High School Graduates on the Path to Middle Skills Jobs

The National Assessment Governing Board has begun implementation of its Strategic Vision, which includes a priority to "develop new approaches to measure the complex skills required for transition to postsecondary education and career". The National Assessment of Educational Progress (NAEP) 12th grade reading and math results estimate the academic preparedness of students for college without remediation. While the transition from high school to college is important, the college academic preparedness measure does not capture the full range of pathways for high school seniors.

"Middle-skills" jobs require more education and training than a high school diploma, but less than a four-year college degree. Middle skills jobs represent a large portion of the labor market in the United States, yet NAEP does not currently measure or report the readiness of 12th graders for this pathway. Though the Governing Board has conducted job training preparedness research, the research to date was inconclusive.

Board member Linda Rosen will moderate the panel discussion featuring business representatives from the manufacturing, construction and health data management industries to discuss the skills and knowledge employers seek for middle skills jobs.

The following pages include the panelists' bios, a summary of the lessons learned from the Governing Board's job training research, and a primer prepared by the National Network of Business and Industry Associations regarding the "Common Employability Skills" that employers consider necessary in all major economic sectors.

Panelists:

Greg Chambers
Director of Corporate Compliance
Oberg Industries

Mr. Gregory Chambers is responsible for overseeing the apprenticeship, export control, environmental, health and safety programs at Oberg Industries. He currently serves on the Pennsylvania Apprenticeship and Training Council, US Department of Labor Advisory Committee on Apprenticeship, and US Department of Commerce District Export Council of Western PA. He is Board Chairman of the National Institute of Metalworking Skills and Past President of the American Apprenticeship Round Table. He served on the Board of Control for the Clairton (PA) school district and the advisory boards of Indiana University of Pennsylvania and Penn State University-New Kensington. He has been employed in the Advanced Manufacturing sector for over 35 years and was previously employed at Alcoa, DuPont, and General Foods early in his career. Mr. Chambers is a Journeyman Precision Toolmaker and a graduate of Carnegie-Mellon University with a degree in Chemical Engineering.

Tim Johnson
Senior Director of Governmental Relations
National Center for Construction Education and Research (NCCER)

The founder and president of the TJC Group, Tim Johnson is the leading national consultant for the creation, management, facilitation, and revitalization of industry based Community Advisory Panels (CAPs), having created more than 30 panels in seven states and facilitated over 1,500 individual CAP meetings. The TJC Group assists industrial plants and their management to listen more effectively to and communicate with the communities in which they operate. At NCCER he serves in a consulting role to promote construction craft training and careers in the construction industry nationally. He serves in a consulting role as the Executive Director of the Louisiana Construction Education Foundation and Executive Director of the National Maritime Education Council. Mr. Johnson hosts the *Louisiana Business and Industry Show*, a weekly television program that reaches an audience of 660,000 homes and a radio show of the same name in Baton Rouge. His background includes six years as a lead committee staffer for the Louisiana State Senate and five years as the Director of Business Development for the Construction and Maintenance Division of the Shaw Group (now CB&I). Mr. Johnson served almost seven years as the Director of Training and then as the Executive Director for the Associated Builders and Contractors Pelican Chapter, leading one of the largest privately funded construction craft training centers in the United States with an enrollment of over 1,600 students per semester.

William J. Rudman, PhD, RHIA
Executive Director of the AHIMA Foundation &
Vice President of Education Visioning for the American Health Information Management Association (AHIMA)

Dr. Rudman worked for over 20 years in academia as a professor in health information management. Rudman also chaired a MD/PhD program and served as the director of the Health Information Technology (HIT) core for the Delta Regional Institute overseeing the implementation of an electronic record exchange in rural Mississippi. He served on the state of Mississippi task force for health information exchange and chaired the education committee. Dr. Rudman was the Principal Investigator (PI) on the Health Information Security and Privacy Collaboration grant for education and training for the implementation on electronic medical records for the state of Tennessee. In addition to hands on experience in the development, implementation, and training of those working in the field of health information management, Dr. Rudman has an extensive list of presentations, publications, and health information technology grants. Rudman has published over 85 scholarly articles, made 150 scholarly presentations, and received over $80 million in federal funded grants. Among those grants, Dr. Rudman served as either a PI or co-PI on funding for the Southern Mississippi health information exchange (at the time it was the largest operating Health Information Exchange in the US), a rural e-network of Mississippi hospitals, a telemedicine grant to connect hospitals in the Delta Region in Mississippi, and the National Apprenticeship Program for health information management.

Lessons Learned: Academic Preparedness for Job Training

Responding to 2004 blue ribbon recommendations for 12th grade NAEP assessments, the Governing Board commissioned more than 30 research studies to find out if the grade 12 NAEP could serve as an indicator of students' academic preparedness for college and job training. In 2015, the Governing Board released a report summarizing detailed lessons learned from the research for job training. The research results support the claim that 12th grade NAEP assessments of reading and mathematics are indicators of academic preparedness for college. The Governing Board reported the NAEP grade 12 reading and math results with the academic preparedness metric with the 2013 and 2015 results. However, the job training research findings were inconclusive, largely because of the huge variability in the knowledge and skills required by different training programs. Key aspects of the job training research design and lessons learned are listed below.

Key Decisions to Address Academic Preparedness for the Workplace:

- Separate research strands were pursued for academic preparedness for college and the workplace, to determine if these outcomes addressed the same NAEP content.
- The Board's working definition of academic preparedness for the workplace focused on qualifying to enter a job training program, rather than attempting to measure other characteristics needed to be hired for a job or for success beyond academic knowledge and skills.
- This working definition also included demonstrating the reading and mathematics knowledge and skills needed to qualify for a job training program without remediation in either subject.
- The research strategy involved multiple research methods to determine the reading and mathematics knowledge and skills needed to pursue careers for five exemplar occupations:
    - Automotive Master Technician;
    - Computer Support Specialist;
    - Heating, Ventilation and Air Conditioning (HVAC) Technician;
    - Licensed Practical Nurse (LPNs); and
    - Pharmacy Technician.
- The five exemplar occupations were positions also present in the military and represented a range of sectors and training pathways that do not require a 4-year degree, including apprenticeship, community college, vocational institute, and on-the-job.
- The research studies identified content relationships between NAEP assessments and content statements available from relevant assessments (e.g., ACT WorkKeys assessments) and training resources (e.g., Department of Labor's occupational information network – O*NET). Judgmental standard setting research also gathered input directly from field experts for each of the five occupations to identify the NAEP content required to be qualified for their programs.

Lessons Learned from the Research:

- Overall, the results do not support using 12th grade NAEP reading and math for academic preparedness statements for job training. No scale linkages to relevant assessments were feasible.
- Content in grade 12 NAEP is much broader than the content emphasized by job training. The content emphasized by the job training exemplars research is more closely aligned with 8th grade NAEP – still, a third of the NAEP 8th grade objectives were deemed not relevant.
- There is still disagreement from experts in the field about which content matters for measuring preparedness – both within and across occupational areas.
- Other research methodologies could have been fruitful, but were deemed infeasible at the time.

COMMON EMPLOYABILITY SKILLS

A Foundation for Success in the Workplace:

The Skills All Employees Need, No Matter Where They Work

PERSONAL SKILLS
PEOPLE SKILLS
APPLIED KNOWLEDGE
WORKPLACE SKILLS

A Cross-Industry Approach to Foundational Skills

COMMON EMPLOYABILITY SKILLS

Today, employers in every industry sector emphasize the need for employees with certain foundational skills. These include, a strong academic grounding in reading and math, as well as individual abilities such as teamwork, problem solving, work ethic and integrity. While employers rely on employees to have the same basic skills, they do not always talk about or label them the same way. This makes it difficult for prospective employees and educators to know exactly what it takes to be ready to succeed in *any* career path in *any* industry.

The National Network has brought together the organizations that represent employers from major economic sectors, and they have worked to identify the core set of fundamental skills that potential employees need in the workplace – and a common vocabulary to explain them.

This model can take its place as the foundation for all industries to map skill requirements to credentials and to career paths. In doing so, this model allows employees to understand the skills that all industries believe prepare individuals to succeed.[1] Educators and other learning providers will also have an industry-defined roadmap for what foundational skills to teach, providing individuals the added benefit of being able to evaluate educational programs to ensure they will in fact learn skills that employers value.

Employability skills can be acquired in a variety of ways, including military service, work experiences and community service, as well as traditional education.

PERSONAL SKILLS

INTEGRITY: *Treating others with honesty, fairness and respect*

- Demonstrate respect for company's time and property
- Accept responsibility for one's decisions and actions

INITIATIVE: *Demonstrating a willingness to work and seek out new work challenges*

- Take initiative in seeking out new responsibilities and work challenges, increasing the variety and scope of one's job
- Pursue work with energy, drive and effort to accomplish tasks
- Establish and maintain personally challenging, but realistic work goals
- Strive to exceed standards and expectations

DEPENDABILITY & RELIABILITY: *Displaying responsible behaviors at work*

- Behave consistently, predictably and reliably
- Fulfill obligations, complete assignments and meet deadlines
- Follow written and verbal directions
- Comply with organization's rules, policies and procedures
- Demonstrate regular and punctual attendance

ADAPTABILITY: *Displaying the capability to adapt to new, different or changing requirements*

- Be open to learning and considering new ways of doing things
- Actively seek out and carefully consider the merits of new approaches to work
- Embrace new approaches when appropriate and discard approaches that are no longer working
- Effectively change plans, goals, actions or priorities to deal with changing situations

PROFESSIONALISM: *Maintaining a professional demeanor at work*

- Demonstrate self-control by maintaining composure and keeping emotions in check even in difficult situations
- Maintain professional appearance by dressing appropriately for the job and maintaining personal hygiene
- Use professional language when speaking with supervisors, co-workers and customers
- Maintain a positive attitude
- Take ownership of one's work

PEOPLE SKILLS

TEAMWORK: *Demonstrating the ability to work effectively with others*

- Establish a high degree of trust and credibility with others
- Interact professionally and respectfully with supervisors and co-workers
- Develop constructive working relationships and maintain them over time
- Use appropriate strategies and solutions for dealing with conflicts and differences to maintain a smooth workflow

COMMUNICATION: *Maintaining open lines of communication with others*

- Demonstrate sensitivity and empathy
- Listen to and consider others' viewpoints
- Recognize and interpret the verbal and nonverbal behavior of others
- Speak clearly, in precise language and in a logical, organized and coherent manner

RESPECT: *Working effectively with those who have diverse backgrounds*

- Demonstrate sensitivity and respect for the opinions, perspectives, customs and individual differences of others
- Be flexible and open-minded when dealing with a wide range of people
- Value diversity of approaches and ideas

[1] The competencies come from the existing Industry Competency Models, which were created and vetted by each of the industries

APPLIED KNOWLEDGE

READING: *Understanding written sentences and paragraphs in work-related documents*

- Read and comprehend work-related instructions and policies, memos, bulletins, notices, letters, policy manuals and governmental regulations
- Read and comprehend documents ranging from simple and straightforward, to more complex and detailed
- Attain meaning and comprehend core ideas from written materials
- Integrate what is learned from written materials with prior knowledge
- Apply what is learned from written material to work situations

WRITING: *Using standard English to clearly communicate thoughts, ideas and information in written form*

- Prepare written materials that are easy to understand using correct wording
- Communicate thoughts, ideas, information, messages and other written information in a logical, organized and coherent manner
- Use correct grammar, spelling, punctuation and capitalization
- Write in a factual manner in a tone appropriate for the target audience in multiple formats

MATHEMATICS: *Using mathematics to solve problems*

- Add, subtract, multiply and divide whole numbers, fractions, decimals and percents
- Convert decimals to fractions; convert fractions to percents
- Calculate averages, ratios, proportions and rates
- Take measurement of time, temperature, distance, length, width, height and weight; convert one measurement to another
- Translate practical problems into useful mathematical expressions

SCIENCE: *Knowing and applying scientific principles and methods to solve problems*

- Understand basic scientific principles
- Understand the scientific method (i.e., identify problem, collect information, form opinion and draw conclusion)
- Apply basic scientific principles to solve problems and complete tasks

TECHNOLOGY: *Using information technology and related applications to convey and retrieve information*

- Navigation and File Management
  - Understand common computer terminology
  - Use scroll bars, a mouse and dialog boxes to work within the computer's operating system
  - Access and switch between applications and files of interest
  - Adhere to standard conventions for safeguarding privacy and security
- Internet and Email
  - Navigate the Internet to find information
  - Open and configure standard browsers
  - Use searches, hypertext references and transfer protocols (enter URLs)
  - Send and retrieve electronic mail (email)

CRITICAL THINKING: *Using logical thought processes to analyze and draw conclusions*

- Identify inconsistent or missing information
- Critically review, analyze, synthesize, compare and interpret information
- Draw conclusions from relevant and/or missing information
- Test possible hypotheses to ensure the problem is correctly diagnosed and the best solution is found

WORKPLACE SKILLS

PLANNING & ORGANIZING: *Planning and prioritizing work to manage time effectively and accomplish assigned tasks*

- Able to plan and schedule tasks so that work is completed on time
- Ability to prioritize various competing tasks
- Demonstrate the effective allocation of time and resources efficiently
- Will take necessary corrective action when projects go off track

PROBLEM SOLVING: *Demonstrating the ability to apply critical thinking skills to solve problems by generating, evaluating, and implementing solutions*

- Able to identify and define the problem
- Will communicate the problem to appropriate personnel
- Capable of generating possible solutions
- Ability to choose and implement a solution

DECISION MAKING: *Applying critical thinking skills to solve problems encountered in the workplace*

- Identify and prioritize the key issues involved to facilitate the decision making process
- Anticipate the consequences of decisions
- Involve people appropriately in decisions that may impact them
- Quickly respond with a back-up plan if a decision goes amiss

BUSINESS FUNDAMENTALS: *Having fundamental knowledge of the organization and the industry*

- Understand the importance of one's role in the functioning of the company and the potential impact one's performance can have on the success of the organization
- Recognize the importance of maintaining privacy and confidentiality of company information, as well as that of customers and co-workers, and comply with intellectual property laws
- Understand the significance of maintaining a healthful and safe environment and report any violations/discrepancies to appropriate personnel

CUSTOMER FOCUS: *Actively look for ways to identify market demands and meet customer or client needs*

- Understand and anticipate customer needs
- Provide personalized service with prompt and efficient responses to meet the requirements, requests and concern of customers or clients
- Be pleasant, courteous and professional when dealing with internal and external customers or clients
- Evaluate customer or client satisfaction

WORKING WITH TOOLS & TECHNOLOGY: *Selecting, using and maintaining tools and technology to facilitate work activity*

- Identify, select and use appropriate tools and technological solutions to frequently encountered problems
- Carefully consider which tools or technological solutions are appropriate for a given job, and consistently choose the best tool or technological solution for the problem at hand
- Operate tools and equipment in accordance with established operating procedures and safety standards
- Seek out opportunities to improve knowledge of tools and technologies that may assist in streamlining work and improving productivity

These employability skills are interconnected to allow employers to look at the full scope of what skills are necessary in all major economic sectors. Together, attainment of these business-defined skills prepares individuals for careers and for further education and training.

ABOUT THE NETWORK:

The National Network represents major business sectors and is funded through a collaborative partnership of Business Roundtable (BRT), ACT Foundation, the Bill and Melinda Gates Foundation, Joyce Foundation and Lumina Foundation. Members include leaders in the manufacturing, retail, healthcare, energy, construction, hospitality, transportation and information technology sectors. They represent the source of nearly 75 percent of projected U.S. job growth through 2020 (an estimated 30 million new jobs). More information on the National Network can be found at businessroundtable.org/closingtheskillsgap and actfdn.org.