RESOLVING OHIO’S TESTING CONUNDRUM
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**The Stark Education Partnership, Inc.** – a 501(c)3 non-profit organization in Stark County, Ohio – is a catalyst, engaging and collaborating with education, business, civic and community stakeholders to drive sustainable improvement and innovation to provide all students with education and career success.

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Executive Summary

“The truth is that we can no longer afford to focus on graduating learners armed only with predetermined skills and (already existing) knowledge. The workforce is becoming far too global, too digital, and increasingly too self-employed. We must instead refocus on cultivating creativity, to include not only problem solving, but also problem finding and problem framing.”

– Building Ohio’s Future Workforce, Governor's Office of Workforce Transformation (December 2016)

This white paper of the Stark Education Partnership calls for the State Board of Education and the General Assembly to incorporate new workforce thinking into the accountability plan. While we fully support the need for high standards and accountability in Ohio’s schools, we believe Ohio needs to end its nearly exclusive dependence on standardized tests for graduation and school assessment. Instead, we recommend the state establish a hybrid system of graduation requirements and school assessments with restored authority to local communities.

The Every Student Succeeds Act (ESSA) federal guidelines require states to submit an accountability plan in April or September 2017. The requirement presents Ohio with an unparalleled opportunity to examine its current system of standards, instruction and accountability in light of the massive paradigm shift being brought on by developments in technology, artificial intelligence and learning machines – a shift that is already being felt in Ohio. We believe that such a dramatic shift calls for a substantial redefinition of what students need to know and be able to do to succeed in college and career, and subsequently, how we teach and how we assess both knowledge and skills. Little evidence exists that it is being done in the draft state plan.

Therein lies the conundrum.

Given this pace of change and workforce transformation, we believe we must respond swiftly by shifting from an accountability system where 31 out of 32 measures of school and district achievement are predicated on static standardized test scores to a more dynamic and robust system that measures learning competencies students will need to succeed in their future.

The following is suggested:

- Reduce the testing footprint by eliminating the seven additional tests no longer required by ESSA;
- Use the time and resources gained from the testing reduction to develop new pedagogies focused on Deep Learning competencies that link learning to real life;
- Move away from growth models and apply workforce thinking, as described in Clayton Christensen’s Jobs to be Done framework, to instruction and assessment;
- Create a universal freshman academy using adaptive technology to prepare all students for college or careers;
- Authorize local school boards and faculties to use course grades by teachers to award students points towards Ohio’s Graduation Requirements;
• Restore the process to use the ACT/SAT and WorkKeys Industry Credentials as substitute measures for end of course tests (EOCTs) towards graduation requirements;

• Expand the use of College Credit Plus (CCP), Advanced Placement (AP) and International Baccalaureate (IB) scores as substitutes for EOCTs or to gain points towards graduation.

• Institute a process to develop relevant local report cards with local districts and their communities;

• Create a joint K-12-higher education-business innovation committee to generate new avenues for student success using a Jobs to be Done approach, rather than static instruction with a retrospective growth model.
A Conundrum

The Ohio State Board of Education (SBOE) and, subsequently, the General Assembly is facing a conundrum. Given new flexibility in the Every Student Succeeds Act (ESSA) signed into law by President Obama on December 10, 2015, the state can substantially reduce its expensive and time consuming testing footprint. At the same time, the state is putting into place a new system of graduation requirements that is almost exclusively based upon a student’s standardized test performance on new, more rigorous end of course tests (EOCTs).

These tests have many fearing that fully a third of Ohio’s juniors may not be on track to graduate. ¹ Yet others feel that the state will back off these requirements.² Meanwhile, amidst these concerns the SBOE voted in December to create a graduation requirements task force to make recommendations by April.

Few would argue, however, with the need to have high standards and accountability. This paper contends that the issue for Ohio is not these things, per se. The issue is whether and how instruction and assessments align with what students really need to know to succeed in college and career. Therein lies the conundrum.

The Paradigm Is Shifting

However, we also heard many comments about the need to continue to focus on reducing the number of tests. For this reason, we are committed to an ongoing, inclusive process to identify specifically where Ohio can streamline its assessments and make meaningful modifications. Changes to required assessments would require legislative changes. – State Superintendent Paolo DeMaria³

The ominous headline in Yahoo Finance read Warren Buffett just dropped Walmart and signaled the death of retail as we know it.⁴ The occasion was the sell-off by Berkshire Hathaway of nearly one billion dollars of Walmart stock, a stock that had dropped 21% since 2014 while competitor Amazon had risen 119%.

Walmart, of course, will not close its doors tomorrow. Still the world’s largest corporation - at 46,600 persons Ohio’s second largest employer⁵ – has recently announced $6.8 billion in capital investments and new services, like online grocery pickup. All this aside, one certainty emerges. Rapid changes in consumer preferences are fueled by correspondingly rapid changes in society and technology. Amidst this, corporations must fight off what Warren Buffet calls “…the ABCs of business decay, which are arrogance, bureaucracy and complacency. When these corporate cancers metastasize,” he notes, “even the strongest of companies can falter.”⁶

Those cancers, however, can affect any size business (consider travel agents) and we are entering an era where whole sectors can become transformed overnight and job losses can run, not in the thousands, but in the millions. That’s the estimate of the impact that self-driving trucks can have on the transportation
industry where an estimated 3.5 million truckers could be impacted.\textsuperscript{7} Ohio alone employs 71,700 “heavy and tractor trailer” truck drivers, the fifth largest of any state.\textsuperscript{8}

Even more ominous is the potential impact of artificial intelligence (AI) that is beginning to dramatically transform computer technology as machines learn from machines. These developments remain largely unrecognized by most Americans, but not unfelt. Those who interact with voice recognition software on their computers or have sought answers from Amazon’s “Alexa” have already ridden the first wave of what some say will comprise the next major social and economic revolution.

Consider the oil industry that, with fracking, held such great promise for Ohio just a few years ago. Texas is a prime example. This state alone accounted for 93,000 of the 163,000 jobs lost nationally since 2014. A top Western Texas oil producer explains:\textsuperscript{9}

We want to transform our work force to the point where we need to hire fewer people,” said Joey Hall, Pioneer’s executive vice president for Permian operations\textsuperscript{10}. Improved computing streamlines operations, he noted, and lets technicians optimally space their wells and more accurately perforate the sweet spots of shale veins to squeeze every drop of oil out of the ground.

We’re heading toward artificial intelligence and machine learning, analyzing thousands of algorithms,” Mr. Hall added, sounding more like a Silicon Valley futurologist than a wildcatter. Through repetitive operations, you learn the patterns, and through patterns you learn to make automated decisions.

There was a time, just a few short years ago that this same oil industry held the prospect of being one of the top employers in Ohio. However, it’s not just oil. Consider what McKinsey&Company says in a new report this January:

About half the activities people are paid almost $15 trillion in wages to do in the global economy have the potential to be automated by adapting currently demonstrated technology, according to our analysis of more than 2,000 work activities across 800 occupations. While less than 5 percent of all occupations can be automated entirely using demonstrated technologies, about 60 percent of all occupations have at least 30 percent of constituent activities that could be automated.\textsuperscript{11}

Now, more than ever before in history, there is a call for students to be able to be independent problem solvers who can self-educate and re-tool themselves to function under a variety of circumstances and be employable in multiple careers, most of which have yet to exist. This is prompting what New Pedagogies for Deep Learning (NPDL), a global partnership of over 600 schools across six countries, calls a “…growing need to develop and measure the competencies that enable learners to create new knowledge, make connections, and generate positive changes in their own lives, the lives of others, and the world.”\textsuperscript{12}

Given this pace of change, a belief that we can use graduation tests, or a series of single administration end of course tests (EOCTs) to accurately assess student skills and knowledge is absurd. To further maintain that such tests can also attest to school and teacher quality is equally at fault. As W. James Popham says, “employing standardized achievement tests to ascertain educational quality is like measuring temperature with a tablespoon.”\textsuperscript{13} Further, Popham maintains that we in education have been complacent in allowing such tests to serve as a measure of education quality, through our own lack of understanding about what such tests can, and cannot do. This, in turn, has mislead many politicians, business leaders and much of the public into thinking standardized tests alone can be such measures.
Testing in Ohio: High Stakes from Day One

March 1987 brought more than spring to Ohio, it brought high stakes testing. At its meeting that month the Ohio State Board of Education adopted a resolution recommending that the General Assembly pass legislation to require students to pass proficiency tests in order to graduate from high school. By July, House Bill 231 of the 117th General Assembly was ready to go, requiring students graduating in 1994 or thereafter to pass ninth grade proficiency tests in reading, writing, mathematics, and citizenship.

It may surprise many that there was no federal law or regulation in that era requiring that students pass what became known as high stakes high school exit, or graduation exams to earn a diploma. There still isn’t. Yet now, a full generation later, Ohio, while ending the solo Ohio Graduation Test with the Class of 2017, will continue to require that students earn a minimum number of points by passing a battery of high stakes EOCTs or substitutes, to earn a diploma. In this, Ohio has not been alone. Slightly over half of the states in the union have also required such tests in the past. Some are now switching to EOCTs, or looking at other means of assessment. Others have adopted a moratorium while looking at these options. Some seek to do away with high stakes tests entirely. In fact, the number of states requiring high states exit exams to earn a diploma has shrunk from 26 to 12.

California is an example. With nearly 40 million residents, the most populace state in the union, has “suspend(ed) the administration of the high school exit examination (HSEE) through the 2017-18 school year and the requirement that each student completing grade twelve to successfully pass the HSEE as a condition of receiving a high school diploma.” Indeed, California’s legislature has even gone so far as to requires local educational agencies to grant a diploma to any student who completed grade twelve in the 2003–04 school year, or subsequent school years, who met all applicable graduation requirements other than the passage of the HSEE. Ohio should pay attention to the recommendation of the California Department of Education to its legislature as it portrays a state education agency confident in what it has accomplished.

California has embarked on a path toward preparing all students for college, career, and life in the twenty-first century through a focus on performance, equity, and continuous improvement. This path is supported by this comprehensive assessment system, classroom supports, longitudinal data systems, and local control accountability plans and funding formulas. This is a path where LEAs take on an increased role in designing the K-12 educational structures and supports students need to reach their full potential. Because of the comprehensive resources now available to identify students in academic need, it is no longer necessary for the CAHSEE to continue beyond 2018.

While Ohio will finally end the use of the Ohio Graduation Test, by replacing (2018 and beyond) its single exam with a point system based on a series of EOCTs, it may only be doing something akin to “sleight of hand”:

For each of the seven end-of-course state tests, a student earns one to five graduation points. Students have the potential to earn a total of 35 points. To meet this graduation option, a student must earn a minimum number of 18 points from the seven tests.

What this means is that, substitutes aside, graduation in Ohio will continue to rely on “multiple exit exams” using a point system based on standardized test scores. Further, a system largely designed to assess student mastery and growth on a limited number of items, in what is often a broad content area, will be used to attest to school and teacher quality. This requires further examination.
What Kind of Growth?

Sage policy makers have recognized that instead of trying to micromanage school and district “inputs,” they should clearly state the results they want their educational institutions to produce, assess how satisfactorily those results are being achieved, and then hold schools and school systems to account, with rewards of various sorts for success and interventions of various sorts in the event of institutional failure. This strategy has worked fairly well…Chester E. Finn, Jr.¹⁹

Has it though?

Finn and his colleagues at the Thomas B. Fordham Foundation say that:

“…policy makers who care about their low-income high achievers should take full advantage of their newfound authority under the Every Student Succeeds Act (ESSA) to ensure that their schools have ample incentives to educate those (gifted) children, and all children, to the max.”

Their solution is to use this authority to further expand the growth model, i.e. one that looks at individual student progress at all levels to all sub-groups of students and indeed ESSA allows for that flexibility.

Indeed, growth seems to resonate with those stakeholders giving feedback on Ohio’s ESSA plan.

What we heard. Stakeholders emphasized the need to highlight growth measures because they shine light on student progress regardless of where they start. Stakeholders did raise questions about the interpretation of current measures, particularly during times when the state experienced multiple test transitions.²⁰

Ohio’s response in the draft plan is as follows:

Ohio’s Progress component includes measures of growth for all students, students with disabilities, students identified as gifted and students scoring in the lowest achieving 20 percent of students statewide. Results from the following are used to determine those measures.

- Student growth in English language arts and mathematics for students in grades 4-8;
- Students taking end-of-course examinations; and
- Students taking recently added science and social studies exams.

Ohio will measure growth using value-added progress as the additional academic measure. Progress of student subgroups beyond those already included as part of the state’s Progress component will be reported on school and district report cards, but will not be graded. We will also review the Progress component’s grade scale and consider recommendations to simplify and improve understanding of the component.²¹

All at once, this argument underscores one of several of the major problems in Ohio’s accountability system. The first is that it is largely based on tests and the purposes of those tests are confused. Do we look at proficiency, meaning the number of students who pass tests, growth between tests, or both? Should results be diagnostic or used to reward, or punish schools, districts and students?

Additionally, the broad supposition inherent in most accountability systems that schools need incentives to educate students, regardless of sub-group, is fallacious at best. Beyond this, is the fact that there is more than one way to calculate the kind of growth that Finn is talking about. To use a single test to measure student performance, teacher effectiveness, school performance and district performance is confusing, if not misleading. Further, there is the issue of intent. Ohio’s current tests largely function as
post-mortems. While some have proposed computer-adaptive tests as a way to provide more immediate feedback to teachers and students, EOCTs can hardly be called diagnostic. Yet, it is upon these “post-mortems” that the state is largely pining school and district accountability for student achievement. Note the following from the Draft Overview of Ohio’s ESSA plan:

**Our proposal in response to ESSA.** The Achievement component of Ohio’s School and District Report Cards includes two graded measures: Performance Index and Indicators Met.

- Performance Index measures the achievement of every student, not just whether or not he or she reaches “proficient.” Districts and schools receive points for every student’s level of achievement. The higher the student’s level, the more points the school earns toward its index. This rewards schools and districts that improve the performance of highest- and lowest-performing students.

- The Indicators Met measure represents whether student performance on state tests met established thresholds. Individual indicators are based on a series of up to 31 state tests that measure the percent of students proficient or higher in a grade and subject. Schools and districts also are evaluated on the gifted indicator, giving them up to 32 possible indicators during the 2015-2016 school year.

Ohio’s current growth model, which will be built into this system, limits the number of students that exhibit more, or less, than expected growth. That is why the *Collective Response* white paper calls for a predictive growth model which measures each student’s progress according to his, or her, performance on a previous test. As their white paper notes, “Ohio’s current model does a complicated mathematical conversation and puts a student’s performance on the normal statistical bell curve and compares him/her to other students.”

These limitations are further illustrated in another Fordham Foundation piece in which Aaron Churchill, the foundation’s Ohio Research Director, points out the state’s current model will result in impoverished urban districts having more than their fair share of Ds and Fs on Ohio’s Report Card. Churchill, however, is the first to admit:

> There is no one scientifically correct way to determine school grading weights. It will ultimately come down to judgments on issues of what we prioritize and value, how technically sound an indicator is (all measures have their challenges including, yes, value added), how we think certain measures will affect behavior, and how we think about fairness to schools and to students. Yet we must acknowledge that not all report card measures are of equal or similar importance—which appears to be one of the assumptions behind Ohio’s current weighting approach. Buckeye policy makers should revisit these summative weights and work toward prioritizing student growth in the accountability system.

Churchill is correct. There is no scientifically correct way and schools and students are not statistical models. As one Cleveland teacher, who later went on to become an education dean at Kent State, once related. “What I did was most akin to chaos theory.” That same teacher also related that her most memorable year in the classroom took place when she had some of the same students at the end of the school year that she started with in the fall. It is somewhat ironic that Ohio has proposed using chronic absenteeism and student discipline incidents as measures of student engagement for the additional indicator of “school quality” that ESSA requires. How does a school control for a kid who is constantly absent because he, or she, stays home to take care of siblings because parents are drugged out, or missing?
The real danger of a system where 31 out of 32 measures of school and district achievement are predicated on test scores and growth can be that a system becomes too complex, expensive and unwieldly and that efforts to comply distracts educators from focusing on quality instruction.

The Council of Chief State School Officers (CCSSO) has taken an extensive look at considerations surrounding the use of growth models in state accountability systems. Hard questions are posed that Ohio needs to consider. Chief among these:

- Are the state’s implementation criteria reflected appropriately with regard to capacities at the state and local levels?
- Does State Education Agency (SEA) staff have sufficient expertise to implement and support the model? Is there a core group that can advocate for its use and defend its purpose?
- Are the interactions within the SEA (e.g., offices of assessment, accountability, instruction, school improvement, school support, etc.) sufficient to support the appropriate use and interpretation of the growth model to reflect the chief’s vision?
- Are there or will there be the right policies and procedures in place to leverage assessment data, in addition to calculating and reporting results for both the growth model and larger accountability system?
- Are there sufficient staffing and fiscal resources to effectively implement the growth model? Has or will the state develop training materials and supporting documentation?
- What tools or resources will the state make available to explain the growth model to the general public in non-technical terms? What support will be available for schools or districts regarding interpretation of data?25

The use of Predictive Growth, or any other test-based, assessment model, however, begs an even more fundamental question. What should Ohio be doing?

●● Are We Preparing Students for Tests that Don’t Matter?

State tests are critical for measuring student learning and ensuring that every Ohio student receives a high-quality education. The results from state tests are how we hold districts, schools and teachers accountable and ensure that all children receive the services needed to succeed. Student test scores are the foundation of Ohio’s A-F school and district report cards, which are designed to show parents, taxpayers and school leaders how well students are performing. – Ohio Department of Education26

In another publication, CCSSO recommends that states start the process of using EOCTs with a Theory of Action (TOA). Three components of such a TOA are critical to our discussion here:

- State has strong content standards and curricula that represent the knowledge and skills necessary for college and career success.
Student performance on end of course tests provides a trustworthy indicator of student knowledge and skills with respect to readiness.

End of course tests are well designed to elicit performance necessary for college and career readiness.27

Given the paradigm shift mentioned earlier, the state must always question whether or not these three components are firmly in place. The Collective Response white paper authored by Olmsted Falls Superintendent Dr. James Lloyd in response to Ohio’s ESSA Draft Plan, on behalf of several superintendents, perhaps best answers this question.

Student readiness for college or career is too narrowly defined in its current form and in Ohio’s ESSA Draft. While business and industry certainly need employees that are academically ready, a Global Economy also requires people who are able to collaborate, communicate, think creatively and engage in critical thinking. A narrowly defined accountability system that puts an overemphasis on multiple choice and short answer, standardized tests that cannot accurately depict the deeper learning that is taking place in our classrooms.28

While the need for students to have “21st Century” skills has been touted for years, both common definition and measurement of such skills remains elusive. Consider the student, for instance, who consults and applies existing knowledge to the creation of new knowledge? It might be as simple as taking a city map, some police reports and charting the safest routes for bicyclists. Already, this task has moved beyond the ability of standardized EOCTs to assess.

Computer technology and the ability to connect Ohio’s teachers and students with other teachers and students world-wide to problem solve and work on joint projects has existed in our schools for years. We do very little of this.29 Why? Unfortunately for teachers and schools there is very little return for taking on projects of this nature with looming EOCTs. Yet, such projects can reflect the six competencies of deep learning as identified by NPDL that may well be critical to Ohio’s future.

**Character** – Learning to deep learn, armed with the essential character traits of grit, tenacity, perseverance, and resilience; and the ability to make learning an integral part of living.

**Citizenship** – Thinking like global citizens, considering global issues based on a deep understanding of diverse values and worldviews, and with a genuine interest and ability to solve ambiguous and complex real-world problems that impact human and environmental sustainability.

**Collaboration** – Working interdependently and synergistically in teams with strong interpersonal and team-related skills including effective management of team dynamics and challenges, making substantive decisions together, and learning from and contributing to the learning of others.

**Communication** – Communicating effectively with a variety of styles, modes, and tools (including digital tools) tailored for a range of audiences.

**Creativity** – Having an “entrepreneurial eye” for economic and social opportunities, asking the right inquiry questions to generate novel ideas, and leadership to pursue those ideas and turn them into action.

**Critical Thinking** – Critically evaluating information and arguments, seeing patterns and connections, constructing meaningful knowledge, and applying it in the real world.30
Throughout all of this, there is one key driver. **Our system and mode of instruction will not substantially change until we alter how we test students and hold schools accountable.** If we do not do so, Ohio’s progress towards creating a globally competent and digitally knowledgeable workforce will only take place in spurts and stops. In poor districts with high student mobility, the challenge will be greater.

As the American Institutes for Research noted in a report to the Pennsylvania Department of Education, “…evidence accumulated over the last 15 to 20 years suggests that although using a multiple-choice only assessment may offer financial benefits, it may also carry risks in terms of potentially influencing undesirable instructional or other practices in schools and districts.”

The Teacher Powered Schools movement, now spanning over 100 schools in 18 states, would agree with this premise. Teachers at these schools have negotiated various agreements that allow them greater autonomy and control over program and school management. In turn, they accept greater responsibility for school success.

Referring to a 2012 Gallup study that noted out of 12 professions, teachers were the most likely to believe that their opinion is not valued, the movement notes:

> While the teaching workforce has been highly educated for the past 50 years, teaching is still set up as an industrial era job lacking most of the hallmarks of a profession. In medicine, law, engineering and other fields, practitioners have a great deal of influence over training, licensure, standards of practice, and accountability measures. They also enjoy a great deal of autonomy to apply their professional expertise to specific cases and situations. When it comes to teaching in the United States, however, it is assumed that a teacher’s job is to implement and support whatever federal, state, and district leaders decide.

There are over 100,000 teachers in Ohio and 62% with Master’s Degrees. Clearly the state has a tremendous resource that can be harnessed to promote deep learning outcomes. To do so, however, teacher’s performance should not be tied to tests that do not matter.

### Stability Should Not Mean Maintaining the Current System; Reducing Testing Time Doesn’t Mean Reform

*One of the main themes communicated during stakeholder engagement was the need for stability in the state testing system, as Ohio has changed tests two times in the last three years. Accordingly, Ohio is proposing to maintain its current state assessment system. Yet, at the same time the state heard:*

*Strategically reduce tests where it makes sense to do so. While the state has reduced the amount of time students spend taking tests—down by approximately 50 percent from 2014 to 2016—stakeholders expressed an interest in continuing to explore a further reduction in testing.*

While the Ohio Department of Education (ODE) did an admirable job of soliciting the input of nearly 15,000 Ohioans in formulating its draft plan, it has elected not to reduce the number of standardized tests at present. The need for stability in a system which has undergone several changes in its 30-year history is being used as a reason to maintain the current system. As currently constituted Ohio’s draft ESSA state plan includes seven more exams than required by ESSA. These are:
- Fall administration of the grade 3 English language arts assessment;
- Grades 4 and 6 social studies assessments;
- American history and American government end-of-course assessments;
- One end-of-course assessment in English language arts; and
- One end-of-course assessment in mathematics.

While the state has pledged to explore further reductions, the key questions posed earlier remain. Does Ohio’s system of assessment adequately measure the skills and competencies that students will need to succeed in college and career? If not, why are we keeping assessments that are not required?

Other states (such as Indiana and Pennsylvania) are delaying submissions of their ESSA plans until September 18, 2017, the second opportunity to do so. Given the flexibility provided by ESSA, this begs the question of whether Ohio might have used the additional time to move away from the stance of maintaining all tests.

**An Expensive Proposition: Can Resources Be Better Used?**

All persons, organizations, states and nations have finite dollars. Similarly, they have finite energy. The first question might be whether or not Ohio’s standardized testing system (currently in excess of what is required by ESSA) is the most efficient and best use of existing ODE and local district resources? One of the problems is that the true cost of testing is unknown.

Advocates of standardized testing often point to Matt Chingos’s 2012 study for the Brown Center on Education Policy at the Brookings Institution that estimated the annual cost for all states at $1.7 billion, equivalent to one quarter of one percent of all K-12 spending. Yet, that amount is highly conservative. As the author himself says:

> This report focuses on the costs of contracts between states and test-making vendors because they constitute the lion’s share of state-level expenditures on testing… The roles played by school and district employees who aid in test administration and scoring are important as well, but the cost of this work is challenging to measure. Calculating such costs requires information on which employees have these responsibilities, their compensation levels, how much time they devote to test-related activities, and what work they would be doing if they weren’t involved in testing.

> Future research should attempt to measure how significant these costs are, how they vary across different types of tests, and whether there are efficiencies to be gained by outsourcing more of the responsibilities currently delegated to teachers and administrators.

Ohio’s own testing disbursements, through from July 25th through September 29, 2016 (not a full fiscal year) to the American Institutes for Research (AIR) totaled $36,852,390. These funds were possibly related to the procurement contract the state has with AIR for Ohio Computer Based Assessments, due to be effective through June of 2018. Yet, Ohio’s Interactive Budget displays 20 transactions payable to AIR for $53,815,711 from July 16, 2016 to January 6, 2017. Beyond the state assessment budget line,
additional funds are drawn from the General Fund and Individuals with Disabilities Education Act funding. Most of these expenditures were tagged “development of test exams”. 39

Whatever the costs, expense mounts when local costs are calculated. A study for the American Federation of Teachers by Howard Nelson has attempted to factor in the costs Chingos made no attempt to calculate.

…our study found that the time students spend taking tests ranged from 20 to 50 hours per year in heavily tested grades. In addition, students can spend 60 to more than 110 hours per year in test prep in high-stakes testing grades. Including the cost of lost instructional time (at $6.15 per hour, equivalent to the per-student cost of adding one hour to the school day), the estimated annual testing cost per pupil ranged from $700 to more than $1,000 per pupil in several grades that had the most testing. 40

Nelson further calculated for one of the districts he studied that between 20-40 minutes of instructional time could be added each school day for most grades if testing were abandoned altogether. 41 While either of these sources could be considered to have certain biases, the issue remains that given finite resources and energy testing comes at a price. Once again, the degree to which Advanced Placement/International Baccalaureate (AP/IB) and College Credit Plus (CCP) scores as well as other substitutes for EOCTs, like the ACT can play in reducing such costs should be considered.

In Ohio, the “Collective Response” white paper notes, “Each assessment takes approximately three (3) hours of testing which equates to a loss of 2 days of learning during the school calendar year.” 42

Can these resources be better utilized? Certainly, any gain in instructional time produces enhanced learning outcomes but the answer may lie in how we measure.

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**How Should We Measure?**

Ohio needs to end its nearly exclusive dependence on standardized tests for graduation and school assessment. The state needs to target a hybrid system of graduation requirements. In doing so, it is time to recognize what pedagogical theory has supported for years. Different students learn differently and require different means of demonstrating their proficiency.

Ohio has begun to consider and should continue to provide a menu of options for students to show they are ready to graduate from high school. These options need to encompass multiple opportunities for students to demonstrate their competence prior to graduation. Key to this competence, as Ohio looks forward to rapid change in the 21st Century, should be student mastery of deep learning skills. To do so requires that the state re-think its way of doing business and most specifically how it views its current systems of measuring achievement that depends on standardized tests and a growth model, further confounded with Value-Added calculations.

What might a new system look like? Let’s begin with the assumption that the state is in essence a vast corporation that has been successfully producing a product (educated) citizens since 1803. Ohio’s success is well known and recognized from eight presidents to heroes including John Glenn and Harriet Beecher Stowe who, while living in Cincinnati, formulated the idea for *Uncle Tom’s Cabin* – arguably the most influential novel in American history. Ohio is an economic entity with a gross domestic product of over $608 billion, the 33rd largest economy in the world. 43
But, Ohio is also in competition with 49 other states and 195 other countries. How can we insure that our “product” will continue to be competitive? Today 23.8% of the adults (1,779,351) in Ohio are not in the workforce. In impoverished urban areas such as Cleveland, it’s 35.9%.44 This is not unemployment. These are adults who, for whatever reason, choose not to be in the workforce.

Warning sign? Ohio is not alone CNBC reports that the national figure for adults not in the workforce is now at 95 million.45 While there are many reasons why people choose not to be in the workforce, lack of incentives to re-enter the workforce for low-skilled workers, as the economy shifts, is considered one major reason. CNBC points out that the number of SNAP recipients has not decreased since the recession. It was 33.5 million in 2009, the year the recession ended. In 2016, the number is at 45.3 million.

Can Ohio’s education system continue to produce the products needed by its consumers? We have already seen how the paradigm is shifting and placing many businesses and employees at risk. The need for deep learning is obvious. Yet, the state is still locked into a static assessment system that drives static instruction. What if the state thought differently, particularly in our high poverty urban and rural areas? This paper argues that the state would be better served by using Clayton Christensen’s Jobs to be Done Theory, to help guide both instruction and assessment. He describes the theory as follows:

The secret to winning the innovation game lies in understanding what causes customers to make choices that help them achieve progress on something they are struggling with in their lives. To get to the right answers, Christensen says, executives should be asking: What job would consumers want to hire a product to do?46

Who are Ohio’s consumers? It might be argued that from different, but not mutually exclusive, perspectives, this can be both students and employers. What happens when Jobs to be Done Theory drives instruction? Some of the pioneers are among some of the nation’s most prestigious institutions of higher education. In College Transformed: Five Institutions Leading the Charge in Innovation, Alana Dunagan of the Christensen Institute describes how the 100 year-old Northeastern University established coding boot camps to rapidly train workers for high need, high tech jobs. As Dunagan relates:

Bootcamp programs promise intensive training in tech skills and boast robust job opportunities for successful graduates. They have found success in areas where technological innovation is creating jobs more quickly than traditional higher education can build programs to train workers.47

These are programs where students don’t necessarily need a full college degree to succeed and Dunagan further reports that there are now 300 such boot camps across the nation that graduated some 16,000 students in 2015.48 One such camp, advertising how students can become a web developer in 24 weeks, is at one of Ohio’s top private universities, Case Western Reserve.49 What would happen if Ohio, using its own CCP or Early College High School models channeled impoverished youth (grades 9-12) into such a program? EOCTs and Growth models would quickly become irrelevant as students pass college courses leading to credentials guaranteeing employment.

Such programs are in concert with Ohio’s own 2025 attainment goal of 65% of adults with a college degree or credential.50 The emphasis here is that credentials, not just degrees, have value, indeed, they may be the surest way to achieve that goal.

In a special report, Automation puts Jobs in Peril, USA Today pointed to one way such a program could work for K-12 in Ohio.
The pace of advanced robotics installation is expected to go from 2% to 3% annual growth today to 10% growth within a decade, according to Boston Consulting Group. Educators need to adjust the pace at which they revise their own programs. That’s what happened at RAMTEC, which stands for Robotic Advanced Manufacturing Technical Education Collaborative.

Chuck Speelman, superintendent of the Tri-Rivers Career Center, said the organization realized several years ago after a series of candid conversations with local manufacturers that its robotics program was not teaching marketable skills or using up-to-date equipment.

“They pretty much told us that what we were doing was a waste of time,” he said. “We had to change the paradigm.”

In partnership with robotics companies, local manufacturers and educators, Tri-Rivers Career Center designed a system that is now being replicated throughout the state.

High school students enrolled for free at RAMTEC continue earning their traditional diplomas while also collecting skills that local businesses such as global automaker Honda, which has plants in Ohio, and robotics refurbishing firm Robot Works are demanding.

Companies are pitching in. For example, Fanuc donated software training programs and sold cutting-edge robotics systems to RAMTEC at a steep discount. The company already trains about 8,000 to 9,000 people annually through its own network of paid courses, but is running at 99% capacity.

“We can’t keep up,” Aiello said. “The only way to put a dent in the demand is to partner with education.”

Educators need to adjust the pace, and that pace will be rapid. Rather than focus on achieving growth with static assessments and static instruction across multiple sub-groups, success in programs such as RAMTEC or other adaptive technology programs such as Arizona University’s Global Freshman Academy. The academy offers an online freshman year that is available worldwide with no admissions process and full university credit. Programs of this nature are tangible and real for all students. The emphasis is on real and immediate preparation for success in college and careers.

**Conclusion**

This white paper of the Stark Education Partnership calls for the State Board of Education and the General Assembly to incorporate new workforce thinking into the accountability plan. While we fully support the need for high standards and accountability in Ohio’s schools, we believe Ohio needs to end its nearly exclusive dependence on standardized tests for graduation and school assessment. Instead, we recommend the state establish a hybrid system of graduation requirements and school assessments with restored authority to local communities.

The Every Student Succeeds Act (ESSA) federal guidelines require states to submit an accountability plan in April or September 2017. The requirement presents Ohio with an unparalleled opportunity to examine its current system of standards, instruction and accountability in light of the massive paradigm shift being brought on by developments in technology, artificial intelligence and learning machines – a shift that is already being felt in Ohio. We believe that such a dramatic shift calls for a substantial
redefinition of what students need to know and be able to do to succeed in college and career, and subsequently, how we teach and how we assess both knowledge and skills. Little evidence exists that it is being done in the draft state plan.

Therein lies the conundrum.

Given this pace of change and workforce transformation, we believe we must respond swiftly by shifting from an accountability system where 31 out of 32 measures of school and district achievement are predicated on static standardized test scores to a more dynamic and robust system that measures learning competencies students will need to succeed in their future.

The following is suggested:

- Reduce the testing footprint by eliminating the seven additional tests no longer required by ESSA;
- Use the time and resources gained from the testing reduction to develop new pedagogies focused on Deep Learning competencies that link learning to real life;
- Move away from growth models and apply workforce thinking, as described in Clayton Christensen’s Jobs to be Done framework, to instruction and assessment;
- Create a universal freshman academy using adaptive technology to prepare all students for college or careers;
- Authorize local school boards and faculties to use course grades by teachers to award students points towards Ohio’s Graduation Requirements;
- Restore the process to use the ACT/SAT and WorkKeys Industry Credentials as substitute measures for end of course tests (EOCTs) towards graduation requirements;
- Expand the use of College Credit Plus (CCP), Advanced Placement (AP) and International Baccalaureate (IB) scores as substitutes for EOCTs or to gain points towards graduation.
- Institute a process to develop relevant local report cards with local districts and their communities;
- Create a joint K-12-higher education-business innovation committee to generate new avenues for student success using a Jobs to be Done approach, rather than static instruction with a retrospective growth model.

“The truth is that we can no longer afford to focus on graduating learners armed only with predetermined skills and (already existing) knowledge. The workforce is becoming far too global, too digital, and increasingly too self-employed. We must instead refocus on cultivating creativity, to include not only problem solving, but also problem finding and problem framing.”

— Building Ohio’s Future Workforce, Governor's Office of Workforce Transformation (December 2016)


10 Pioneer Natural Resources, one of the most productive West Texas producers


15 California Department of Education (September 2016) Report to the Governor, the State Legislature, and the Director of Finance: Recommendation on the High School Exit Examination and Pathways to Graduation, p.1.

16 Ibid, p.9.


18 Original plans called for use of other standardized tests, ACT scores (on hold), AP/IB scores. And (non-standardized) CCP grades.


21 Ibid, p. 11.

22 Ohio Draft Overview, pp.9-10


See Ohio Department of Education, Graduation Questions and Answers at: http://education.ohio.gov/Topics/Ohio-Graduation-Requirements/Latest-Updates-on-Graduation-Requirements/Graduation-FAQs-for-2015_2016


Several Stark County did maintain a rather successful and nationally recognized Book Sharing Project between their students and students in the Western Galilee region of Israel for several years. It was a labor of love on the part of these teachers and the principals that supported them.

Verbatim: New Pedagogies for Deep Learning, pp. 2-3


See Teacher Powered Schools at: https://www.teacherpowered.org/

The only Teacher Powered School in Ohio is Hughes STEM High School in Cincinnati, a district school.

Teacher-Powered Schools: Generating Lasting Impact through Common Sense Innovation A Report by Education Evolving | May 2014, p.4. Available at: https://www.teacherpowered.org/files/Teacher-Powered-Schools-Whitepaper.pdf


Ohio Department of Administrative Services CSP903714

See: Ohio’s Interactive Budget Advanced Search at: http://interactivebudget.ohio.gov/Expenses/AdvancedSearch.aspx


Ibid, p. 3.

A Collective Response to Ohio’s Every Student Succeeds Draft Plan, p.5.


US Census: American Community Survey


See: CRWU Coding Bootcamp at: https://codingbootcamp.case.edu/landing/?s=G-Ubrandedmkwid=tDFNoSm%dlpckw=%2Bcoding%20%2Buniversities&pcrid=181249824443&pmt=b&utm_source=google&utm_medium=cpc&utm_campaign=%5BS%5D%5D+General+Coding+%5D+Broad&utm_term=%2Bcoding%20%2Buniversities&utm_content=181249824443&s=google&k=%2Bcoding%20%2Buniversities&gclid=Cj0KEQjAxeTFBRCm1q_7rGt_r8BEiQAANPqUI_4lJf0yfAca2wEyiH-I9tJfKo5wNO5SfE3Jp_BZaQaApr4P8HQAQ

See: Ohio Department of Higher Education Making Certificates Count: An Update on Ohio’s Efforts to Identify, Strengthen, Promote and Increase Certificates of Value in the Workplace. Available at: https://www.ohiohighered.org/sites/ohiohighered.org/files/uploads/attainment/Making-Certificates-Count_FINAL_0.pdf


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