago, an engineer, who said 'our firm doesn't hire engineers with bachelor's degrees anymore, because we have to give them too much training after we hire them, so we insist on a master's degree.' That's a reasonable, rational decision. It may well be if they had more confidence in the outcomes they would be willing to hire people with bachelor's degrees."

This last point strikes me as important. Current college credentials do a very poor job of transmitting detailed information about the people who hold them. To the extent that one is concerned about creeping credentialism, bachelor's degrees becoming the new high school diploma, etc., policies that provide more transparency will make the labor market work better and save time and money all around.

Meanwhile, none of those who insist that this is all unnecessary because colleges are already doing this stuff have responded to my assessment challenge, which is, in summary: A) Pick any program at any college, B) Show evidence of how much students are learning in that program, and C) Based on that evidence, tell me if the program is doing a good job helping students learn. It's not too late—contest winners will win fame and glory on this blog!

Copyright 2010. All rights reserved.

The Chronicle of Higher Education 1255 Twenty-Third St, N.W. Washington, D.C. 20037

Other Articles and Presentations

Bill Evenson

American Association of University Professors, June 11, 2011. "Making the implicit explicit – Tuning USA empowering the faculty and stimulating curriculum change," Holiday McKiernan, Marcus Kolb, Bill Evenson, Tim Birtwistle

College Board Forum, October 26, 2011. "Tuning USA and Degree Qualifications Profiles," William Evenson

Lumina Foundation Washington, DC Briefing, February 29, 2012.

Presentation to NCATE and TEAC leaders in Washington, DC, Jan. 24, 2012 – Janice and Bill explained what Tuning is, what Utah has done, and Utah's work now with EI Ed.

Norman L. Jones

"LEAPing in Utah: Lessons Learned Along the Way," Spring 2011, *Peer Review. Emerging Trends and Key Debates in Undergraduate Education*, published by American Association of Colleges and Universities, 13(2), 16-19. aacu.org/peerreview.

"Tuning the Disciplines." (in press; to appear in *Liberal Education*)

Board Meeting, Liberty Fund, Indianapolis, IN. June 28, 2011. "Degrees of Worth: The Lumina Foundation's 'Tuning USA' Project and the Assessment of Higher Education."

Utah State University Regional Campus and Distance Education Spring Retreat, USU Eastern and RCDE, Price, UT. February 17, 2012, "LEAP Update with Strategies for the Implementation of High Impact Teaching and Learning Practices."

General Education and Assessment: New Contexts, New Cultures, Association of American Colleges and Universities, New Orleans, LA. February 24, 2012, "Plenary: Encouraging faculty engagement in curricular change."

Lumina Tuning Meeting for Utah, USHE, Salt Lake City. April 2, 2012, "The Quality Conversation in Utah: Navigating the Alphabet Soup."

Western Academic Leadership Forum and the Western Interstate Compact on Higher Education, WICHE, Phoenix, AZ. April 19, 2012, "Trust the Faculty" in a session entitled "Getting to Know You: Nurturing an Exchange of Views for Identifying and Achieving Shared, Quality Outcomes."

Daniel McInerney

Lumina National Productivity Conference, August 24, 2011. "What does quality look like in productive higher education institutions?" Dewayne Matthews, Holiday Hart McKiernan, Daniel McInerney, Carol Geary Schneider, Paula Myrick Short.

American Historical Association Annual Meeting, January 5, 2012. "What Works and What Does Not Work in the Survey and Assessment."

Kentucky Council on Postsecondary Education, State-wide Tuning, March 2, 2012, "From Theory to Practice: Institutionalizing the Tuning Process."

Midwestern Higher Education Compact, Cross- State Tuning Conference, "Turning Theory into Practice: Strategies for Tuning on a Campus."

Conference of the Americas on International Education, April 27, 2012. "TUNING: The New Global Platform for and in International Cooperation and Educational Innovation."

APPENDIX G
PARTICIPATION WITH OTHER GROUPS

**How We Strengthen Higher Education:
The Convergence of the
Interstate Passport Initiative, Tuning USA, and the Quality Collaboratives**

by
Phyllis “Teddi” Safman
Assistant Commissioner for Academic Affairs
Utah System of Higher Education

March 2012

Introduction

The Utah System of Higher Education is engaged in three regional/national projects: the Western Interstate Passport Initiative, Tuning USA, and the Quality Collaboratives. All three projects have the potential to change how we engage in higher education, specifically what and how we teach to foster depth in student learning. Externally funded, all three projects share similar characteristics and converge in their processes and expected student learning outcomes, thereby promising to positively impact higher education.

In addition, all three projects contribute to state goals: The Utah Higher Education 2020 plan aims to have 66% of Utahns ages 25 to 64 with a postsecondary degree or certificate by 2020; The Salt Lake Chamber’s initiative, Prosperity 2020, has as its goal to strengthen Utah’s economy by investing in education, as does the Utah Governor’s Education Excellence Commission.

This brief paper will describe the three projects and the processes and outcomes on which they converge.

The Interstate Passport Initiative, funded by the Carnegie Corporation of New York and coordinated by the Western Interstate Commission for Higher Education (WICHE), includes five western states (California (CSU system), Hawaii, North Dakota, Oregon and Utah), pairing from each state one or more community colleges with one or more universities. The faculty collaborate to assure that successful completion of the lower division general education core will transfer within the five cooperating western states. (Utah is including all eight of its system institutions.) Students successfully completing the lower division general education core will earn a Passport. The core includes oral and written communication and quantitative literacy, all based upon the Essential Learning Outcomes (ELOs) developed by the Association of American Colleges and Universities and employers nationally. Sending institutions will have assessed the competencies expected for completion of the core and awarded the Passport to eligible students. Receiving institutions will accept the core from Passport holders who will not need to repeat courses that map to general education expectations. This two-year project will track students who transfer with the Passport to determine how well they perform in their subsequent courses and in what timeframe they graduate (to the extent that additional funding allows).

Tuning USA, funded by the Lumina Foundation for Education, is a process of faculty collaboration, within an academic discipline, that identifies student learning outcomes and competencies expected through each degree level – associate, bachelor, and masters’ degrees. In Tuning, faculty determine not only the learning outcomes and competencies at each successive level of depth, but the methods that students may use to demonstrate attainment of competencies. These methods include high impact practices such as e-portfolios, group projects and written research papers. The process is transparent and clearly

communicates to students, parents, employers and policy makers what students are expected to know, understand, and do at each degree level. In Utah all system institutions are involved as are three private institutions.

The Quality Collaboratives, funded by the Association of American Colleges and Universities (AAC&U) through a Lumina Foundation grant, pair a community college with a university to improve transfer/articulation between the two- and four- year institutions and determine assessment of student learning outcomes. The Quality Collaboratives address general learning, as in the Passport, field-based learning, as in Tuning, and the relationships between them. Utah has paired Salt Lake Community College and the University of Utah (U of U) to address lower division courses in Business, specifically the Associate of Science in Business degree (ASB). The U of U has changed its requirements in its lower division business program, so transfer/articulation issues must be addressed to avoid disadvantaging transfer students. The Utah project will use the Degree Qualifications Profile and the Essential Learning Outcomes as frameworks to foster integration between general learning outcomes and specific field-based competencies. The entire system's business program faculty will participate in a statewide meeting in April to assure that all institutions understand and adjust curricula so that students will be able to transfer seamlessly into a business major. In addition, the faculty will work with e-portfolios to assess student learning outcomes.

Convergence

These three projects have the following elements in common: First, faculty working collaboratively across institutions are expected to determine student learning outcomes and competencies. As faculty work together, they develop trust with their colleagues across institutions (Tuning and the Quality Collaboratives), state systems (Tuning, Passport) and across five western states (Passport). This means that faculty will accept one another's assessments that demonstrate students have met the agreed-upon competencies.

Second, learning outcomes and competencies make us rethink credit, courses and seat time which have served traditionally as proxies for student learning. None of the projects is expected to challenge accepted practices with regard to credit and courses – at least, not yet.

Third, the AAC&U Essential Learning Outcomes (ELOs) form the basis for what students are expected to know and demonstrate in all three projects.

Fourth, all three projects support transfer and articulation to either additional general education courses or to academic major programs. All three expect that departmental faculty will inform their colleagues, department chairs, deans and chief academic officers of the projects and their benefits to the teaching/learning relationship.

Fifth, all three projects ultimately should be accepted into the academic fabric of participating institutions. All of the projects, particularly Tuning and the Quality Collaboratives, support high impact assessments on student learning, thus demonstrating accountability to the higher education community, employers and policy makers.

Policy Issues and the Utah Board of Regents

Raising the level of performance of Utah's students through intentional and collaborative work of faculty enhances the efforts of the USHE to reach its 66% graduation goal and, at the same time, provides Utah students with an education that prepares them for the future. Changes in policy can be informed by all three projects and support both completion and a quality education.

1. Emphasis on Quality and Outcomes

Tuning USA and the Quality Collaboratives create processes of student engagement that have been shown to contribute to completion. Applied practices by students better prepare them for the workplace and citizenship. And the movement away from multiple choice tests to actual student demonstrations of learning through high impact practices has implications for accountability as parents, students, policy makers and employers will be aware of what students know, understand and are able to do at each degree level. Thus, Regents' policies might reflect examples of engaged practices from USHE institutions that lead to completion and provide a quality education to our students.

2. Focus on Acquisition of Competencies

Because of the transparency of the process, particularly in Tuning, institutions will be able to articulate what each academic degree expects of its graduates. Thus, the Regents will have definitions for associate's, bachelor's and master's degrees in each academic discipline that has been tuned. With emphasis on depth of learning, as the projects continue and classroom practices change, the Regents' policies might be adapted to support depth of competency development with less emphasis on seat time. Approval of new programs should be predicated on the identification of learning outcomes and competencies rather than solely on course title.

3. Leadership Focused on Learning

Regents should include a teaching and learning focus when interviewing candidates for Commissioner and institutional Presidents. Each institutional leader must create an environment where students can learn and faculty can practice supportive teaching/learning strategies that produce not only retention and completion, but also a quality education for all students. Regents can play a major role in expanding engaged learning and teaching by hosting a series of symposia by national experts for Utah faculty and administrators.

Conclusion

All three projects will require time and energy to integrate their processes into faculty thinking and practice. Faculty need time to communicate with one another, to build mechanisms to identify competencies and modify systems to accommodate new learning. Thus, student learning will improve over time as more faculty become involved and various high impact assessment systems are developed.

These projects have great potential to strengthen higher education today as our faculty adapt new ways of teaching and learning into their classrooms. All three projects clarify our enterprise and our values: The education of all students at levels of depth that prepare them to succeed as contributing employees, entrepreneurs and as citizens. The Interstate Passport Initiative, Tuning USA, and the Quality Collaboratives promise to change the landscape of higher education with exciting new practices in teaching and learning in this, the 21st century.

Other Participation
Also See Presentations in Appendix F

Phyllis “Teddi” Safman

- Member of the Board, The Institute for Evidence Based Change, IEBC.
- Participant, Association of American Colleges and Universities (AAC&U), Liberal Education and America’s Promise (LEAP) project.
- Participated with Janice Gygi in The Texas Tuning Initiative Webinar on May 16, 2012.

Bill Evenson

- Traveled to Southern New Hampshire University with Dan McInerney to review their three-year model, May 15, 2012.

Norman Jones

- Member of the Policy and Faculty Development groups, American Association of Colleges and Universities Quality Collaboratives Project, Washington, DC.
- Board Member, Lumina Foundation/Hewlett Packard/Institute for Evidence Based Change, Indianapolis, Indiana.
- Advisory editorial board for *Liberal Education*, American Association of Colleges and Universities.
- Chairperson, Utah Board of Regents Task Force on General Education, Salt Lake City, UT.
- Chair of a Presidential Task Force on curricular integration at Utah State University, 2011-2015. Based on the Tuning process of faculty leadership, all majors are to tune in connection with the DQP process. This embeds Tuning in the curricular process.
- Working with the Business Innovation Factory, Utah State University is inviting students into the feedback process for Tuning general education and degrees in preparation for DQP's.
-

Daniel McInerney

- Participant on Lumina grant to the American Historical Association (AHA) meeting to develop a set of learning outcomes for history programs across the United States.
- Participant as a consultant, Kentucky Tuning Project, March 1-3, 2012.
- Participant as a consultant, Midwest Higher Education Compact (MHEC) Tuning Project, April 18-21, 2012.
- Traveled to Southern New Hampshire University with Bill Evenson to review their three-year model, May 15, 2012.

Visits from Other Groups to Utah Tuning Project

- Hosted MHEC Tuning directors in Salt Lake on September 20, 2011.
- Utah Tuning Leadership Team and the discipline team chairs met with Holiday Hart McKiernan prior to her presentation at the “What Is an Educated Person?” Conference, November 3, 2011.
- “What Is an Educated Person?” Conference was attended by Michelle Kalina, IEBC.
- Hosted Adina O’Hara, IEBC, at meetings of Utah Elementary Education and History Tuning Teams, February 10, 2012.
- Hosted Michelle Kalina, IEBC, at conference on Degree Qualifications Profiles and Tuning, April 2, 2012.