

# BrightBytes' Response to Arizona Department of Education Request for Information # ADED16-0002

**Issue Date:**

June 7, 2016

**Description:**

Arizona School Accountability Components & System

**Due date:**

July 15, 2016

Time: 3:00 p.m. (MST)

## Contents

<b>Introduction</b> .....	1
<b>Information Being Requested</b>	
1. Demonstration of Values .....	2
2. Background .....	3
3. Overview of System .....	6
4. Measuring Student Growth .....	11
5. Other Technical Considerations .....	16
<b>Signed Completed Form</b> .....	<b>19</b>

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

## Introduction

"Tests scores alone cannot provide a complete picture of how a school or district is performing. Most of our current testing is better at measuring the demographics of the surrounding neighborhood, than the efforts of either the teacher or the student . . . If we look beyond current testing scores to see what truly makes a school successful, we can give parents the information they need to find the right school for their children. By reducing the emphasis on high stakes testing in our accountability system, schools can start focusing more on instruction and less on test preparation."

- Arizona Superintendent of Public Instruction Diane Douglas as quoted in *AZ Kids Can't Afford to Wait Plan*

The Arizona Department of Education, under the leadership of Superintendent Diane Douglas, has taken an innovative approach to measuring accountability. By looking at factors beyond test scores, we can understand a more complete picture of growth. The research conducted and analyzed by the psychometricians at BrightBytes validates the efficacy of this approach and have worked to incorporate it into an intuitive web-based data analytics portal. The BrightBytes Clarity platform, and specifically the Early Warning module, will provide the Arizona Department of Education with research-based data analysis that is essential to creating an accountability system that looks beyond testing scores and high stakes testing. The BrightBytes Clarity platform will provide the Arizona Department of Education with the metrics it needs to create an accountability system that allows schools to achieve the goals Superintendent Douglas mentions in the quote above, a system that allows schools to focus more on instruction and less on test preparation. BrightBytes' Early Warning module will do this by providing research-based data on the factors that most impact student learning outcomes and measure these indicators over time. It will provide this data in a way that is educative, engaging, and actionable. The module can be used to determine both metrics for accountability grading and for district and school leaders to improve student achievement by focusing on more than just test results.

The BrightBytes Early Warning module's advanced, research-based algorithm looks at student achievement and risk predictions across 24 building-specific predictors that span four domains, Academics, Attendance, Behaviors, and Demographics. These indicators and domains are also used to assess school, district, and state risk predictions.

Superintendents and principals in districts across West Virginia lobbied for the BrightBytes Early Warning data to be included as a metric their state's accountability rating plan because they know the data is research based, feel this data is fair, and can use this data to drive positive change in their schools. They have lobbied for the BrightBytes Early Warning module's risk level data to be part of their state's accountability plan because it's an accountability measure that they can use to improve student achievement. The 3% increase in West Virginia's high school graduation rate from the 2014-2015 school year to the 2015-2016 school year is evidence of the power of the BrightBytes Early Warning module's ability to improve student achievement.

While BrightBytes does not fit all of the requirements in the information being requested, it does have an important role to play in helping the Arizona Department of Education create an accountability system that will help accomplish its mission to ensure that every child has access to an excellent education. BrightBytes will help the Arizona Department of Education ensure that its accountability system is based on more than high stakes testing results and that it includes research-based metrics that your district and school leaders can utilize to improve student achievement.

There is a reason why BrightBytes is used in 1 in 4 schools, 84 service agencies, and 41 states the across the U.S. It's because we help improve the way the world learns.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

**Information Being Requested:**

**1. Demonstration of Values**

**a) How does a transparent and fair accountability system define an “excellent” school in regards to:**

- i. Preparing all students for College/Career readiness**
- ii. Improving achievement and outcomes among student subgroups**
- iii. Graduating students prepared for postsecondary workforce and/or education**
- iv. Demonstrating growth on standardized assessments aligned to Arizona’s standards**
- v. Providing a high-quality, well-rounded education to families regardless of income**
- vi. Meeting the needs of parents and students in the community**

Not applicable to BrightBytes’ response to this RFI.

**b) How does a transparent and fair accountability system define a “failing” school in regards to:**

- i. Preparing all students for College/Career readiness**
- ii. Improving achievement and outcomes among student subgroups**
- iii. Graduating students prepared for postsecondary workforce and/or education**
- iv. Demonstrating growth on standardized assessments aligned to Arizona’s standards**
- v. Providing a high-quality, well-rounded education to families regardless of income**
- vi. Meeting the needs of parents and students in the community**

Not applicable to BrightBytes’ response to this RFI.

**c) How does a transparent and fair accountability system differentiate among schools that are neither “excellent” nor “failing”?**

Not applicable to BrightBytes’ response to this RFI.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

## 2. Background

- a) **Provide a brief history of the organization and its governance structure, if applicable, or provide a brief overview of the individual's experience with accountability of K-12 public schools and districts**

### **Our Organization**

Founded in January 2012, BrightBytes is a learning analytics organization that measures student-learning outcomes using complex analysis and educational research. The outputs of the analysis are used to power an online platform that serves as a decision support system for educational leaders. The organization's platform, Clarity, measures modern learning outcomes and the factors that shape them – identifying strengths and gaps, writing detailed planning documents, and delivering the tools needed to take action. The platform connects educators and leaders to relevant research in order to drive student learning outcomes.

The platform also measures progress on these plans, creating reports that leaders can use to make the case for additional resources and report results to stakeholders. BrightBytes has a personalized, research-based and actionable solution on the Clarity platform for every area of need that impacts student learning in your school or region.

BrightBytes' does not have a standard organization chart or governance structure. BrightBytes believes that its team reflects one of the key drivers of its success. It is made up of individuals that bring incredible depth in a wide range of fields that must be incorporated to create a truly useful and effective product. The combination of Silicon Valley technologists, award-winning educational researchers, statisticians, education practitioners, designers and engineers is creating cutting-edge tools that truly improve the way the world learns and actually work in schools.

### **Experience**

BrightBytes data is used to drive decision-making at the state, service agency, district, and school levels. BrightBytes has developed long-lasting partnerships with its customers while creating unmatched products.

BrightBytes' Clarity platform is currently used by 1 in 4 schools, 84 Educational Service Agencies, and in 41 states across the US. BrightBytes' 98% customer renewal rate demonstrates its high customer satisfaction and long-term customer relationships. Clarity data is used in the West Virginia Department of Education's accountability plan and to inform the Nebraska Department of Education's accountability system, Accountability for a Quality Education System, Today and Tomorrow (AQuESTT) results.

- b) **Identify the individuals from the organization that will be working with Arizona officials on all aspects of the accountability system's implementation.**

Arizona officials would have access to BrightBytes expert team of Silicon Valley technologists, award-winning educational researchers, statisticians, education practitioners, designers and engineers. Leading the project and working directly with Arizona officials would be Dr. Kristal Ayres, Dr. Steven Paine, Gustavo Perez, and Cristin Quealy.

In addition to the BrightBytes internal team, the Arizona Department of Education will also be supported by, and benefit from, the Mazin Education team.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

### **Kristal Ayres, Ph.D. Senior Professional Learning Leader**

Kristal Ayres, Ed.D. in Educational Administration with a concentration on Teacher Learning, has over 27 years of educational experience within teaching and administration in K-12 districts, at the university level, and nationally as a consultant, instructional coach, and national trainer for the College Board. As Director of Professional Learning in a large urban school district, Dr. Ayres built teacher and leader capacity using research-based best practices essential to increase student achievement. Kristal has worked closely with the West Virginia Department of Education to embed their Clarity platform data into their new accountability plan.

### **Steven Paine, Ed.D., Educational Innovation Leader**

A well-known educator with over three decades of diverse experience, Dr. Paine served as West Virginia's 25th State Superintendent of Schools and has been a deputy state superintendent, district superintendent of schools, curriculum director, award-winning school principal and classroom teacher. He is a past President of the Council of Chief State School Officers, has served on the National Assessment Governing Board for NAEP, the Nation's Report Card and serves on the National Commission for Teaching and America's Future and the National Dropout Prevention Center Board of Directors. He has held various executive positions in the private sector since his retirement from public service and is the immediate past President of the Partnership for 21st Century Skills where he continues to serve as a Senior Advisor. As the Superintendent of West Virginia schools, Dr. Paine developed West Virginia's previous accountability system and has worked closely with the West Virginia Department of Education to revise their current accountability system to meet new federal requirements.

### **Gustavo Perez, Senior Educational Research Leader**

Gustavo has been a life-long advocate of access and equity in all schools, but in particular for those from under-served and under-resourced communities. His work has focused on improving educational outcomes for both students and educators using technology not only as a resource, but as means to change. Gustavo has undertaken this work at both the school and district level, as well as the Arizona Department of Education. He holds a B.A. from Stanford University in International Relations and Spanish.

### **Cristin Quealy, Director of Data Science and Operations**

Cristin is an experienced, data-driven leader with a passion for bringing efficiency and innovation to public sector education services. She has a decade of experience working in K-12 education. Cristin began her career as an elementary and middle school teacher and later transitioned to district administrative roles. Cristin's focus is in operations. Her specific area of interest is using data to implement strategic priorities and develop effective processes. Cristin has extensive experience in this area. Her previous experience includes working with school districts to develop scalable solutions to district-level finance reform with a goal of equitable distribution of resources and redesigning the human resources role and processes, as well as district-wide communication structures. Cristin has a Masters in Policy, Organization and Leadership Studies from Stanford University.

### **Mazin Education**

The Early Warning module on BrightBytes' Clarity platform is the result of a partnership between BrightBytes and Mazin Education, a research organization that brings 15 years of research on early warning to its culmination on the Clarity platform. Like all BrightBytes experiences, the resulting module is educative, engaging, and actionable.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

Dr. Mariam Azin is President of Planning, Research & Evaluation Services (PRES Associates) and CEO of Mazin Education, the research partner with BrightBytes behind the development of the Early Warning module on the Clarity platform. Dr. Azin has over twenty years of work experience conducting evaluations and research in the areas of education, social services, mental health, and criminal justice. She has been principal investigator on numerous local, statewide, and national evaluation efforts related to at-risk learners, school climate, educational technology, and professional development, including serving as principal investigator on several Safe Schools/Healthy Students grants, designed to provide comprehensive, seamless services to at-risk students and their families. Dr. Azin is currently serving as the principal investigator on the federal Project AWARE grant, a major goal of which is to expand capacity at the state and local level to make schools safer and improve school climate.

Mazin Education was created to support the development and large-scale deployment of educational software solutions developed by this research and the work of PRES Associates. BrightBytes Early Warning module came directly out of PRES' years of research in the area of at-risk students.

- c) Disclose and discuss the organization's work within and around Arizona's state education agency, local education agencies, and/or public education agencies including assurance any work or deliverables produced by the organization will exclude bias or undue influence, if applicable.**

Within Arizona, BrightBytes works with Tucson Unified School District and Sunnyside Unified School District.

BrightBytes began its partnership with Tucson Unified School District in December 2015. Tucson Unified School District is using Clarity to help ensure that all students in the district graduate high school and are empowered to reach their potential and achieve their dreams. BrightBytes Early Warning module and Intervention module will be used to identify at-risk students earlier and more accurately to ensure that they receive the right support at the right time and that support interventions are monitored. The data will be used at the school level and at the district level to improve student achievement. Tucson Unified School District is also using the data to help meet its federal court oversight requirements that includes Unitary Status Plan objectives and reporting needs.

BrightBytes began working with Sunnyside Unified School District in January 2014. Sunnyside Unified School District is using the Clarity platform to help improve the impact of technology on learning. They're currently using BrightBytes data and resources from the Clarity platform to drive anytime, anywhere professional learning with their teachers and to improve students and teachers' use of the 4Cs (communication, collaboration, creativity, and critical thinking). The district is working with its teachers to use the Clarity data as a self assessment tool, and to then use this data to inform a personalized, needs based, and data-driven professional development.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

### 3. Overview of System

- a) **List and define the metrics included in a potential accountability system which meets the needs of Arizona's various school types and uses multiple measures. Please highlight the extent to which academic achievement on Arizona's statewide assessments (i.e. AzMERIT, NCSC, AIMS, etc.) and/or results from a menu of assessment can be meaningfully integrated in the proposed system.**

It is important that an accountability system meet the needs of various school types, use multiple measures, and use data that state, district, and school leaders can use to drive change rather than collecting data for the sake of having data. In order to ensure an accountability system meets the needs of various school types, includes multiple measures, and utilizes data that state, district, and school leaders can use to drive change, BrightBytes could work with the Arizona Department of Education in the same way that it has with the West Virginia Department of Education and Nebraska.

In the case of West Virginia, BrightBytes Early Warning module was implemented statewide. Student risk levels and changes over time in these risk levels at the school levels are being incorporated into the metrics used in West Virginia's accountability system.

The Early Warning module on the Clarity platform uses an advanced, research-based predictive analytics system to accurately determine student risk levels. The predictive algorithm weighs indicators dynamically based on your districts' actual data on historical dropouts and graduates. BrightBytes' predictive models are fitted by historical patterns in your district by school and by grade level, rather than using a one-size-fits-all approach. As educators who have worked in schools, the BrightBytes team knows that every school is different. More than 15 years of research supports our experience. The BrightBytes Early Warning module's advanced, research-based algorithm takes this into account through its 24 building-specific predictors, which are organized into four domains: Academics, Attendance, Behaviors, and Demographics.

#### Academics

- Assessments – District
- State Assessments – Math, Reading, Social Studies & Science
- Credits Earned Annually
- GPA - All Courses
- GPA - Core Academic Courses
- Grade Retention
- Pass Rate - All Courses
- Remedial Courses

#### Attendance

- Attendance - First 30 Days
- Attendance - Total
- Tardies

#### Behaviors

- Behaviors – Major
- Behaviors – Minor
- Disciplinary Referrals
- Expulsions
- Suspensions

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

#### Demographics

- Age
- Ethnicity
- Gender
- Free & Reduced Lunch
- 504 status
- Special Education
- Limited English Proficiency
- Mobility

Overall and domain specific risk levels are determined for each student, school, and district along a nine-level continuum of risk from high to low. Overall risk levels and domain specific risk levels are calculated. Arizona's assessment data such as AZLEARNNS, AzMERIT, NCSC, and AIMS would be included as risk prediction factors used to calculate risk levels in the Academics domain and would show up in aggregate form under that domain.

A point system can then be assigned to the various risk levels and the changes in overall risk levels by school. This point system can contribute to A-F accountability system ratings. The West Virginia Department of Education is assigning points to schools based on the number of their students who show reduced levels of risk over the school year within the BrightBytes Early Warning module. These points are then part of their A-F rating system. As student risk levels decrease, schools earn points within their accountability rating. The West Virginia Department of Education is assigning accountability rating points based on reduction of overall risk; however, points could be assigned and weighted by specific domains (Academics, Behavior, Attendance, and Demographics), or one of the Early Warning module's 24 success indicators.

The West Virginia Department of Education is also considering a growth model. BrightBytes' Early Warning module updates risk predictions monthly. A growth model would award points based on a decrease in student risk levels over a five-month period, or over the course of the school year rather than assigning points based on risk levels from a one-time slice. West Virginia district superintendents have lobbied for BrightBytes' Early Warning module risk levels to be part of the state's accountability plan. The superintendents have lobbied for this data to be part of their state's accountability plan metrics because they know this data is research based, feel this data is fair, and can use this data to drive positive change in their schools. They have also lobbied for the BrightBytes Early Warning module's risk-level data to be part of their state's accountability plan because its an accountability measure that they can use to improve student achievement rather than an accountability measure used solely to rate their schools and districts. Evidence of the power of the BrightBytes Early Warning module's ability to improve student achievement is the 3% increase in West Virginia's high school graduation rate from the 2014-2015 school year to the 2015-2016 school year.

**b) Describe how the proposed metrics are aligned to college / career expectations and include any alignment studies, if available.**

In Nebraska, schools and districts are using their BrightBytes Technology & Learning module to answer and support Evidence Based Analysis (EBA) responses, and to inform College and Career improvement goals for Nebraska's accountability plan, AQuESTT. Schools and districts are using the following data points for College and Career improvement goals and to measure improvement for their state's accountability plan reporting requirements.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

- Within the BrightBytes Technology & Learning module's Skills domain, they are using the following data points.
  - **Student Foundational Skills**  
Foundational technology skills correlate with technology confidence. Students with strong foundational skills are more likely to persevere in solving difficult technology problems and foster digital, peer-to-peer relationships for a variety of social and academic purposes.
  - **Student Online Skills**  
When students possess good online skills, such as confidence using shared digital workspaces, collaboration in the classroom increases. Students who possess these skills are also able to create content and conduct online relationships that serve their learning goals and preferences.
  - **Student Multimedia Skills**  
Strong online skills, such as confidence using shared digital workspaces, have been correlated with increased collaboration in the classroom. Students can think about concepts and interactions in more varied ways with the affordances of multimedia and multimodal representations.
  - **Parent Skills**  
Understanding the skill levels of parents enables you to gauge the type of support available to students at home. This information is critical to curriculum development and resource allocation.
- Within the BrightBytes Technology & Learning module's Classroom domain, they are using the following data points.
  - **Teacher Use of the 4Cs**  
The 4Cs (Communication, Collaboration, Critical Thinking, and Creativity) are essential for developing the knowledge and skills needed for college and career readiness. Teachers who ask students to solve authentic problems and engage with others using the Internet can increase student engagement and effectively prepare students for 21st century learning.
  - **Student Use of the 4Cs**  
The 4Cs (Communication, Collaboration, Critical Thinking, and Creativity) are essential for developing the knowledge and skills needed for college and career readiness. Students must have frequent access to computers in the classroom in order to hone their skills in these four areas.
  - **Teacher Digital Citizenship**  
Teachers' comfort with, and frequency of, teaching digital citizenship is an important step in preparing students to be responsible global citizens. Attention to digital citizenship in the classroom establishes a "code of conduct" among students as well as those they encounter online.
  - **Student Digital Citizenship**  
Strong digital citizenship skills help students create online profiles that convey respect for themselves and others. In turn, these profiles show a level of college and career readiness through the responsible use of the Internet.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

- **Parent Comfort with Digital Citizenship Topics**  
Parent comfort with digital citizenship topics is important because parents who use the Internet are more likely to acknowledge that their child has experienced a difficult situation online than non-users (Lenhart et al., 2011).

In addition, Early Warning module risk and achievement data can be used as metrics aligned to college/career expectations. Overall Early Warning module no-risk/low-risk student data, as well as Academic domain specific data, can be used for college/career expectation metrics as well as data from Behaviors and Attendance that can impact high school graduation, and thus, college readiness. Below are two examples of Early Warning module data points that align to college/career expectations. All of the following information including the research is embedded into the Early Warning module.

- **Attendance Domain**
  - Numerous studies have directly linked students' future career success or failure to their school attendance and tardiness patterns (Moore, 2012).
    - Moore, J.S. (2010). \*Best practices employed by Georgia high school administrators to reduce student tardiness\* (Doctoral dissertation). Georgia Southern University.
- **Third Grade, State Assessments – Reading Success Indicator**
  - Students who are assessed as above grade level in reading proficiency by third grade graduate from high school and enroll in college at much higher rates than students who are assessed as below or even at grade-level (Lesnick et al., 2010).
    - Lesnick, J., Goerge, R., Smithgall, C., & Gwynne J. (2010). \*Reading on grade level in third grade: How is it related to high school performance and college enrollment?\* A report to the Annie E. Casey Foundation. Chicago: Chapin Hall at the University of Chicago.

In addition the Insights embedded into the Early Warning module provide educators with research based best practices on how to help ensure students are prepared for college and a career. The BrightBytes' Intervention module can help you track and provide metrics on interventions related to college/career expectations, such as students who have been assigned and completed college preparatory courses or standardized assessments such as the ACT.

- c) **Describe how differentiated weights and metrics resulting in an overall letter grades can be compared between schools and across years to inform the following:**
- i. **Achievement of all students and progress of student subgroups**
  - ii. **Information needed by parents/communities to inform school choice**
  - iii. **Improvement of various types of schools within Arizona**
  - iv. **Construct relevant components of school quality**

As noted above, in the case of West Virginia, differentiated weights and metrics can be assigned using the BrightBytes Early Warning module's nine-level continuum of risk resulting in an overall letter grade. Differentiated weights and metrics can be assigned to the four domains and 24 success indicators as well as the various risk levels within the BrightBytes Early Warning module.

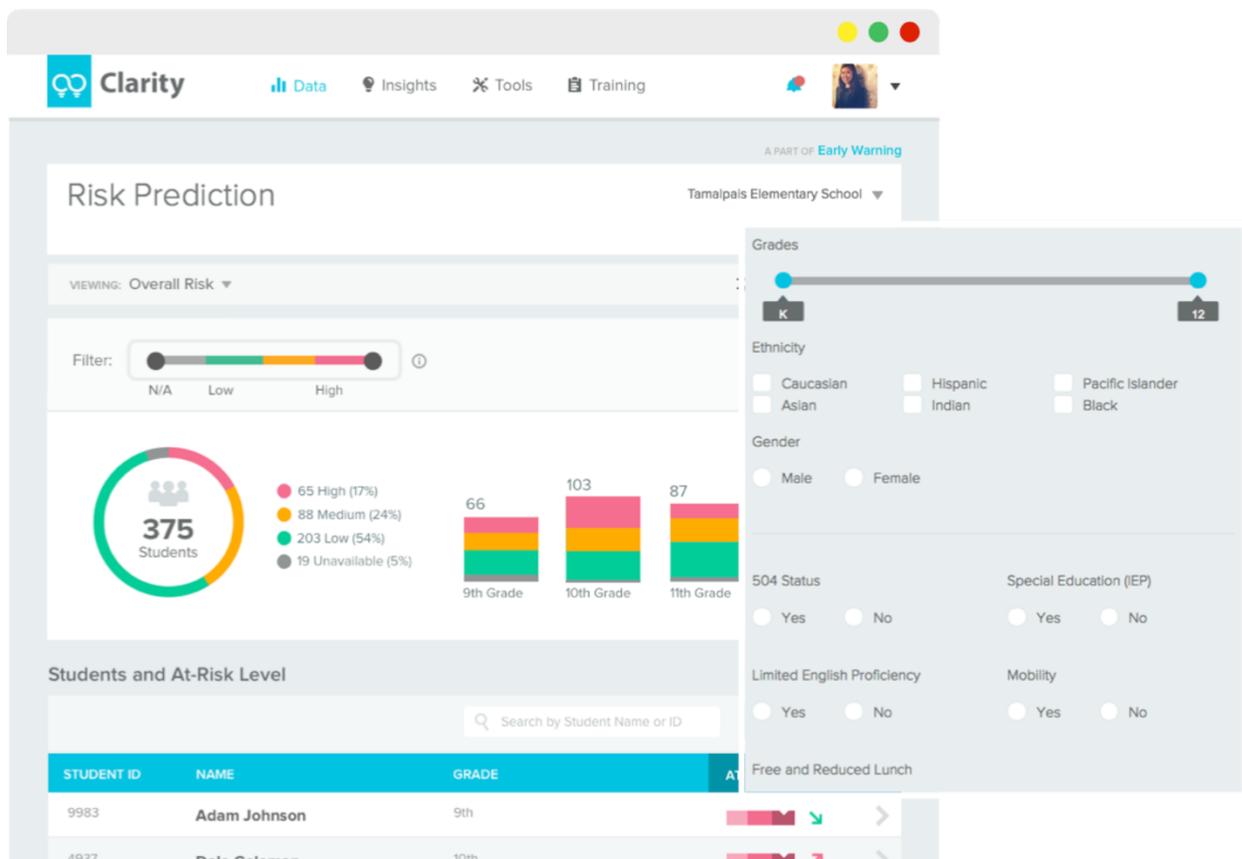
The West Virginia Department of Education is using risk levels from the BrightBytes Early Warning module to contribute the the metrics resulting in an overall letter grade. The West Virginia

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

Department of Education is assigning points to schools based on the number of their students who show low risk in the BrightBytes Early Warning module. These points are then part of their A-F rating system. The more low-risk students a school has, the more points it gets towards an A rating. The West Virginia Department of Education is assigning accountability rating points based on overall risk; however, points could be assigned and weighted by specific domains (Academics, Behavior, Attendance, and Demographics), or one of the Early Warning module's 24 success indicators.

Differentiators weights and metrics can also be assigned to change over time data. West Virginia is working on building this into their accountability system. The BrightBytes Early Warning module's trends over time feature allows you to easily compare changes over time at the state, district, school, and student levels. The Early Warning module will provide Arizona with a standard, research-based data set from which to derive accountability metrics and to compare schools using consistent data. A growth model would award points based on a decrease in student risk levels over a five-month period, or over the course of the school year rather than assigning points based on risk levels from a one-time slice.

Achievement of all students can easily be measured through the module's various dashboards and reports. Filters can then be applied to view subgroups of students based on risk level, domain and indicator type, and demographics.



**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

The Early Warning module also has the capability to filter types of schools, such as high risk versus low risk, elementary schools versus high schools, district schools versus private schools versus charter schools. For example, with two clicks the module can show you all high-risk districts in a state or all low-risk schools in a district. An accountability system could then easily be created that weights metrics differently based on the various types of schools or weights improvement differently based on the various types of schools. It also allows you to target support based on types of schools.

**d) Describe how the proposal may reduce administrative burden for LEAs and the SEA given the variation in accountability requirements related to applicable federal laws, state laws, State Board of Education rules, charter school authorizers, and other regulatory bodies.**

First and foremost, including BrightBytes Early Warning module's risk predictions in your accountability plan metrics resulting in graduates will give your state, district, and school leaders accountability data that can be used to improve student achievement. It will reduce the administrative burden for LEAs and the SEA by helping automate and standardize accountability reporting data. It's data that can be used to meet multiple reporting requirements, such as all ESSA subgroup reporting requirements. The advanced filter tool allows you to quickly pull reports based on demographics, ELL, long-term ELL, foster kids, homeless youth, and military-connected students as long as this data is in your SIS. It also meets reporting requirements for many of the districts under federal court supervision such as the Tucson Unified School District Desegregation Order. The Early Warning module also gives districts easy access to the data and reports they are required to submit for state achievement profiles and helps to standardize this data across districts.

BrightBytes reduces the administrative reporting burden for LEAs and the SEA, and does so through data that is built around a framework based on decades of research.

#### **4. Measuring Student Growth**

**a) What are the advantages of utilizing this measure of growth on Arizona's statewide assessments and in Arizona's new A-F Letter Grade Accountability System?**

Not applicable to BrightBytes' response to this RFI.

**b) Please discuss evidence of technical appropriateness and statistical robustness to support the validity and reliability of student-level growth scores based on each of the following assessment scenarios:**

- i. Vertically scaled assessments of grades 3 through 8 ELA standards**
- ii. Vertically scaled assessments of grades 3 through 8 Mathematics standards**
- iii. Vertically scaled, non-sequential with extreme variability in the instructional format for end of course assessments of high school ELA and Mathematics standards**
- iv. Across test administration modality (Paper and computer-based) equated on a common vertical scale in each of the subjects above**
- v. Varying assessments selected off of a menu of assessments potentially available in high school grades and administered in various modalities**

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

- vi. **Varying assessments selected off of a menu of assessments potentially available to students in elementary grades and administered in various modalities**
- vii. **Annual tests of English language proficiency as measured by AZELLA administered in Grades K through 12**
- viii. **Summative assessments of Science standards administered to students enrolled in grades 4, 8, and high school**

Not applicable to BrightBytes' response to this RFI.

**c) Please describe the organization's professional experience and technical capacity for conducting this type of work on behalf of education agencies locally, nationally, and/or internationally.**

There is no one else in the K-12 education market with a proven track record to match BrightBytes professional experience and technical capacity. BrightBytes has successfully completed numerous statewide, service agency, district, and school level implementations and developed long-lasting partnerships with its customers while creating unmatched products.

BrightBytes Clarity platform is currently used by 1 in 4 schools nationally, 84 Educational Service Agencies, and in 41 states across the U.S. BrightBytes' 98% customer renewal rate demonstrates its high customer satisfaction and long-term customer relationships.

***"The BrightBytes Clarity platform has been very well-received by the educators in our state. It features a beautiful and intuitive dashboard along with robust reports, provides extremely accurate predictions, facilitates a deeper level of understanding regarding impactful interventions, and is fast and user responsive . . . Educators do not have to spend an enormous amount of time analyzing data which frees up their time to provide interventions and services to their students while meeting our reporting requirements."***

– Michele Blatt, Chief Accountability and Performance Officer for the West Virginia Department of Education, West Virginia

*Evidence of the power of the BrightBytes Early Warning module's ability to improve student achievement is the 3% increase in West Virginia's high school graduation rate from the 2014-2015 school year to the 2015-2016 school year.*

***"This kind of measurement has made our...initiatives dramatically more effective, while simultaneously saving valuable time and money."***

– Lisa Brady, Superintendent at Dobbs Ferry Union Free School District, New York

***"BrightBytes' research-based predictive algorithm gives us the ability to customize the identification of student needs and provide resources that ensure student success. It provides us with a micro and macro view of our district allowing us to make more data driven decisions and connect research to practice."***

– Dr. Diana Greene, Superintendent, Manatee County School District, Florida

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

***"I like the way I'm able to identify those students that are not necessarily the highest risk students but simmering (moderate across multiple risk indicators). I'm able to focus on one area to address those specific concerns to reach the moderate level students. Being able to share the student's profile with parents will be less offensive than just giving parents raw data. I'm really excited to use this now!"***

– Susan DeBalossio, High School Counselor, West Virginia

**"BrightBytes data adds validity to district's Accountability for a Quality Education System Today and Tomorrow (AQuESTT) Evidence Based Analysis (EBA) responses and provides direction for district's continuous improvement efforts"**

– Jill Bates, Assistant Administrator, ESU #8, Nebraska

*On the next page is an example of how Nebraska districts are using their BrightBytes Technology & Learning module data to meet their state's accountability analysis report requirements.*

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**



**TECHNOLOGY & LEARNING**

**USE THE BRIGHTBYTES TECHNOLOGY & LEARNING MODULE TO INFORM AQuESTT**

The BrightBytes Technology & Learning module provides the data necessary to answer and support Evidence-Based Analysis (EBA) responses, and inform improvement goals based on Accountability for a Quality Education System, Today and Tomorrow (AQuESTT) results.

When responding to the EBA and documenting your evidence, explore the data points associated with the success indicators for each tenet. When reviewing your AQuESTT scores, select one or two tenets where your organization has room for growth and identify priority data points from the BrightBytes' platform to create measurable goals for improvement.

**BRIGHTBYTES' TECHNOLOGY & LEARNING SUCCESS INDICATORS ALIGNMENT WITH AQuESTT TENETS:**

<p><b>Positive Partnerships, Relationships, and Student Success</b></p> <p><b>ENVIRONMENT:</b> The 3Ps, Support, Beliefs, Parents</p> <p><b>CLASSROOM:</b> Student Use of 4Cs, Assessment, Assistive Technology</p>	<p><b>Transitions</b></p> <p>Comparisons of Data Points across School Sites</p> <p>Differences between Feeder and Upper Schools</p> <p><b>CLASSROOM:</b> Teacher Use of the 4Cs &amp; Assistive Technology</p>	<p><b>Educational Opportunities and Access</b></p> <p><b>ACCESS:</b> Students at School, Students at Home, &amp; Parents</p> <p><b>ENVIRONMENT:</b> The 3Ps</p> <p><b>CLASSROOM:</b> Teacher Use of the 4Cs, Student Use of the 4Cs, Assistive Technology</p>
<p><b>College and Career Ready</b></p> <p><b>SKILLS:</b> Student Foundational Skills, Student Online Skills, Student Multimedia Skills, Parents</p> <p><b>CLASSROOM:</b> Teacher Use of the 4Cs, Student Use of the 4Cs, Teacher Digital Citizenship, Student Digital Citizenship, Parents</p>	<p><b>Assessment</b></p> <p><b>ENVIRONMENT:</b> The 3Ps</p> <p><b>CLASSROOM:</b> Assessment</p>	<p><b>Educator Effectiveness</b></p> <p><b>ACCESS:</b> Teachers at school</p> <p><b>ENVIRONMENT:</b> The 3Ps, Support, Professional Learning</p> <p><b>CLASSROOM:</b> Teacher use of the 4Cs</p>

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

- d) Describe any services or assistance the vendor might provide to expedite the calculation of student growth scores so they are available to ADE, schools, students, and parents via student score reports produced by Arizona's test vendor(s).**

Not applicable to BrightBytes' response to this RFI.

- e) How can parents, teachers, students, and schools use growth score(s) to interpret individual student trajectory relative to Arizona's academic standards?**

Using the BrightBytes Early Warning module's risk prediction data will give parents, teachers, students, and schools growth scores to interpret an individual student trajectory relative to Arizona's academic standards and based on additional domains and indicators that impact a student's trajectory. The BrightBytes Early Warning module will predict student trajectory with greater accuracy and give users the ability to identify student risk levels as early as first grade.

The BrightBytes Early Warning module individualizes student trajectory prediction using an advanced, research-based algorithm that determines the factors that drive risk at each school, for each student.

**What makes BrightBytes' predictive analytics approach unique?**

- **BrightBytes Identifies a Student's Trajectory for Risk Earlier, Before They Are At-Risk and Off Track**  
BrightBytes' Early Warning module identifies students as early as first grade versus threshold systems that typically begin identifying students in ninth grade.
- **BrightBytes Identifies Students More Accurately**  
In West Virginia, BrightBytes identified which third graders would graduate from high school with 94% accuracy, almost twice the accuracy of the previous threshold-based system that only identified risk for students once they entered high school.
- **BrightBytes Customizes Trajectory Risk Prediction by District, School, and Grade Level**  
A major reason why BrightBytes' Early Warning Module is so much more accurate than other approaches is that predictive models are fitted by historical patterns in your district by school and by grade level, rather than using a one-size-fits-all approach. This means BrightBytes' predictive model explicitly recognizes the fact that the profile of an at-risk third grader is different (and much more nuanced) than that of a typical ninth grader who is at risk of dropping out. The module then provides personalized analysis for each student, grade level, school, and district. BrightBytes also personalizes risk prediction by accounting for the order and relative importance of the indicators that matter most for each school and grade such as attendance, mobility, suspensions, and core academic course grades.

By having an accurate picture of a student's risk trajectory, educators and parents can intervene early, increase referral follow-through, and track progress at the student level to ensure that more students are connected to the services that they need to graduate on time and graduate college and career ready.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

**f) How can growth scores be aggregated and integrated into accountability determinations which may include varied weighting of proficiency results and other indicators of school performance?**

As noted above, growth scores can be aggregated and integrated into accountability determinations by using weighted metrics based on any of the four domains and 24 success indicators in the BrightBytes Early Warning module and by using the module's nine risk levels. Changes in growth can be easily measured through the trends over time feature of the module. Data can be viewed in many combinations of ways. It can be viewed at the state, district, school, and student level and then filtered using many filters including the four domains and 24 success indicators, risk level, grade level, subgroups, and types of schools. Metrics and differentiated metrics resulting in letter grades can then be assigned to any of these indicators and factors as a static item or weighted in terms of change over time.

## 5. Other Technical Considerations

**a) Describe any detailed analyses currently available or could be conducted to support the validity, reliability, and fairness of a proposed system as well as the methodology and validation process for standard setting the overall A-F letter grade determinations. The ADE will model all components for possible inclusion in a final accountability system.**

The Clarity platform translates complex analysis and cutting-edge research into fast actions that drive outcomes. All Clarity modules are built around frameworks based on the top research. BrightBytes Labs, the research engine that drives BrightBytes' statistical analyses, is:

- Powered by a team of statisticians, analysts, financial experts, researchers, thought leaders, and practitioners
- Informed by experts in their fields from world-class research institutions such as MIT, Stanford, Berkeley, Columbia, and UCLA
- Improving student learning and data analytics through analysis, research, thought leadership, and practitioner experience

BrightBytes Labs' researchers comb through hundreds of articles weekly to ensure that the platform includes the most up-to-date and actionable research available. This research is embedded into the platform as a newsfeed, Insights, and data-aligned citations such as Why This Matters. Content experts and researchers read and draw from thousands of research articles annually to distill findings into targeted, platform content that practitioners can immediately put into practice.

BrightBytes also partners with top research organizations to draw on additional expertise in specific subject matters to build its specific modules.

In addition to being built on research frameworks, each module gives users a set of research-based recommended improvements, research behind why each data point matters, and the ability to connect socially with like-minded users.

While intuition and judgment are integral to being an educator, it's crucial that educators also have evidence-based systems derived from research to drive decision making. All BrightBytes

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

modules are created from decades of research on the factors that most impact the specific problem each module helps to solve. Partnering with BrightBytes will ensure that the ADE develops an accountability system based on reliable, fair, and research-driven metrics.

**b) Describe the timeline necessary to produce school accountability ratings which will differentiate and support the variety of public schools and districts within Arizona.**

Not applicable to BrightBytes' response to this RFI.

**c) Describe the level of complexity and ability to replicate the statistical techniques which may be utilized throughout the system to differentiate school performance.**

The BrightBytes Early Warning module will automate the statistical analysis required throughout the accountability system to differentiate school performance.

During the initial data integration, the BrightBytes Data Operation team will work with the ADE to collect the necessary data to run its Early Warning module's predictive algorithm. Once the necessary data is collected, the BrightBytes Data Operations team will explore your data files and translate the values, align your data to the Early Warning module's research framework, and then train the BrightBytes adaptive and predictive algorithm using your data. Data is then loaded into the Clarity platform and provided to your district. Risk predictions will be updated automatically each month using your most current data. To monitor changes over time, and to differentiate school performance, you'll educators simply log into the platform and filter down to the exact metrics as desired. No statistical techniques are required on your end.

**d) Describe any resources related to personnel, data, and/or technology the proposal may require, including any additional resources, data collection, management, and storage needed by the Department.**

The Early Warning module integration will require some personnel resources. The BrightBytes Data Operations team facilitates all aspects of the integration and will stay in close contact with the ADE throughout. A BrightBytes data analyst will be assigned to facilitate each phase of the process. A designated BrightBytes data analyst will schedule and present the technical kick off and a follow-up acquisition call. We'll provide a collaborative timeline and track against the due dates. We are available for questions at any time while the district is working through file generation. Once all data have been transmitted to BrightBytes, we will work to complete all remaining phases and will schedule the verification call once data transformation is complete.

BrightBytes supports collection of data from the SIS or alternative data stores via flat file ingestion over secure file transfer protocol (SFTP). The ADE will need to transmit to BrightBytes via SFTP. BrightBytes provides a comprehensive data integration guide, which includes complete file specifications. You may choose the flat file format: CSV (comma separated values) or TSV (tab separated values).

Once we've completed the initial data integration, and data are "approved" for production during the crosswalk, districts are responsible for uploading new data files monthly, on a schedule determined by BrightBytes. BrightBytes uses that data to generate updated predictions in the Clarity platform, also on a monthly basis. Each of these monthly cycles are referred to as a "data refresh."

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

The predictive models will be re-trained bi-annually to capture the significant changes that occur in the middle and at the end of each school year.

All **other** BrightBytes modules use questionnaire based data. It does not require any work from your technical team to implement these modules.

With all modules, BrightBytes support team will ensure your team knows how to use the Clarity platform and interpret its data to use it as one of its most powerful tools to improve student achievement. A designated Client Services Manager will guide your team through pre-collection and post-collection activities to ensure success.

- e) **Please highlight any significant deviations from previous practice or changes to operational definitions currently utilized within Arizona's system of holding schools accountable.**  
Not applicable to BrightBytes' response to this RFI.

**BrightBytes considers information on this page to be proprietary and confidential. The disclosure of this information would put BrightBytes at a competitive disadvantage.**

	<h2>Request for Information</h2>	<b>State of Arizona Department of Education</b> 1535 W. Jefferson Street Phoenix, AZ 85007
RFI No.: ADED16-0002 Description: <b>Arizona School Accountability Components &amp; System</b>		

**PLEASE COMPLETE THIS FORM AND SUBMIT THE COMPLETED FORM WITH YOUR RESPONSE TO THE RFI.**

I/We BrightBytes the undersigned, do hereby submit this response for information with regard to Arizona's Statewide School Accountability System in accordance with ARS §41-2555 Request for Information specification contained herein.

Elka Chamberlin   
\_\_\_\_\_  
Name

7/15/16  
\_\_\_\_\_  
Date

BrightBytes  
\_\_\_\_\_  
Company Name

Senior Manager, Strategic Initiatives  
\_\_\_\_\_  
Title

490 2<sup>nd</sup> Street, Suite 302 San Francisco, CA 94017  
\_\_\_\_\_  
Address

503-310-5896  
\_\_\_\_\_  
Telephone Number