

Demonstrating Achievement and Success in an Era 3 World

By

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Introduction

It is imperative that we rethink what every student should know and be able to do in a rapidly changing, Era 3¹, 21st century world, with growing and overwhelming amounts of accessible knowledge, search engines, new forms of social networking, changing career options and choices, easy access to computers, amazing science and technological advances, a primarily service and knowledge based economy, and complex global and national issues. As students leave high school, they should demonstrate that they are ready for their next journey as a lifelong learner, ready for post high school learning experiences in college, through job training, or with the military; as a voting citizen, who intelligently develops positions on the issues of the day and acts accordingly; or as someone who has a beginning understanding of his or her strengths and talents, and has developed tentative plans for their future and future well-being. Figure one describes a mission statement and three outcomes based on the needs of students in this Era 3 world².

[Insert figure one here]

Once we decide on what every student should know and be able to do, how do we demonstrate that students are actually prepared to become lifelong learners and active citizens, and on the road to self-development? Three types of assessments designed to measure these three outcomes are suggested here– critical knowledge exams that determine whether students have learned core background knowledge and understandings that prepare them for future learning and citizenship; performance tasks that determine whether students have learned and are able to apply and transfer lifelong learning skills, habits of mind and citizenship skills; and personal reflections and plans that demonstrate some understanding of individual motivations, interests, talents, strengths and plans for the future and future well-being.

Here is a further explication of these three types of assessments, with examples, that illustrate whether students have adequately been prepared for future learning and living:

Figure One

Mission and Outcomes of Era 3 Schooling

Mission: All students should develop a foundation of knowledge, skills, habits of mind, attitudes and behaviors that prepare them for Lifelong Learning, Intelligent Citizenship, and Self-Understanding.

Lifelong Learning

- ***Develop a framework of essential ideas and knowledge that encompasses ALL subject areas, (including the arts, languages, etc.)***
- ***Develop lifelong learning skills, attitudes and behaviors***
 - ***Inquiry and Investigation Skills***
 - *Ask meaningful questions, pose complex problems*
 - *Search for and Process information*
 - *Think Deeply and Flexibly*
 - *Draw conclusions*
 - *Communicate effectively*
 - ***Positive Attitudes, Behaviors***
 - *Curiosity*
 - *Persistence*
 - *Manage impulsivity*
 - *Strive for excellence*
 - *Connect prior knowledge to new situations*
 - *Think and communicate with accuracy and precision*
 - *Work and learn independently and interdependently*
 - *Remain open to continuous learning*
 - *Take responsible risks*

Intelligent Citizenship

- ***Understand the American political system and its value; develop a global perspective***
- ***Research, analyze, discuss and resolve local, national, and international issues and dilemmas***
- ***Practice active citizenship, and develop collaborative and leadership skills through service learning***
- ***Participate in extracurricular activities that encourage civic engagement***

Self Understanding

- ***Understand and develop strengths and interests***
- ***Develop plans and goals for the future***
- ***Develop personal plans related to self-understanding and development, such as a wellness and fitness plan***

“Critical Knowledge” Exams

Although today’s world is filled with increasing amounts of and increasing access to knowledge, it is still important that our students leave high school with some basic, core knowledge and understandings. “The research literature supports one compelling fact: what students *already* know about the content is one of the strongest indicators of how well they will learn new information relative to the content”.³ If we want to prepare students for success in college and in life, we need to be sure that they have critical background knowledge they will need to succeed in college and to be good citizens. Yet too often our National tests illustrate how little many students actually know and understand when they graduate⁴.

To assure that students have the critical background knowledge and understandings they will need for future learning, I propose that we abandon the current high school standardized testing process in favor of a set of subject based exams taken during their high school years. The subjects most likely to be included are social studies, science, literature, mathematics, the arts, and health. These exams would be designed to assess whether students have an understanding of key, core ideas within each subject, along with key background knowledge, and, as they prepared for these exams, would also help students to review, synthesize, and broaden their learning before they graduate.

The idea behind these exams is to assure that, by the time they graduate, all students have a fundamental grasp of a subject (or interdisciplinary subjects) that includes key ideas, theories, principles, facts, events, concepts, and narratives. The exams would consist of several types of questions – factual and inference based multiple choice questions, short readings and data-based inference questions, short essays, and long essays designed to demonstrate not only a core understanding of a subject but also writing and thinking skills. *A key goal of the exams is not to present a set of “trick” questions that catch students and sort them into those who are successful and those who are not, but to assure that all students develop a core knowledge base, and to prepare all students to pass these exams.*

The entire knowledge base of these exams, built around a set of core understandings and key information, should be clearly spelled out for students and teachers. A core exam syllabus, available for each exam area, will help students review, synthesize and organize information and ideas learned over a period of time. For example, in the social sciences, the tests would be based on a specific, interwoven syllabus of information and understandings– key eras and “big ideas” across historical eras, well-known people and events for each era, the basics of economics and changes over time, the development of and modifications to the Constitution, the evolution of the American system of government, and the like. The exam would focus on a subset of the syllabus, but in order to be successful on the exam, students, with the aid of their teachers, would have to review and organize their learning developed over many years. The exams would also be untimed (speed should not enter into whether students can be successful on the tests).

This set of critical knowledge exams might be developed by an independent and non-partisan group that has experience in this area, such as the College Board. Schools and districts might also opt to develop their own exams, certified by an Independent Board.

One option would be to make these exams compulsory and replace standardized tests, through the No Child Left Behind law. Another option, one that I like better, is to enable schools to voluntarily opt to incorporate them as a replacement for standardized exams, and, in return be “certified” or “accredited” (assuming that they also include the tasks listed below). This would allow schools and districts to choose another approach for students to use to demonstrate outcomes if they wished to do so.

Skills Assessment Through Performance Tasks

In addition to the comprehensive exams outlined above, students would be asked to complete a set of performance assessments that, over time,

help students develop Era 3 skills and also determine whether students can apply and transfer key lifelong learning skills to new and novel situations⁵. Performance assessments might be offered as tasks separate tasks, but more likely would be integrated into courses, subjects, and programs, and be part of the K-12 assessment process.

The following are examples of performance assessments that would assess specific outcomes and might be integrated into the curriculum at all levels and also become part of a graduation portfolio:

Can students develop essential questions, search for and process information? In a search engine world, finding, sorting, evaluating, and synthesizing information becomes critical. To insure that every student can use these skills effectively, students would be asked to develop research projects around topics of interest or curriculum topics. Younger children would complete mini-research projects in which they formulated questions or problems, found and processed information, produced a product based on their work, discussed the results, made presentations, and so on. Students in upper grades might complete a more detailed project that included the following:

After selecting a topic and question for exploration, or a sub-question based on a topic under study, they would be required to find a number of reliable informational sources and/or contact experts for further insights and information. An outline created from these resources should include an analysis of information and should also demonstrate an understanding of key ideas. Students would also be required to write a coherent paper on their research, develop analyses and interpretations, and draw conclusions. They would also create a short multi-media presentation that will be presented to a panel of teachers, community representatives, and/or experts in the field.

Can students read for understanding and write interpretively? Current state tests usually provide students with short reading passages out of context and ask students a series of questions that either require a response among a number of pre-selected responses (multiple choice) or short written responses. In reality, students need to be encouraged to read (or have read to them) a wide variety of literature and texts and then discuss, interpret and critique what they have read. A measure of student progress, one part of

this type of assessment task, is to ask students to develop a portfolio of self-reflections on the literature they have read over time -- a set of summaries and comments that include both required readings and readings chosen by the student. Another component of this assessment are longer interpretive essays that illustrate the ability to write a coherent analysis of a piece of literature.

Can students analyze or conduct a scientific investigation?

In order to graduate, students need to demonstrate that they have an understanding of scientific investigation and the rules of science. As part of the science curriculum, students should continually be asked to actively investigate a scientific question, develop hypotheses, observe and study results, analyze data, and make presentations on the results. Two specific graduation options for demonstrating scientific understanding on the part of students are the following:

- Students read a scientific experiment (or series of experiments) from which they have to draw conclusions as to its (their) accuracy and biases, replicability, and significance;
- or
- Students develop an original scientific experiment and present it to a panel of experts in science.

Can students analyze a public issue and write a cogent argument in favor of a point of view? The study of public issues and current events should be a priority at all grade levels. Discussions and reflections about current local, state, national and world issues should be a regular part of the curriculum. Specific performance tasks, such as simulations of Congressional debates, should be ongoing.

The ability to analyze and understand public issues should also be a graduation requirement. The following citizenship assessment is designed to measure how well students can connect historical and scientific information with current events and issues. This assessment also measures the ability to write a coherent persuasive essay:

- Students research a current issue or problem and its historical context, and then write a position paper that argues for a way to improve the situation or deal with the problem. They must also incorporate historical facts and understandings to illustrate a deeper understanding of the problem or issue. Examples include current civil rights issues, environmental issues, poverty, global warming, medical research, health care, and so on.

An additional component of this task is to ask students to find organizations and agencies that deal with the problem today, to interview people associated with these organizations, and to volunteer with one or more of the organizations associated with the chosen problem and reflect on the volunteer work.

Can students apply mathematical principles to real world problems? Mathematics is often an area where students see little direct application or connection to other subjects. Performance tasks that help students make these connections should be ongoing and evident throughout the curriculum.

One example of a way to assess whether students understand the applicability of mathematics in the real world and to see connections of math to other subjects is to have them create a design – for a building, a city, a playground, and so on. A sample task is the following:⁶

- Students research and design a dream house, including floor plans, a description of the interior of the houses, materials to be used to build the house. Students also create a model of their homes and a cost analysis for the interior of at least one room in the house. Students also are required to make a presentation summarizing the results of their work.

This task might be completed collaboratively.

Can students apply his or her knowledge of the arts? The arts should be a critical part of the curriculum: unfortunately, with greater frequency, they are being cut back from the curriculum and time spent on learning the arts reduced or even eliminated. In addition, students

are rarely asked to demonstrate their understanding of and familiarity with the arts as a graduation requirement.

It is important for students to learn about the arts and to demonstrate their knowledge and understanding of one or more of these areas through the following options:

- Participate in a musical, dance, or theater performance;
- Write a piece of original music or a play;
- Create an original artwork;
- Describe a piece of artwork (or music), place it in an historical context, and interpret its meaning.

Can students develop a plan for healthy living? Schools have usually provided students with a myriad of information about health and disease, and used physical education classes to help students learn to play sports and games, and do exercises. Although it is becoming more common, students are rarely asked to answer such questions as: How do I maintain my own health and physical well-being? What is a nutritionally appropriate diet? How do I maintain a vigorous lifestyle and physical fitness? The appropriate task for this is to combine health and physical information into a plan for healthful living:

- Design a plan for healthful living and physical fitness. Create a plan for a living style that will provide you with health and physical well-being. Include a model healthful menu tailored to your needs and tastes for a week and discuss why it is healthful. Develop a realistic weekly exercise plan that you think you can follow. Include other aspects of healthful living, such as disease prevention.

Can students demonstrate significant service to others and participate in community organizations? While some schools have a service-learning component, we believe that every school should have this requirement. Service learning helps students learn to care and empathize with others, build persistence and problem solving skills, reflect on who they are and their life's goals, and learn civic-mindedness

and citizenship skills. An example of a performance task built around service learning might look something like the following:

- Volunteer your time to a community organization or agency that provides a service to others or is involved in the political process and is of interest to you. Interview members of this organization or agency to learn more about it and what it does. Where possible, provide leadership in some capacity to the organization. Keep a log of hours spent and a journal that provides reflections and summaries of your thoughts about your experience.

Self-Reflection and Understanding Tasks

Self-reflection and understanding tasks throughout their K-12 years provide students with the opportunity to share their perceptions of what they have learned, discuss their self-development and growth as learners and individuals, and develop and share their plans for the future. They should be a regular, on-going part of a curriculum that promotes self-development and understanding through both the regular curriculum and a strong extra-curricular enrichment program with multiple options.

Examples of self-reflection graduation tasks are the following:

What I Learned In School: This task enables students to share their perceptions of the most important academic learnings from their school experience:

- What were your most important academic learnings from school? What understandings, skills, attitudes and values have changed you and made a difference in your life? Why have these made a difference?
- What significant learning experiences during your school years stand out for you? What were they? Why do you think that they stand out and are so significant?

My Experiences in School: Students are provided with opportunities to reflect on their school learning experiences and share

the high and low points and their growth as individuals, such as through the following task:

- Reflect on your recent high school experiences. What were the high points? The low points? How do you see yourself changing from when you were a ninth grader to now?
- What recommendations would you make so as to improve the high school experience in the future?

Individual Talents-Interests-Plans: This task asks students to explore their own interests, talents and plans for the future, such as the following:

- Write an autobiography that outlines your current strengths and talents and your current school interests, both inside and outside the classroom. Based on your strengths, talents and interests, develop some tentative education/career plans for the future and how you might go about fulfilling those plans.

Portfolios and Presentations

Collections of critical exams, performance assessments, and self-reflections, along with other pertinent student work, become the components of portfolios of student work at every level. The development of cumulative portfolios of assessments at every level is ongoing. A high school portfolio is the basis for a final presentation to a panel of educators and/or community representatives. The following are some examples of questions that might be asked during a graduation presentation:

- What did you learn about yourself through the process of completing these demonstrations, assessments, and self-reflections?
- What are your strongest academic skills? What subject(s) are you most interested in? What have been your most important academic learnings and why?

- What do you now see as your greatest strengths? Your interests? Your talents? How have these been developed during your education? How can you build on these for the future?
- What are your next steps? What are your plans for the future? Why?

Revising the Curriculum

These three types of assessments should help a school or district develop a more coherent curriculum as well as engaging, interactive instruction.⁷ For example, at the high school level, students might take a series of “capstone” courses that synthesize learning in one or more subject areas and provide opportunities to assess learning over time. In social studies, students might take a “capstone” course in their junior or senior year that would enable them to work in groups and “self-study” for a critical knowledge social studies exam. The teacher’s role would be to fill in the gaps, coach students, focus on world and national problems that would help students to see connections, and also incorporate the citizenship and persuasive writing cornerstone task described above. This approach would also help students to become more “self-directed” learners and be better prepared for a college experience. Science, mathematics, and other subject areas might also develop capstone courses that incorporate comprehensive exams and graduation assessments. Students might also take a health and nutrition course and one or more general courses in the arts some time in their high school years that would include culminating critical exams, performance assessments, and self-reflections. A series of elective courses would round out the high school curriculum.⁸

As a result of these curriculum changes, most students would take critical knowledge exams and complete culminating performance assessments in courses taken in their junior or senior years. However, students who felt prepared for one or more of the exams and tasks could also take them earlier.

The implementation of a set of critical knowledge graduation exams, culminating performance assessments, and self-reflection activities might also dramatically improve the entire K-12 curriculum and create a built-in formative assessment model. “Backwards planning” could be

used to help figure out where in the school curriculum specific information, ideas, skills, and habits of mind will be initiated and refined, and how students will be prepared for the exams and tasks in their courses and programs over time. Courses could be aligned with comprehensive exam syllabi and cornerstone tasks. Student self-reflection activities could be on-going throughout a K-12 program. Self-reflective writing that provided data on student perceptions of learning, growth, and recommendations for school changes might also help redesign school programs.

Streamlined courses, developed from critical knowledge exam syllabi and culminating performance tasks, would be able to emphasize deeper learning, thought provoking activities, and opportunities for “real life” experiences outside the classroom. Performance tasks at earlier grade levels would help prepare students for the culminating assessments and could be embedded throughout the curriculum. For example, if students are expected to develop an original scientific experiment for graduation, they could be prepared for this as they work their way through the K-12 curriculum. Science projects developed in the elementary and middle schools might help students understand the nature of scientific investigation, conduct scientific experiments, and practice developing creative and original scientific experiments.

Conclusion

This article is designed to be a catalyst for discussing some key questions -- What should students be held accountable for when they graduate high school and/or receive a diploma in a 21st century world? What data should be collected to determine if our students have learned critical knowledge and can apply the skills necessary for successful living in today's and tomorrow's world? How should these data be collected and analyzed? What data should count for graduation? I believe that we urgently need to explore and develop a collection of varied, multiple types of assessments that together measure whether our students have achieved major learning goals and developed their individual talents, strengths and interests. These assessments also help

to define powerful curriculum designs, instructional approaches and formative assessments. They should also help to reduce the curriculum clutter, eliminate courses that fragment learning, and help schools focus on a core program that will make a difference in student lives.

The critical knowledge exams, performance assessments, self-reflection tasks, portfolios and presentation examples, and curriculum revisions included above are not meant to be a final list, but a set of suggestions for consideration. My hope is that this assessment approach, or something similar, will replace the current standards and standardized testing approach that hinders the development of a 21st century educational program. This assessment and accountability approach can help to promote academic achievement goals that foster career, college, citizenship, and life readiness, as well as individual growth and development. They can help students make the key transition to the 21st century world that awaits them.

EndNotes

¹ What is an Era 3 world? What are its characteristics? For a more detailed description of the three Eras of world history, see Glen Robinson (February, 1986). *Learning*

Expectancy: A Force Changing Education, in *Concerns in Education*, Educational Research Services (ERS).

² For further insights into the three outcomes, see Seif, Elliott. *Educational Outcomes for an Era 3 World*. This article can be downloaded at www.era3learning.org, then go to the about era 3 learning page.

³ See Robert Marzano (2004). *Building Background Knowledge for Academic Achievement*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD). Quote taken from page 1.

⁴ For example, see Sam Dillon, *US Students Remain Poor at History, Tests Show*, in the New York Times, June 14, 2011.

⁵ For a further description and definition of cornerstone assessments, with examples, see Grant Wiggins and Jay McTighe (2007). *Schooling by Design*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).

⁶ This high school cornerstone project example is adapted from a sixth grade class project outlined more fully in ENC Focus, Volume 9, November 2, 2002. Washington, D.C.: Eisenhower National Clearinghouse, pp. 16-18.

⁷ The development of a more coherent curriculum and engaging, interactive instruction are two of the principles deemed necessary for an Era 3 education. For further information about these principles, See Seif, Elliott. *Educational Excellence in an Era 3 World*, at www.era3learning.org/ about era 3 learning.

⁸ The emphasis in the high school curriculum would be threefold – a continued set of required courses, such as algebra, US History, and the like; “synthesis” and overview courses to prepare for comprehensive exams and complete performance tasks; and elective courses that would enable students to choose areas of interest. Note that this approach would minimize or reduce the emphasis on AP courses that, in my mind, are designed to prepare students for college but reduce the amount of time available in high school to prepare students for their future in a coherent way.