

HB 4295 terminated funding for School Innovation Zones and Local Solution Dropout Prevention and Recovery Innovation Zones, and added a new Act, the *Innovation in Education Act*.

WVBE Policy 3236 implements the *Innovation in Education Act*, and effectuates the replacement of the repealed WVBE Policy 3236, *Education Innovation Zones*.

WVBE Policy 3236 offers the opportunity for special funding to encourage and incentivize public schools to improve overall student outcomes through the implementation of key innovational priorities for improving education in the following area:

- science, technology, engineering, and mathematics (STEM),
- community school partnership,
- entrepreneurship,
- career pathways, and
- the arts.

2016-2017 Innovation in Education Timeline

September	Intent to Apply Application distributed, September 1st Selection Committee meeting for application and rubric development continued
October	Intent to Apply Application due by 4 PM, October 1st Policy 3236 goes to WVBE for approval <i>Innovation in Education</i> full application and rubric approval <i>Innovation in Education</i> website updated; technical assistance provided
November	Request for Proposal (RFP) and technical assistance release date, November 1st <i>Innovation in Education</i> website updated; technical assistance provided
December	RFP due by 4 PM, December 1st Selection Committee review of RFP
January	Selection Committee recommendations go to the WVBE Innovation in Education awards announced Grant awards distributed Annual Progress Report prepared and submitted to Legislative Oversight Commission on Education Accountability (LOCEA)

Innovation in Education (IE) Development Committee

The IE Development Committee consists of experts in the fields of science, technology, engineering, and mathematics (STEM), community school partnership, entrepreneurship, career pathways, and the arts. The IE Development Committee developed the application and scoring rubric for the IE RFP.

IE Application/Rubric Development Committee (September 8-9 and 21)

Name	Area of Expertise
Ray Lowther	Arts
Cindy Burke	Math
Robin Sizemore	Science
Allegra Kazemzadeh	Entrepreneurship
Dan Blackwood	CTE
Alyssa Keedy	STEM
Michelle Blatt	School Effectiveness
Susan Beck	Special Ed
Justin Boggs	School Community Partnership
Becky Butler	Technology
Karissa Poszywak	STEM
Pat Johnson	Adult Ed
Amelia Courts	The Ed Alliance

IE Review Committee

The IE Review Committee meets in December and as needed afterwards to review submitted applications in order to make recommendations to the WVBE.

IE Review Committee (December 7-8, 2016)

Name:	Representing:
Dale Lee	WVEA President
Tega McGuffin	AFT-WV Representative
William White	WVBOE
Michele Blatt	WVDE Chief Acct. & Performance Officer
Monica DellaMea	WVDE Exe Director, Office of Early Learning
Betty J Jordan	WVDE Ex Asst, Office of Superintendent
Alyssa Keedy	Governor's Office
Neil Reger	Upshur County Teacher
Paula Lucas	Marshall University, Assessment & Program Review
Josh Ratliff	WVDE Coordinator, Office of Technology Integration & Support
Renee Margocee	Director of Arts, Cultural Center
Betty King	WV Symphony
Sherri Nash	Exe Director, Office of Innovation, Perkins, & Technical Support
Dr. Carolyn Stuart	Director of Minority Affairs
Pat Homberg	Exe Director, Office of Special Education
Vaughn Rhudy	Exe Director, Office of Assessment
Mary Ann Triplett	Clay County Curriculum Facilitator
Kennetha Parker-Howes	Webster County Principal
Angie Turkleson	AFT-WV Ex Bd Member Putnam Rep
Adena Barnette	Jackson County Teacher and WVEA Representative

The following applications were submitted and reviewed by the IE Review Committee

School	County	Area of Emphasis	Additional Area(s) of Emphasis	
Cross Lanes Elementary	Kanawha	STEM	ART	
Nitro High School	Kanawha	STEM	ART	
Richmond Elementary	Kanawha	STEM	ART	
Blackshere Elementary School	Marion	STEM	CSP	
Welch Elementary School	McDowell	CSP		
Pleasant Hill School	Calhoun	CSP		
Grandview Elementary School	Kanawha	CSP		
Explorer Academy	Cabell	CSP		
Cherry River Elementary	Nicholas	CSP		
Braxton County High School	Braxton	CSP		
Mary Ingles Elementary	Kanawha	CSP	STEM	
Walton Elementary Middle School	Roane	CSP	STEM	
Capital High School	Kanawha	CSP	STEM	CP
South Charleston High School	Kanawha	CSP	STEM	CP
Nicholas County Career and Technical Center	Nicholas	STEM	CSP	CP
WV School for Deaf and Blind	Hampshire	STEM	CSP	CP
Van Elementary School	Boone	STEM	CSP	CP
Mary C Snow West Side Elementary	Kanawha	CSP	STEM	
Stonewall Jackson Middle School	Kanawha	CSP	STEM	
Calhoun Middle-High School	Calhoun	CSP	ENT	
Ripley Middle School	Jackson	STEM		
Philip Barbour High School	Barbour	STEM		
Hurricane High School	Putnam	STEM		
Lincoln County High School	Lincoln	STEM		
Andrew Jackson Middle School	Kanawha	STEM		
Fort Gay PreK-8	Wayne	STEM		
Tucker County Schools	Tucker	STEM	ENT	
Oak Glen High School	Hancock	STEM	CSP	ENT
Spring Mills High School	Berkeley	STEM	CSP	
Greenbrier East High School	Greenbrier	STEM	CSP	
Pocahontas County High School	Pocahontas	STEM	CSP	
Point Harmony Elementary School	Kanawha	STEM	CSP	
Wirt County Middle School	Wirt	STEM	CSP	
Musselman High School	Berkeley	CP	CSP	
John Adams Middle	Kanawha	CP	STEM	
Oak Glen Middle School	Hancock	CP	STEM	
Brooke CTE	Brooke	CP	STEM	
Buckhannon-Upshur High School	Upshur	CP		
George Washington High School	Kanawha	STEM	CP	
Summers County High School	Summers	STEM	CP	

2017 Innovation in Education Grant Recommendations

School	County	Designated Area of Focus	Policy Exception(s)	Changes/Clarification Needed	Justification/Summary	Amount Funded
<p>Oak Glen Middle School</p> <p>West Virginia School Report Card: B</p>	Hancock	<p><u>Primary</u> Career Pathways <u>Additional</u> STEM</p>	None	NA	<p>Oak Glen Middle School plans to include in its Project Open Road teacher training in Project Based Learning (PBLs) by the Buck Institute. Students will then explore career pathways through participation in PBL experiences where they write resumes and apply for jobs of interest. Students will participate in a hiring process and work with local professionals for an authentic learning process.</p>	\$300,000.00
<p>George Washington High School</p> <p>West Virginia School Report Card: A</p>	Kanawha	<p><u>Primary</u> STEM <u>Additional</u> Career Pathways</p>	<p>Local County Embedded Credit Policy 137. Articles 37.01, 37.02, 37.04, 37.05, 37.06</p> <p>All freshman will be required to take Defined STEM. Students will be exposed to a variety of STEM activities, experiences and speakers throughout their freshman year. Each experience will allow students the opportunity to expand their STEM experience while earning a KCS Technology credit.</p> <p>The DEFINE STEM curriculum enhances the use of technology in the classroom. Each student will use his/her iPad to leverage the learning experience.</p>	Local level approval needed for exception to Kanawha County Schools Policy.	<p>In an effort to become a high performing, 21st century STEM high school, GWHS will require all incoming freshman to take a foundational course, Intro to STEM. Modifications to the current library will transform the space into a multi-media collaboration and fabrication space; learning hubs will provide private space for small group work. Technology will be a key component in ensuring the successful transition to a model STEM school. The use of websites such as Web-Assign and MathXL will be used to monitor student progress toward mastery of course objectives in math, physics and chemistry. Engineering courses will use Tinkercard to design two and three dimensional programming robotic equipment. VEX robotics will also be incorporated. Community partners will promote the STEM curriculum.</p>	\$190,491.30

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School	County	Designated Area of Focus	Policy Exception(s)	Changes/Clarification Needed	Justification/Summary	Amount Funded
<p>Welch Elementary School</p> <p>West Virginia School Report Card: D</p>	McDowell	Primary Community School Partnership	<p>Use of School Facilities/Property Policy 3-001; Use of Facilities Application Required; Fees; Personnel Assignments.</p> <p>Participation in the activities is necessary after hours to insure success of the programs included in the initiative.</p>	Local level decision on exception to waive facilities fee.	WES plans to increase student achievement, improve the climate and culture of the school and improve the relationship between home and school through the development of an effective community school. WES plans to address all pillars of the Community Schools Model so that opportunities such as health and social support through school-based dental services, medical services and mental health services can be established. WES plans to integrate technology, school gardening projects and after school enrichment opportunities with a focus on the arts, physical activity and sciences to engage student. Strengthening families is another benefit of this Community School Partnership.	<p>Planning Grant 22.5% of requested \$300,000.00</p> <p>Amount Funded \$67,500.00</p>
<p>Grandview Elementary</p> <p>West Virginia School Report Card: C</p>	Kanawha	Primary Community School Partnership	<p>NA 18-2a-1 et seq; State Board Policy 2445.4, Revision Number 6</p> <p>Grandview will use EL Education framework in all subject areas.</p> <p>County Textbooks not being used.</p> <p>Grandview is using the EL framework, which is derived from the best practices of the Harvard Graduate School of Education and Outward Bound, along with supporting text (ex. Engage NY) as our curriculum, as opposed to typical county adopted curriculum and text.</p>	Full waiver procedure showing alignment of utilized materials not on approved state multiple list of instructional materials is needed.	Grandview Elementary plans to transform both students' lives and the community as it incorporates a functioning community garden with help from local farmers, gardeners, and dietitians to provide fresh food and promote healthy eating projects. Collaborating with local experts like foresters and recreation specialists to develop a community wellness trail will assist physical and mental health. Cultivating community connections and adjusting instructional time to assist in achieving an effective Community School Partnership are also in the plan.	<p>Planning Grant 22.5% of requested \$107,170.00</p> <p>Amount Funded \$24,113.25</p>

2017 Innovation in Education Grant Recommendations

School	County	Designated Area of Focus	Policy Exception(s)	Changes/Clarification Needed	Justification/Summary	Amount Funded
			<p>West Virginia 18 A-5-2</p> <p>Grandview Elementary is requesting the ability to dismiss before regular hours twice a month in order to plan for interventions, expeditions, celebration of learnings, student-led conferences, case studies and professional development</p> <p>The policy says that no school will be dismissed before regular hours. We are requesting to release early two times a month.</p>	<p>Early release is a local level decision that will not be exempt from the required 180 days of instruction. This exception would not be approved during the planning grant.</p>		
<p>Richmond Elementary</p> <p>West Virginia School Report Card: C</p>	Kanawha	<p><u>Primary</u> STEM <u>Additional</u> Community School Partnership Arts</p>	<p>WV Code 3234 11.2.b.1</p> <p>RE would like to use their paid professional development days to provide staff and community members with school decided pd rather than county mandated.</p> <p>Once a month, RE is provided an early release day in which teachers are provided professional</p>	<p>This exception is a local level decision.</p>	<p>RE plans to engage students/teachers/community in their “City Planning 2040”. The project to identify, compare, classify and explain our living and designed worlds that make up their city. They will use multiple technology tools and use the engineering design process to create their buildings from beginning to end. They will explore the functionality of their city design and factor mathematics into the project when they calculate the costs of the materials and funds needed to build their city. Flexible seating and classrooms will be a major consideration as students work collaboratively as teams of individually to achieve their goals.</p>	<p>Planning Grant 22.5% of requested \$180,975.00</p> <p>Amount Funded \$40,719.38</p>

2017 Innovation in Education Grant Recommendations

School	County	Designated Area of Focus	Policy Exception(s)	Changes/Clarification Needed	Justification/Summary	Amount Funded
			<p>development that has been provided from the county initiatives. RE would like to use these days as professional development that is decided on and prepared on the school level. We would like to provide outside of the school learning opportunities such as visiting other schools, guest speakers or field trips that are focused on STEM and PBL activities.</p> <p>This exception is necessary in order to provide all stake holders with the experience that RE would like for students to be given. RE will use professional development time for more rigorous and school-specific professional development.</p> <p>This initiative will provide not only staff, but families and community members the opportunity to experience the things that RE wants to provide for students.</p>	<p>Early release is a local level decision that will not be exempt from the required 180 days of instruction. This exception would not be approved during the planning grant.</p>		

2017 Innovation in Education Grant Recommendations

School	County	Designated Area of Focus	Policy Exception(s)	Changes/Clarification Needed	Justification/Summary	Amount Funded
			This will help create a culture that promotes STEM and PBL in and out of the school setting.			
Van Elementary School West Virginia School Report Card: B	Boone	<u>Primary STEM</u> <u>Additional Community School Partnership Career Pathways</u>	None	NA	In close collaboration with community leaders, PreK-12 educators, counselors, higher education professionals, central office staff and RESA 3, Van Elementary will implement a program aimed toward growing college and career readiness through an intensive STEM approach and increased community and parent involvement. Climbing UP! will provide students with continual opportunities for career exploration beginning at the elementary level. Each year, students will add to their repertoire new STEM related skills that will enhance their secondary and post-secondary experiences. This program will join with Van Jr. Sr. High school in efforts to increase graduation rate, dual credit opportunities and attendance rates already in place.	Planning Grant 22.5% of requested \$296,500.00 Amount Funded \$66,712.50
Fort Gay PreK-8 West Virginia School Report Card: D	Wayne	<u>Primary STEM</u>	None	NA	Fort Gay PreK-8 hopes to utilize Project Lead the Way (PLTW) curriculums for Launch and Gateway to give students an opportunity to work in a challenging environment that will develop a strong STEM foundation. The central focus of PLTW modules is to utilize a design process to solve problems. This develops and reinforces a problem solving process that can be used in all disciplines. Teachers will receive professional development using the Mathematics Studio Program.	Planning Grant 22.5% of requested \$250,647.00 Amount Funded \$56,395.58
Total						\$1,652,522.00

2017 Innovation in Education Award Recommendations

School: Oak Glen Middle School

Award: \$300,000.00

County: Hancock

Lead Administrator: Virginia Greene

Grant Contact: Andrea Dunlaney

Summary:

American poet Walt Whitman (1900) writes, "Afoot and light-hearted I take to the open road, / Healthy, free, the world before me, / The long brown path before me leading wherever I choose." With its name derived from these words, Project Open Road, conceived by Oak Glen Middle School in Hancock County, celebrates life's choices journeys. With the world ever more competitive and challenging, this project will equip students with cognitive and non-cognitive skills needed for success. As envisioned, Project Open Road employs engaging processes for dropout prevention and targeted school improvement through career exploration and deeper learning models.

Hancock, the northernmost county in WV, is uniquely situated between Ohio and Pennsylvania. Both states are easier to access than the entirety of WV. Due to this geographical oddity, Hancock competes with Ohio and Pennsylvania for students, resources and highly-qualified teachers. To address this, Project Open Road will innovate through instructional delivery to position itself as the most forward-looking school in the region. The IZ grant will be divided into three distinct phases: implement, enhance and sustain. The crux of the grant is devoted to investing in people, not programs. The tenets of this project will make learning relevant, increase student voice and choice, collaborate with stakeholders and focus on learning processes. When students exit middle school, they will have a realistic plan and will possess cognitive and non-cognitive skills needed for success.

Research shows middle school is pivotal for students, a period when attitudes about school are solidified and students begin to conceptualize their future; therefore, middle schools have a moral imperative to foster positive school experience before any notion of school exit incubates. To accomplish this, discerning root causes for dropping out is needed. There are predictors presents during middle school that indicate a high propensity for dropping out such as poor attendance, retention, course failure, disengagement from school and behavior referrals. Project Open Road has constructs to address these factors by using attendance incentives; employing grading practices based on "what" grades that focus on proficiency and "how" grades that focus on non-cognitive skills like responsibility; developing student-drive academically-oriented extracurricular opportunities; incorporation project based learning to make meaningful and authentic; and developing a compassionate culture by employing restorative justice principles into discipline practices. Addressing these factors is important to prevent at-risk students from departing school, but it is equally imperative to provide meaningful experiences for all students to engage in challenging learning activities.

Research shows cognitive skills such as content knowledge, thinking and reasoning skills are as vital to student success as are non-cognitive skills such as resilience, motivation and interaction Project Open Road focuses on development of all these skills in concert through PBL. All OGMS teacher will be trained by the Buck Institute to plan, develop, and execute PBLs. Through project based learning, OGMS will become a microcosm of society by focusing on careers comprising the economic sectors. In early stages, students will be introduced to job seeking and interviewing. Resume and letter writing will be taught in the regular classroom so every student is equipped with a resume to apply for jobs of interest. Community members and teachers will conduct the staffing and selection procedures. Students will receive letters of hire from a panel informing them of the variety of careers each student will explore. While this process will have a competitive component, no student will be dissuaded from participating in any career option. Once hired, they will begin training to develop required competencies. Teachers, now trained in PBLs, will create real-world projects to address issues facing their economic sector. Teachers will facilitate career training and education who will collaborate with local professionals. Not only will student be introduced to the careers for which they were hired, but they will also collaborate with local

2017 Innovation in Education Award Recommendations

professionals to ensure they meet the authentic needs of the profession. Every PBL will culminate in public presentations for parents, community members, and business leaders on “Solution Nights”. In early stages of the project, two PBLs will be executed each year. This will increase as proficiency increases. With the open road before them, our students will have the knowledge, skills and abilities to navigate their paths with confidence and, most importantly, with self-reliance through the world awaiting them.

At its core, Project Open Road will function as a mechanism to reduce and prevent future dropouts by providing real contexts for learning, but the project will also have an additional focus on STEM. Through career exploration, Project Open Road will incorporate innovation in all learning activities through STEM-inspired habits of mind such as encouraging curiosity, facilitating cross-pollinated classrooms for interdisciplinary collaboration, training for increased competency in quantitative analysis methods, teaching effective questioning strategies and developing interpersonal communication skills. These cultivated mental habits will transform any discipline, any classroom into a STEM experience.

Project Open Road envisions intensive professional development for teachers to develop these highly important STEM habits of mind. It is not good enough simply to provide technology, supplies and materials; instead, it is imperative to shift the pedagogy of teachers to employ STEM dispositions regularly in every discipline. In addition, Project Open Road will create and maintain a school makerspace so any discipline or project based learning experience can engage in creative, artistic application of inquiry and innovation. Making, learning, exploring and sharing will become a central focus of the entire curriculum. By providing a common thread for all teachers, Project Open Road will accomplish West Virginia’s noble goal of “One Voice. One Focus. All Students Achieving.”

2017 Innovation in Education Award Recommendations

School: George Washington High School

Award: \$190,491.30

County: Kanawha

Lead Administrator: Dr. George Aulenbacher

Grant Contact: Kelly Massinople

Summary:

George Washington High School (GWHS) seeks innovation funding to continue implementation of our mission to become a high performing, 21st century STEM high school. Beginning stages of planning and implementation of new programs will include a focus on new course offerings, enhanced community partnerships, and investment in technology to support STEM education, transition of building spaces, and professional development in STEM pedagogy for teachers. Over time the program will be vertically aligned with John Adams Middle School to familiarize students with the content, tasks, and pedagogy they will encounter at GWHS. It is our ultimate vision all students will have the opportunity to pursue one of several STEM career pathways, each leading to a GWHS STEM diploma. All student graduating with a STEM diploma will be prepared to meet the challenges of a changing work force, will have work experience or research in STEM specific fields, as well as advanced certifications (through career and technical education – CTE completers) or post-secondary college credit (through dual-enrollment courses and/or AP credit).

A transition to STEM programming will precipitate additional course offerings. The foundation course, Intro to STEM (new 2016-2017), is required of all incoming freshman. This is a trans-disciplinary course, taught by teachers from the math, science, technology, English, and fine arts departments. Students enrolled in the course follow a three-week rotation in STEM immersions in which teachers act as facilitators, engaging students to design solutions to relevant problems within STEM fields. The fields studied will include, but are not limited to, 3D printing, Eco-friendly construction, solar energy, water quality testing, drone technology, and hydroponics. At the end of each school year, a course fair will promote STEM career pathways (described on the following page) and highlight additional elective STEM courses. Teachers teaching the Intro to STEM course will engage in ongoing professional development in STEM pedagogy, and will act as experts as additional courses are integrated into STEM course offerings.

A shift in pedagogy with a focus on standards-based, mastery learning will be the cornerstone of STEM programming. Mastery of early mathematics courses is essential for students pursuing STEM fields. Teachers will collaborate to build benchmarks, mid-year and end of course common assessments, which measure student mastery of WV College and Career Readiness objectives. Teachers will use Math XL, an online personalized instruction program, as a way to assess and provide remediation for students as they work toward mastery of standards. Flexible scheduling will ensure all students have the opportunity to receive interventions and remediation.

Modifications to the current library will transform the space into a multi-media collaboration and fabrication space; learning hubs will provide private space for students and teachers to work in small groups. The hubs will be equipped with computers and presentation technology to facilitate sharing of ideas. The fabrication space will provide the space and tools teachers and students can use to explore, design, experiment, and build their solutions to problems. Professional development on the safe and effective use of the equipment will be provided to a multi-disciplinary group of teachers who will act as makerspace facilitators.

Technology will be a key component in ensuring the successful transition to a model STEM school. The use of the websites such as Web-Assign and Math XL will be used to monitor student progress toward mastery of course objectives in math, physics, and chemistry. Engineering courses will use Tinkercad to design two and three-dimensional solutions to problems. Robotc and Arduino will be utilized in teaching computer science techniques essential to programming robotic equipment and circuit boards. VEX Robotics products will be used in Robotics courses, which promotes increased student engagement, with an emphasis on teamwork. Finally a

2017 Innovation in Education Award Recommendations

mobile computer science lab will accommodate the increasing number of students requesting computer science courses.

Community partners promote post-secondary STEM opportunities for students through a monthly speaker series and through career and post-secondary education fairs held bi-annually. These partners include but are not limited to American Water, Columbia Gas, Columbia Pipeline, DOW, Eastern American Energy, Energy Corporation of America, Manpower, MATRIC, Toyota, Walker Machinery, the WV DEP, WV DOH, and the WV National Guard. These partners will provide students the opportunity to complete work-based experiences in pursuit of GWHS STEM diploma.

Innovation funding will allow GWHS to better prepare students for the challenges of the 21st century. The proposed changes will transform teaching and learning to a modern, research-driven model. Increased use of technology will mirror society and the changing workplace, and provide students the opportunity to master a variety of platforms and programs. The faculty, administration, community partners, students, and families all endorse this proposal. With the Innovation funding, GWHS will transition from a traditional high school to a STEM high school capable of providing students the tools and skill necessary to succeed as the next generation of workers.

A STEM leadership team, made of math and science teachers, administrators, and school counselors has established three initial career pathways, each leading to a STEM diploma. The initial pathways are Technical Sciences, Computer Science, and Natural Sciences. All students graduation with a STEM diploma will be prepared to meet the challenges of a changing work force, have experience or research in STEM specific fields, as well as advanced certifications (through career and technical education – CTE completers) or post-secondary college credit (through dual-enrollment course and/or AP credit). The initial course in all pathways to the Intro to STEM course, and upon completion of this course, students will have the opportunity to enroll in one of the pathways with defined courses for 10th through 12th grades. Each of the pathways is unique and is designed to prepare students for further post-secondary study in a STEM field and/or work towards or completion of certificates in STEM fields.

The Technical Science pathway includes the four-year course sequence Innovations in Science and Technology. Innovations in Science and Technology is a part of the Advances Careers curriculum written by the Southern Regional Education Board (SREB). The Advanced Career coursework provides a rigorous and relevant blend of technical and academic skills applied to authentic projects. The first course, The Nature of Science and Technology, will be available for sophomores beginning in the fall of 2017. The course is a contextual-based course that introduces students to the core fundamental concepts of science and technology through authentic projects. The four course sequence will introduce students to equipment and procedures commonly used in the scientific and technical workplace. Students may take any of the four courses as stand-alone elective courses, or the entire sequence as a CTE Program of Study (POS). Completion of the pathway will include independent research or an internship with a partnering industry.

The new AP Computer Science Principles course, in conjunction with Honors Computer Science 1 (Intro to Java Programming), AP Computer Science A, and Honors Advanced Programming (Data Structures and Other Languages) will provide a CTE POS option for students pursuing the Computer Science pathway. Simulated Workplace, which implements workplace protocols that align with the changing workplace requirements in West Virginia, will be the organizational structure for a least one of these course options. Simulated Workplace will assist students in developing the skills and attitudes necessary for success in the job market. Culmination of the Computer Science pathway will include an internship or IT Academy work. Completion of the IT Academy through Microsoft provides students with programming certificates.

2017 Innovation in Education Award Recommendations

The Natural Science Pathway has been designed for students interested in post-secondary study within the field of healthcare or one of the pure sciences (example Biology, Chemistry, Physics, etc.). Sequencing of coursework will be tailored specifically to the students' individual interest. Coursework will include a minimum of four math courses, four lab-based science courses at the Honors, College or AP level, and an additional three math or science courses. An emphasis will be placed on AP and dual-enrollment college-courses, so students have the opportunity to earn college credit for coursework. Students will have the opportunity to complete independent research or will enroll in AP Capstone's Seminar and Research courses to round out requirement for completing the Natural Sciences Pathway. Independent research will be facilitated through a partnership with West Virginia State University.

The addition of career pathways to GWHS's STEM program enhances the student experience, by providing work-lace experience, research opportunities, as well as the completion of advance coursework. Pre and post surveys will be used to gauge student interest in pathways and will be used to refine existing pathways and in the development of additional pathways over time. The Intro to STEM course will be the gateway course into choosing one of the pathways. Partnerships and collaboration with post-secondary universities and technical colleges will ensure vertical alignment of the pathway with post-secondary study or workplace expectations.

2017 Innovation in Education Planning Grants

School: Welch Elementary School
County: McDowell
Lead Administrator: Kristy Ann East

Award: \$67,500
Grant Contact: Kristy Ann East

Summary:

Vision: Welch Elementary School seeks to comprehensively address three focus areas daily. The areas we target are to increase student achievement, to improve the climate and culture of the school, and to improve the relationship between home and school. Each of our focus areas is critical to the development of an effective community school by establishing a community of healthy and empowered learners and providing opportunities and resources that will engage students, teachers, and families using the Community Schools Model. We strive to be a driving force in our community by changing the mindset of our students and families from despair to hope by creating opportunities for growth as individuals and as a community. We want to create sustainable processes that will allow our students to become self-reliant while also being able to communicate and collaborate with others in order to become productive citizens as they move through our education system and into the workforce and broader reaches of society. Additionally, by instilling these values and teaching these processes to our students, families and community members are also affected. Implementation of the community schools model provides a proactive approach to reaching students that the traditional model of education fails. The solution-focused approach lends itself to creating student success and therefore contributing to increased attendance and graduation rate of students.

Goals: We want to support student achievement by addressing all pillars of the Community Schools Model as they are often interconnected and critical to the growth and development of our school and our community. As the hub of our community, we want to strengthen the relationships we already have and build new relationships to carry into the future by addressing our needs through establishing a strong foundation and building upon the existing infrastructure of the Community Schools Model at Welch Elementary School to provide these opportunities for our students, families, and community members.

Activities: These opportunities include providing a multitude of services such as health and social support through school-based dental services, medical services, and mental health services. This provides basic human needs to be met in order for students to continue to learn. Integration of technology, school gardening projects, and afterschool enrichment opportunities with a focus on the arts, physical activity, and sciences are needed in order to engage students to foster a love of learning both inside and outside of the classroom. This leads to an increase in the value of education by the student and family which can be instilled for generations. This value for education must start in the home and continue through early childhood development opportunities. Just as fostering a love of learning and instilling a value for education is critical to our youngest learners, it is also important to our students and families as they grow older. As a community school, Welch Elementary seeks to partner with agencies to provide courses and certification to assist adults with post-secondary training and support agencies to provide courses and certification to assist adults with post-secondary training and support.

Key Features for Student Success: As the school becomes the focal point of the community, opportunities for family and community engagement increase. In order for the community school to be truly effective, the school team will work with stakeholders such as businesses, faith-based agencies, and non-profit organizations to ensure we are utilizing the community assets to the fullest potential in order for all stakeholders to receive the maximum benefit. Establishing a community school through the use of the community school model affords our students the opportunity to learn, grow, and build their community from the inside out for the benefit of all.

2017 Innovation in Education Planning Grants

School: Grandview Elementary School **Award:** \$24,113.25
County: Kanawha
Lead Administrator: Sharon Brooks **Grant Contact:** Kayla Kinney

Summary:

Grandview Elementary

Through the innovation Zone Grant, Grandview Elementary will become a school where the classroom and curricula extends to the community it surrounds, while the community becomes stewards of the curriculum. The community garden, nature trail, community-based curricula, and increased instructional time will be the focus of our Community School. By becoming a Community School, we will increase intrinsic student motivation that will lead to an improvement of state assessment scores. Student motivation surveys will be given throughout the year to assess the impact of their own learning and whether or not their learning has effect on the community. We will also be able to submit work to the Models of Excellence site, a nationally curated gallery of high quality student work and can be found at the following web address <http://modelsofexcellence.education.org/>.

Grandview Elementary has begun the process of transforming both students' lives and the community it serves by taking on the EL Education (formerly Expeditionary Learning) model, which is derived for the best practices of the Harvard Graduate School of Education and Outward Bound. For the past two years, the core practices EL have facilitated Grandview students to engage in deeper learning that extends outside of the classroom walls, Grandview teachers to partake in intense professional development across the country, and the Grandview community to embrace the multifarious new activities hosted by the school. Examples that evidence the transformation of Grandview's instruction and culture are as follows:

- 1) Dramatic increase in students' high-order thinking and engagement scores from district/state representatives.
- 2) Requests from other schools across the district to visit in order to learn from the school as a model of innovation and community-bridging best practices.
- 3) Both quantitative and qualitative data representing students' culture- and character-based contributions.
- 4) Markedly increased family participation and positive feedback.

If Grandview Elementary were selected for the Innovation Zone Grant, we will be able to deepen our impact by taking on the following goals:

- 1) Incorporate a functioning community garden with help from local farmers, gardeners, and dietitians where fresh food will be provided to families via local farmers' market paired with student-created informative healthy eating projects.
- 2) Collaborate with local experts like foresters and recreation specialists to develop a community wellness trail (with both fitness and the natural world themes) in the wilderness behind the school to promote physical and mental health.
- 3) Cultivate community connections to local experts and service learning that will be infused in community based curricula, as well as fostering a health and wellness environment.
- 4) Adjust instructional time to allow two-hour early dismissal twice a month, allotting time for staff to take on the new learning and curricula collaboration needed to implement our health, wellness, and academic goals.

The Innovation Zone Grant would open many doors, allowing Grandview Elementary to "continue creating the change we seek at our school and inspire other visiting schools to bring back innovative ideas to their own settings" (Kindergarten teacher).

2017 Innovation in Education Planning Grants

School: Richmond Elementary

Award: \$40,719.38

County: Kanawha

Lead Administrator: Jordan McBride

Grant Contact:

Brittany Smith

Summary:

The students, staff, and community members of Richmond Elementary school are committed to creating a learning environment that is highly engaging and gets students excited about learning every day. In order to do this, we want to implement project based learning with a focus on STEAM.

One example of how we will begin PBL and STEAM will be titled, "City Planning 2040." All students will be given the task of designing a city that they will live in for the year 2040. Each grade level will complete the activity on their level of learning and understanding. In the intermediate grades, student will reach out to gain insight from state and local organizations, such as the West Virginia Division of Highways, City of South Charleston, and South Charleston Chamber of Commerce to determine the process of how various businesses get started in our city. Students will then communicate with city entities about roads, utilities, landscaping, etc. in order to create a city design. Once the design is created, technology will be used to build a city that is equipped to sustain and thrive in the year 2040. Upon completion of the city design, a 3D printer will be used to print designs that will be presented to the city members for selection of the most efficient city development model. STEAM will look like: S-Students will have to identify, compare, classify and explain our living and designed worlds that make up their city. The inquiry-based program of study blends science and 21st century skills and provides students opportunities to demonstrate scientific literacy in the field of life science and physical science. By engaging in active inquiries, investigations, and hands-on activities throughout the instructional day, students will focus on the major themes of science, which consists of systems, changes, and models in order to develop conceptual understanding and research skills as described in the objectives.

T – Multiple technology tools will be used for gathering information in order to solve problems, make informed decisions, and present and justify the solutions. The students will formulate a plan and use technology tools and multiple media sources to compare and analyze information in order to solve real-world problems.

E – The Engineering Design Process will help create their building from beginning to end. The design process will include the following steps: Ask, Imagine, Plan, Create, Improve. With these steps, students will create full scale models of their buildings while being able to test, redesign, and improve. Students will be able to define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

A – Students will be required to design their city by creating multiple models of their design. Students will learn how to differentiate between certain types of models, materials and designs. Students will practice building their city multiple ways to determine if their plan or design is actually feasible. By creating multiple drawings, designs, and models students have the ability to self-assess their work and make any necessary changes or adjustments as needed. Also, students will determine how the cost of materials will affect their design, providing students with the idea that not all cities are built brand new. Cities require a combination of old and new materials to make one.

M – Mathematics will factor into building a city financially. Students will learn how budgets, tax payer money, and grants are allocated to state and local authorities. Students will learn about the contracting process and how to submit bids to receive funding. Students will be challenged with limited funds, opposition of the city or state, and they will apply this to their design.

2017 Innovation in Education Planning Grants

With these types of activities, students will be exposed to a variety of college and career opportunities while getting them connected to their city through real-world situations.

Project based learning with an emphasis on STEAM requires staff and students to transition from traditional to innovative thinking when it comes to classroom educational experiences. Why would we want to change the way that we teach students and not change the vision of the classroom learning environment? If our vision is to change the way students learn, then our vision must include providing students a different vision of how they learn. We want classrooms to be designed how the students and teachers see fits their vision best. We want to have places where students can be comfortable in their learning with things such as couches, blow up chairs, or big rugs with throw pillows. Wiggle seats or exercise balls are a great seating option for students that need movement to stay focused. These seats can be used in lieu of regular seating so that students can stay focused on a task without disrupting others. We want students to have work spaces where they can spread out and allow room for their imagination and creativity to blossom.

With that in mind, flexible seating areas in classrooms would enhance this project by allowing students the opportunity to choose what kind of learning space works best for them. Flexible classrooms give students a choice in what atmosphere best supports their type of learning while allowing them the opportunity to work collaboratively with their peers, engage in critical thinking and communicate. Research shows that students' grades are better, they are happier and are participating in more invigorating conversations. We would like the opportunity to provide every classroom with a flexible seating area including alternative seating options that can be moved around to create flexible collaborative workspaces. These spaces would be adorned with brightly colored rugs and pillows with dry erase walls that can be used as a work space.

In these areas, students will be able to work in teams or individually on a variety of activities. This sort of classroom design supports a more modern learning experience in which students complete active, innovative, hands-on projects. This allows students to be fully engaged in their learning experience rather than just being passive listeners.

2017 Innovation in Education Planning Grants

School: Van Elementary School

Award: \$66,712.50

County: Boone

Lead Administrator: Pam Campbell

Grant Contact:

Amanda Turner

Summary:

In close collaboration with community leaders, PreK-12 educators, counselors, higher education professionals, central office staff and RESA 3, Van Elementary will implement a program aimed toward growing college and career readiness through an intensive STEM approach and increase community and parent involvement. Climbing UP! will provide students with continual opportunities for career exploration beginning at the elementary level. Each year, students will add to their repertoire new STEM related skills that will enhance their secondary and post-secondary experiences. This program will join with Van Jr. Sr. High School in efforts to increase graduation rate, due credit opportunities and attendance rate already in place. Our feeder system, community, and ultimately local economy will be strengthened by the implementation of project based STEM curriculum throughout all grades. Implementation of the Climbing UP! project will begin with the used of Defined STEM. Defined STEM is an online standards based curriculum that provides teachers and students with lessons that are cross curricular, engaging and accentuate the elements of science, technology, engineering and math. Defined STEM follows the Understanding by Design principles to develop and deepen student understanding through authentic performance tasks, literacy components and constructed response opportunities. Climbing UP! will allow for utilization of Defined STEM in all grade levels K-12 as well as provide professional development necessary for successful implementation. We believe that this will allow for a fluid transition from the elementary level to the secondary level. In order to integrate and implement STEM related topics successfully, we believe that involving and educating parents and community will enhance student achievement. Research shows time and time again the positive correlation between parent involvement and student achievement. When parents play an active role in their child's education, their children achieve greater success as learners, regardless of socioeconomic status, ethnic/racial background, or the parents' own level of education (Pate and Andrews 2006). By including parents, additional family members, and community member in Climbing Up! we will ensure that our students' learning will be accelerated and connected to their home lives. The historic link between the coal industry and our community has fueled the economy in our region and our state. However, due to a monumental shift in economic stability, we believe that we must refocus on science and innovation topics. By refocusing, our students will ultimately be successful in their college and career paths. It is our goal that parents and community members not only participate in the STEM initiative set forth in this project, but value the core ideas of STEM education.

2017 Innovation in Education Planning Grants

School: Fort Gay PreK-8 **Award:** \$56,395.58
County: Wayne
Lead Administrator: Greg Miller **Grant Contact:** Gregg Miller

Summary:

Fort Gay Pre-K currently has approximately 550 students. The school received a “D” rating on the first A to F state report card. The weaknesses in mathematics fluency weighed heavily in this low rating. In the 2015-2016 school year 18% of 5th grade students, 12% of 6th grade students, 9% of 7th grade students, and 12% of 8th grade students scored mastery or above in mathematics on the Smarter Balanced Assessment.

Another area of concern for Fort Gay is the lack of opportunity for students to engage in authentic inquiry in sciences. Because of the lack of materials and supporting curriculum students are not given the opportunity to investigate, create, and discover solutions and problems.

The focus of this grant proposal is to give all learners (students, teachers, and administrators) meaningful experiences in STEM to enhance the curriculum, enhance learning, and ultimately increase the number of students scoring mastery or above on the annual state assessment. Central to this beginning to look at Costa and Kallick’s Habits of Mind. Teachers will have an opportunity to investigate the habits and work together as a learning community to implement them in their instructional practices.

Utilizing the Project Lead the Way (PLTW) curriculums for Launch and Gateway will give the students an opportunity to work in challenging environment that will develop many of these habits in mind. The PLTW curriculum, which is aligned with state and national standards, will also give students an opportunity to use science and math to explore and solve real world problems. The central focus of the PLTW modules is to utilize a design process to solve the problems. This same design process, which heavily relies on habits of mind, is used continually throughout the curriculum. This develops and reinforces a problem solving process that can be used in all disciplines including mathematics and science.

The Mathematics Studio Program will offer administrators and teachers ongoing embedded professional learning to develop stronger content knowledge and best practices in Mathematics. This is accomplished with a 5-day professional learning seminar focused on content knowledge, best practices, and mathematical habits of mind prior to the beginning of the school year. Five times each year the teachers will have an opportunity to work with a teacher leader to build upon the seminar with actual classroom experiences. The teachers will have an opportunity to work with the teacher leader to develop lessons utilizing these best practices, and then collect and analyze data to determine the effectiveness and next steps to increase student mastery. The teacher leader will also work with the administrators to lead them in understanding what best practices in mathematics looks like, and what to expect when the principal is doing walkthroughs and observations.