THE NORTHERN UTAH ACADEMY

FOR

MATH, ENGINEERING & SCIENCE

Digital Teaching & Learning

Grant Application

Oct.7, 2016

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This application examines the digital ecosystem of NUAMES Early College High School. It reviews the current status of technology in NUAMES Early College High School, what we have and where there is need. NUAMES utilized *The North Carolina Digital Readiness Plan* which revealed areas of digital advancement and exposed areas of digital need in serving students at NUAMES Early College High School. If NUAMES Early College High School is to effectively meet the digital teaching and learning needs of our students in an ever changing digital world, ongoing professional development, user-end training and digital curriculum are needed to take full advantage of the available technical infrastructure that the school has access to. NUAMES is seeking funding through the Utah State Board of Education Digital Teaching and Learning Grant Program to support a long term commitment to implementing ongoing digital teaching and learning within NUAMES Early College High School.

Statement of Purpose

To create a safe sustainable digital ecosystem for NUAMES Early College High School that has flexibility to accommodate ongoing changes to the school, innovations and emerging technologies.

NUAMES Overview and Digital Narrative:

The Northern Utah Academy for Math, Engineering and Sciences is an Early College High School, located in Layton, Utah, on Weber State University's Davis Campus. NUAMES was started in 2002 by Governor Mike Leavitt as one of the six Early College High Schools and received funding from The Bill and Melinda Gates Foundation. NUAMES opened its doors to students in the fall of 2004. NUAMES specializes in preparing students for university programs and careers related to the STEM fields of math, engineering and science. In its thirteen short years, NUAMES Early College High School has become a leader in student growth and student outcomes in the State of Utah. It has continuously been ranked the number one school in the State of Utah by the school grading system and has been one of only two schools to receive an A grade for all four years the State of Utah implemented SAGE testing. At present, NUAMES Early College High School, serves 767 students, in grades 10-12. NUAMES has 32 classroom teachers, 3 administrators, 3 school counselors and 1 business administrator (2).

The stakeholder's vision for the grant program is to develop a safe, sustainable digital ecosystem over time by striking a symbiotic relationship between our available resources, needed digital resources, teacher's abilities and needed progressive training to support and engage the digital learning needs of all our students. We define digital learning as participatory learning where outcomes typically are customizable by the participants.

When the stakeholders met it was agreed that two areas of identifiable need are: to increasing schoolwide ACT scores and to improve the English/reading College and career benchmark scores reported from the 2015-16 school year. Although NUAMES was one of only five schools, in the State of Utah, to meet all four ACT benchmark scores, English/reading score was the lowest score receiving a score of 95/150 (1). This is also a department where student access to computing devices is the lowest. Although NUAMES students need to improve their overall ACT benchmark scores in English, NUAMES also believes that it is important for students to understand why they should acquire the needed skills to improve their scores and how that knowledge and skill set can transfer to other disciplines, college and in their careers. At the start of the 2016-17,school year we added 1 classroom set of computers to an English classroom in an

effort to improve digital learning, but still currently have one English classroom that is not equipped with computers.

Our Statement of Purpose and Goals have been conceptualized based on accumulated data from the North Carolina Digital Learning Plan (7), roundtable discussions and proven beliefs about the role of technology in teaching and learning. Our guiding goals when making decisions about this program have been our school mission statement which is *"To be the school of choice for those seeking a rigorous and supportive early college experience on university campus*"(5). Our *Four Pillars of Education* also were used as guiding principles. Our four pillars are promises we make to our NUAMES students they are: Small school environment, Teaching Excellence, University Partnership, Focus on *STEM (5)*. Our stakeholder committee also sought out research based articles related to digital teaching and learning, that are referenced throughout this application. We also defined Digital learning as participatory learning and learning where the learner can customize the outcome.

Our reason to obtain funding from the grant is to improve student learning and student growth in ACT benchmark scores specifically in English/reading. The five objectives, that align with our school mission and pillars, that we believe are important to the progression of digital teaching and learning at NUAMES are: 1. Data-based instructional design where digital tools and resources are used to support the learning process in a nature that makes data-based instruction meaningful, useful and efficient 2. The integration of proven and emerging digital technologies to support the recent increase of NUAMES student enrollment. 3. Expanded digital curriculum resources that create digital course learning opportunities for *all* NUAMES students. 4. Promotion of the needed digital skills for college and career readiness 5. Embedded, concerns-based professional development for teachers and administration to support student learning.

Our Statement of Purpose aligns with the NUAMES school mission "*To be the school of choice for those seeking a rigorous and supportive early college experience on a university campus"(5).* NUAMES recognizes that exposure to digital teaching and learning is an important factor in preparing students for college and life after high school. We recognize that for a student to master college, they need to know how to master a digital classroom environment. 50% of our senior class last year earned their Associate's Degree prior to their high school diploma and every one of our students leave our school with some university level credit. We believe that more

support in digital learning will increase these numbers and better prepare more NUAMES students for college and meaningful careers.

Since the fall of 2013, NUAMES has seen the dramatic growth in student enrollment by over 350 students. The school doubled in size and like all growth, there are challenges that have come with increasing student enrollment. Despite the growth, NUAMES has been able still lead the way in student achievement. This has been something that NUAMES has continuously been able to achieve through student centered education, teaching excellence and a supportive school environment. NUAMES is currently ranked the number one high school in the State of Utah for student outcomes and growth and has been since 2012 (1)(4).

In 2015, NUAMES made vision driven, targeted infrastructure improvements, by adding a new science and engineering building with science labs and engineering classrooms. As part of this improvement, NUAMES outfitted two engineering classrooms with computers, added digital technologies to our Biotech-lab and purchased a Swivel, a video reflection and skill development cloud platform for teachers and students to more effectively record themselves. The integration of video in teacher observation at NUAMES was added on the premise that, "the use of teacher-collected video in classroom observations did seem to improve the classroom observation process along a number of dimensions: it boosted teachers' perception of fairness of classroom observations, reduced teacher defensiveness during post-observation conferences, led to greater self- perception of the need for behavior change" (12).

NUAMES administration has also tried to increase our investment in professional development by offering trainings on a needs driven basis and last year found that technology needs were always top of the list. By the end of 2016, our teachers received over 960 hours in professional development, many of which were devoted to digital training. At this point, most of those hours were received through training that was brought into the school. Through this program we would like to send our teachers and administrators out to see what other schools are doing to progressively add digital teaching and learning into the classroom.

At the beginning of the 2016-17 school year, we replaced outdated decrepit computers, adding another engineering classroom with twenty eight computers to meet the digital learning needs of our newly offered computer software principles class. We are also currently in the process of adding our first mobile notebook lab (32 notebooks) for our science students to access online learning opportunities and for our teachers to be able to deliver electronic test and quizzes.

Lanschool software was purchased schoolwide at the start of the 2016-17 school year to support teachers teaching in classrooms with computers as well as to assist students in staying on task and on appropriate, school approved online domains. Prior to the school year begining, all NUAMES teachers received training on how to effectively use Lanschool in their classroom instruction.

Furthermore, prior to the start of the 2016-17 school year, NUAMES implemented an online sign-up tool to schedule incoming students for a math placement test, not only did this help to preserve valuable "man hours", it allowed for us to quickly assess incoming student's math level, thus placing them proper math class. This quick online tool helped us to dramatically decreased the amount of schedule changes from the beginning of last year. We also sent two engineering teachers to rigorous Project Lead the Way trainings over the summer to prepare them to teach our newly added Software Principles class, a new section of Principles of Engineering and a new Digital Electronics class. These investments and related progress have been dedicated to increasing our students learning and preparation for college and life after school. NUAMES is also currently in the process of purchasing new 3D printers to more fully support digital student learning and growth in our engineering classrooms. These printers were approved through our Community Council and will be paid for by Trustlands money. We look forward to integrating the use of these in our engineering classrooms.

Although, these are great additions and good improvements to the school over the last few years, NUAMES recognizes that more and ongoing digital teaching and learning is needed for students, teachers and staff to stay on par with an ever changing digital world. NUAMES administration can see from our digital survey results that we are still categorized as an *emerging* in areas related to digital learning. We are expecting that funding from this program will help NUAMES to grow from an emerging school, to an advanced and a future targeted school. We want to become a school where we are not only known for our math, science and engineering, but also for our use of technology meet the digital needs of our students and teachers.

I.   **NUAMES Results on the Readiness Assessment Required in Section 53A-1-1404**

In order to determine the readiness for a digital learning program, NUAMES used the *North Carolina Digital Learning Plan (7)*. The survey within this plan was completed by three

teachers, two administrators, 1 school counselor, 1 board member and 1 community council representative was also invited to participate, but his survey was not returned and he was unable to attend the roundtable discussion. It should be noted that two teachers and one administrator currently have children who attend NUAMES as students, thus oftentimes a parent perspective and opinion was voiced during our roundtable discussions.

Answers from all surveys were scored, collected and then compiled into a single scored survey which is included in this section. The final survey results can be found in the Final Summary that is included as required documentation in this section. A meeting to discuss the results, have a roundtable discussion and brainstorm areas of digital need for the school was held after the results of the surveys were compiled and tallied.

The results from our *North Carolina Digital Learning Plan* were as follows:

On the *North Carolina Digital Learning Plan,* the stakeholder group scored NUAMES as advanced in technology infrastructure, content and instruction. The stakeholder group scored NUAMES as developing in leadership, professional learning, data and assessment.

Technical Infrastructure had the highest overall rating from all the surveyed areas and unanimously this was concurred in the roundtable discussion. Network Services, technical support, school networks and learning environment all received high advanced ratings. NUAMES has the advantage of leasing space from Weber State University during school hours and in turn reaps the benefits of the robust infrastructure of Weber State University's network system.

On the Utah School Technology Inventory Report, located on the UEN website it states: *On average, Utah schools report having 0.58 APs per classroom or instructional space (or excluding districts that do not offer Wi-Fi access, 0.65 on average). Statewide, 79% of Wi-Fi connected schools have fewer than one access point per classroom or instructional space (17,pg. 9).* NUAMES, by way of Weber State University, has the advantage of having 2 access points per classroom. Even more impressive is that while other schools are transmitting information at one hundred megabytes per second, at NUAMES we have the advantage of Ethernet lines built for gigabit speeds. Thus NUAMES network is functioning at and above traditional schools with the advantage of gigabit Ethernet speeds (11). NUAMES WIFI also is transmitting 500 megabytes per

second as compared traditional Wi-Fi speeds. NUAMES does believe we will need to purchase extra access points to support our yet to arrive mobile notebook lab.

Technical support is another area of digital infrastructure where the stakeholder's survey results gave NUAMES an advanced rating due to the IT and Classroom Education Technology support of Weber State University. NUAMES employs and shares a contract with a Weber State Academic Computing Specialist who handles all of our IT and school technology needs. NUAMES works closely with Weber State to ensure our IT goals align with each other and recognize how fortunate NUAMES is to have access to Weber State University's Network. Our mission to provide *"a supportive environment for students on a university campus"* seamlessly correlates with Weber State's IT and Classroom Technology Department's statement from their vision statement that states, "We envision an environment wherein: IT works with campus partners to understand and align with University goals and strategies and Faculty and students are provided technology services which enable them to enjoy the best possible academic experience" (9). The entirety of Weber State University's IT Department's Strategic Plan is attached as supporting documentation in the folder under this section.

Learning environments was another bright spot on the *North Carolina Digital Learning Plan*, for NUAMES, due to the clean, professional environment and the many opportunities throughout the day for students to be in a classroom and have access to a 1:1 ratio with a computer. Six engineering classrooms have a classroom set of desktop computers which equals 1:1 computing for each student in that classroom. All students who graduate from NUAMES are required to take two full years of engineering courses. Furthermore, four out of five English classrooms have a classroom set of desktop computers. NUAMES, through the Digital Teaching and Learning Grant, has a need to purchase a classroom set of computers to create a 1:1 computing environment for all students in all English classrooms. We believe that the addition of computers to another English classroom will help improve our students readiness for college through acquired skills, improved ACT scores and improved student outcomes in English and Language Arts. ACT scores and improvement in English are consistent with our areas of school wide need as reported on our school ACT report and SAGE testing results.

Furthermore, the results from the North Carolina Digital Plan survey indicate that End User Devices scored as advanced, while professional development and training on how to use those devices scored lower as developing. This data echoed what most teachers shared in the roundtable

discussion. The discussion and data from the survey, reflected Job-Embedded Professional Development needed to be ongoing and echoed this statement from the article, "*When teachers receive well-designed professional development, an average of 49 hours spread over six to 12 months, they can increase student achievement by as much as 21 percentile points (13). On the other hand, one-shot, "drive-by," or fragmented, "spray-and-pray" workshops lasting 14 hours or less show no statistically significant effect on student learning (14). Above all, it is most important to remember that effective professional-development programs are job-embedded and provide teachers with five critical elements (Darling-Hammond et al., 2009) (15).* NUAMES stakeholders believe that job-embedded professional development will be the most effective when it comes to training teachers how to effectively harness digital teaching and learning.

From the Digital Learning Plan it was discovered that NUAMES is rated as developing in professional development, content/instruction and leadership. The stakeholders believe that the school is heading the right direction with purpose and focus, but that leadership should be mindful and that it would be beneficial for NUAMES administration to continually seek out quality professional development for teachers as well as to look within and without the State of Utah to see what other Early College High Schools and high schools are doing to improve student learning. All administrators in the group agreed that they sometimes feel overwhelmed with keeping up with the digital needs of a school, but were grateful for this opportunity to take a close look at the digital needs of NUAMES. All Stakeholders agreed creating a plan and having a timeline would be helpful for NUAMES administration to help them to fulfill their roles as digital leaders.

An informal survey was sent out to all NUAMES teachers to probe what they were using in their classrooms, where they saw digital need as well as what they desired in ways of digital support for them in their classroom instruction. Many teachers responded with a need for more end-user devices requests. Items such as additional desktop computers, a iPad for a math teacher to screencast problems, smartboard for two more math teachers, upgraded digital cameras in the photography and digital media classroom, etc. They also indicated that ongoing trainings, support and guidance is always appreciated when it comes to the ever changing world of technology.

II. Inventory of the NUAMES Current Technology Resources, Including Software IT support and Classroom Technology Support:

Part A:

In this section, we identify current classroom IT support and technology support. We have also included a table for all software programs that are currently in use at NUAMES, as well as websites that NUAMES purchases yearly licenses through. NUAMES will participate in future inventory efforts with UETN as requested by the requirements for this grant and NUAMES is continually seeking opportunities to improve our technology and use it more effectively in student learning. For a full report of NUAMES Technology, refer to the NUAMES Technology Inventory in the Resources folder under Results on the Readiness Assessment.

1. Academic Computing Specialist – NUAMES employs one academic computing specialist that we share with Weber State University. NUAMES pays 60% of his salary and Weber State University pays 40%. When NUAMES is able to secure funding from the grant over the next three years, NUAMES would like to increase the percentage of our access to him and fund a stipend for more access, support and training to support digital teaching and learning at NUAMES.

2. NUAMES has access to all of Weber State University's broadband Ethernet, WI-Fi, and network capabilities as part of our lease agreement with them. Each teacher and student has to access this privilege through user specific credentials to log onto the system and has to have a signed *Acceptable Use Policy* for NUAMES student and Faculty (19)(20) to access Weber State University's network.

   a. NUAMES teachers, students and staff have access to Weber State University Davis Campus IT support, Classroom Education Technology Department and their support hotline.

   b. Encore Student Management System – Encore is the student management system we use through a contract with Davis School District. Student information, purchasing, finance and payroll are all done through the Encore system.

   c. Each teacher has a school issued laptop computer to support them in their instruction.

   d. Each administrator has a school issued laptop to support them in classroom observations, meetings, trainings, etc.

   e. Each classroom has a working teacher station that includes the following:

      1. Desktop computer

2. Document Camera

3. Overhead Projector and pull down screen

4. In-room audio that is hooked up to the instructor computer

5. Each room is equipped with a panel to control all the lights, blank the screen, control the volume, etc.

f. Six engineering classrooms each have a classroom set of desktop computers. One set was replaced this year and two were purchased last year

g. Four out of five English classroom have a classroom set of desktop computers. There is need for one more set of desktop computers to make a 1:1 learning environment for learners and digital devices. The Stakeholders believe acquiring these computers will help improve student outcomes in English as well as improve student ACT scores and ACT College and career benchmark scores.

h. Swivel – A recording device that used in conjunction with an iPhone or iPad effectively and efficiently tracks and records teachers while they are teaching in the classroom. Videoing has been shown to help perceived fairness in teaching observations and teachers to be less defensive (12).

Items identified through the teacher survey as a possible future needs:

1. 2 Smart Boards -math classroom instruction.

2. 1 iPad -math teacher would like an iPad that he screencasts onto his whiteboard.

3. 1 computer lab equipped with desktops computers

Inventory of NUAMES Software currently being used in the school:

Software Program	Department/Courses Where Software is Utilized
1. Microsoft office Programs; Word, Excel, PowerPoint, OneNote 2. Adobe Suite 3. Java 4. Google Apps for Education	All NUAMES Departments

5. Outlook 365 email 6. Encore	
1. Autodesk Inventor – All engineering classes use inventor 2. MD-Solids 3. Robopro 4. RobotC 5. Paralax basic stamp editor 6. West Point Bridge Designer 7. Race2mars 8. Microsoft Flight X 9. Logger Pro 10. SSA-1000 11. Jet stream 500 12. Microsoft office programs 13. online NASA simulators. 14. MultiSim For Circuit Design 15. Xylinx for Integrated Circuit Chip Programming 16. Exam View Assessment App 17. Mobi View Student Survey Software 18. Basic Stamp Robotic Software 19. CONVERT Weights and Measures Conversion tool 20. LabView LoggerPro for Electronic weights and Measures data collection 21. RobotC for programming Vex Robots	Introduction to Engineering Principles of Engineering Digital Electronics Aerospace Computer Software Principles Robotics

22. SSA 1000 software for Destructive testing machine 23. Westpoint Bridge virtual Bridge design game/tool 24. MDSolids software for general Engineering analysis and instruction. 25. AutoDesk Inventor for virtual 3-dimensional design and rendering	
1. 26TI-Smartview 84 Plus 2. TI-Smartview 30X Pro 3. TI-iNspire CAS 4. Navigator Teacher 5. TI-iNspire CX CAS Teacher	Math Department
1. SAGE Online Assessment	Math, English, Biology, Chemistry, Physics
1. Canvas	All Concurrent Enrollment courses
1. Dreamweaver 2. Flash professional 3. Photoshop 4. Premiere 5. Illustrator	Digital Media/Art
1. Lanschool	All classes w/ computers & computer labs
1. Identify Finder	All computers & teacher laptops

Websites/online programs NUAMES purchases yearly licenses:

1. SRI READING Program - $3500.00/year -Scholastic Reading Inventory™ (SRI) is an objective assessment of a student's

reading comprehension level. The computer adaptive assessment can be administered to students in Grades K—12 and is based on The Lexile Framework® for Reading. The test format supports quick administration in an un-timed, low-pressure environment. SRI is proven to be an effective assessment to: (1) Identify struggling readers. (2) Plan for instruction. (3) Gauge the effectiveness of a curriculum. (4) Demonstrate accountability. (5) Set growth goals. (6) Forecast state test outcomes.

2. SignUP Genius - $99/year. We use this for students to sign up on our math placement tests, teachers to sign up for classroom observations, presentations in faculty meetings, etc.

3. ClearingHouse $450/ year for Data collection regarding graduation and enrollment in higher education institutions

4. NUAMES Website – Frogtummy is our company that maintains our site. We spend about $1500-2000/ year for maintenance and changes.

5. Grammerly – NUAMES English teachers use this site to assist them in correcting student papers.

B: How NUAMES will integrate those resources into NUAMES Implementation Process Structured to Yield NUAMES School Level Outcomes.

NUAMES SAGE results for the 2015-16 school year were very impressive, with scores of 73% percent proficient in Language Arts as compared to the State average of 44%. NUAMES was 83% in Mathematics as compared to 47% and NUAMES 77% percent proficient in Science as compared to the State score of 49%. Even though these SAGE results are impressive and far above State averages NUAMES experienced a decrease by 7% in SAGE Language Arts proficiency percentages (3)(1). This decrease could be attributed to many factors; the increase in student enrollment by one hundred more students, lack of access to computers in language arts classrooms as well as lack of focused professional development for English and language arts teachers. NUAMES through this grant will integrate resources into increasing language arts proficiency

while addressing all those factors; meeting student enrollment growth with more computers in language arts courses, focused professional development with English teachers and collaboration time for teachers to meet every third Friday to review student data and work on meeting ACT college and career benchmarks in English/reading to help NUAMES yield the targeted school outcomes.

In an effort to meet the recent increase in student enrollment, the drop in SAGE Language Arts proficiency percentage and rating of only 95/150 in English/reading in college and career readiness on the ACT benchmark score, NUAMES, through this grant program will purchase a set of classroom computers for an English classroom, fund a stipend for additional training and support (from the Academic Computing Specialists) to maintain the additional computers. The Academic Computing Specialists duties will be to ensure licensing for software is purchased, legal and updated as needed. The Academic Computing Specialist will also be responsible for data privacy of the students, maintaining the computers as well as ensuring proper data ports, access points and network needs are addressed.

Through this grant, NUAMES will use acquired funds to outfit the outlier English classroom with a classroom set of computers so that NUAMES students can have a 1:1 ratio of student to computing device in every English classroom. Students will use these computers on a day to day basis to increase and improve their knowledge and skills in core english learning concepts, writing skills, improve reading and become familiar with using a computing device to turn in and complete school work in a digital classroom environment. Research has shown that, "Educators and policymakers who advocate the learning of skills relevant to the 21st century strongly argue that literacy in information and communications technology (ICT)—which relies on skills such as thinking and problem solving, communicating effectively, self-direction and productivity—requires fully integrating technology with classroom learning" (18). Researchers are finding a clear link between technology, achievement, and motivation. Most experts engaged in the technology debate agree that students and teachers tend to be more engaged and interested when technology is an integral part of teaching and learning (19) . NUAMES will also offer continuous access to tutorial training and implementation strategies related to the use of technology in the classroom for teachers, by utilizing KYTE Learning (24).

NUAMES has established a measurable goal for the purpose to show progress and learning as qualification for this grant program. We desire all students to improve in ACT benchmark

outcomes and yet we also desire students to understand the "why" they should acquire the needed reading and language skills and how the application of those skills will assist and support them in college and in their future careers. We recognize that students in this technological day and age are consumers of media as well as producers of it and we want them to become aware of the responsibilities that come with being a producer. The computers in English classroom will allow the students to efficiently access required reading, learn how to critically probe the content for information, respond in real time, collaborate to produce material and disaggregate information with multiple sources of input. All these skills contribute to being a responsible producer of content. Programs we already have at NUAMES such as Canvas, google classroom, google drive are all platforms this can happen, but NUAMES lacks the computing devices. Having computers in our English classrooms has been a needed and necessary step for NUAMES to keep pace with the changing times. Being able to have all English classrooms as a 1:1 computing environment will allow for more seamless collaboration among teachers and a more directed and focused professional development.

Additional SRI licenses will be added and used to test Junior's reading levels. Scholastic Reading Inventory™ (SRI) is an objective assessment of a student's reading comprehension level. The computer adaptive assessment can be administered to students in Grades K—12 and is based on The Lexile Framework® for Reading. The test format supports quick administration in an un-timed, low-pressure environment. SRI is proven to be an effective assessment to: 1) Identify struggling readers. 2) Plan for instruction. 3) Gauge the effectiveness of a curriculum. 4) Demonstrate accountability. 5) Set growth goals. 6) Forecast state test outcomes. SRI is designed to measure a reading ability with texts of increasing difficulty. Once this measure is obtained, SRI can be used to set growth goals, monitor progress, inform instruction, and predict state test outcomes. SRI helps to ensure that every student becomes a competent and motivated reader by individualizing their learning experience based on their specific abilities (23). SRI score results will be one more data point teachers and administration will have at their disposal to further diagnose reading levels, track progress in intervals and will help to identify students who need more support, accommodations or special services. English teachers will collaborate every 3rd Friday of each month within the English Department as well as with the ACT Prep teacher.

(Works cited are located in the Resources Folder)

NUAMES CAPACITY AND GOALS

Statement of Purpose: To create a safe sustainable digital ecosystem for NUAMES Early College High School that has flexibility to accommodate ongoing changes to the school, innovations and emerging technologies.

GOAL (Option B):

NUAMES will increase its ACT college readiness benchmark score in English/reading for *all* juniors by 5%, over the next three years using the scores from our ACT 2015-16 report as our baseline.

This goal supports our school mission of being "the school of choice for those seeking a rigorous and supportive early college experience on a university campus." The ACT test is used in the college application and college acceptance process. As ACT scores are calculated as part of the formula for scholarship opportunities and college admittance, increasing our NUAMES student outcomes in ACT college readiness supports our school's mission of a supportive college experience. Although NUAMES was one of only 5 schools to reach all ACT benchmarks in college and career readiness, English was the school's lowest score 95/150 that NUAMES Early College High School received in our school grading report in 2016-17 (1) (4). Additionally, NUAMES SAGE proficiency scores in Language Arts decreased from 80% in SY 2014-15 to 73% in SY 2015-16 (3).

Intermediate outcomes:

Our intermediate outcome will be to increase our overall ACT benchmark score in English/reading by 2%. If we are seeing a 2% increase by halfway point, that would indicate we are on track to meeting our goal.

Direct outcome as defined by the Master Plan:

NUAMES will increase its ACT college readiness benchmark score in English/Reading for all juniors by 5% over the course of three years. The following statement, "Prepare students for college and careers including an emphasis on higher-order problem solving across the curriculum" is taken directly from the Utah Master Plan vision statement. If NUAMES, through this grant, is

able to accomplish the direct student outcome of increasing student ACT scores by 5% in college readiness benchmark scores in English/reading this student outcome will align with the Utah Master Plan as well as our own school mission. Another quote from the Utah Master Plan that resonated with our team is "Utah has a powerful opportunity to act, and to harness technology as an extraordinary tool to our benefit. Information technology can help Utah construct an economy that overcomes the obstacle of distance and the constraints of climate. Technology powered learning engages students and enhances learning. Our aim is to leverage Utah's great strengths toward even greater gains for learners across our state. Our schools in Utah have a rich history of successful initiatives and forward thinking movements" (16). NUAMES was established and created and built upon a forward thinking movement in 2002. We have seen how staying true to that original school mission and vision has created elevated learning outcomes for students who are prepared for college and life after high school. We believe that outfitting our English classroom with a classroom set of computers, providing collaboration time with our Language Arts teachers and ACT prep teacher, offering additional IT support for teachers and students, ACT Boot Camps prior to the test and ongoing professional development and training for our administration and teachers will help NUAMES to meet the goal of increasing our school's ACT college readiness benchmark score. We see this as a beneficial opportunity for our students to harness technology as a tool for their benefit as well as a digital teaching and learning experience that will better prepare them for college and careers.

NUAMES Early College High School runs on student progress data. Monthly, NUAMES teachers meet to collaborate, discuss student progress data, plan and share what is working to improve student learning. Quarterly each NUAMES teacher is required to report on student progress scores and growth to NUAMES administration as well as be observed in the classroom. The data reports and observation notes are reviewed and evaluated in the teacher's quarterly evaluations. Each teacher is required to keep student data and show student progress or lack of progress in student performance. If lack of progress is reported, a plan is created by the teacher and administration to improve student learning and growth. NUAMES will continue this excellence in collecting, sharing and evaluating student learning throughout this grant period and beyond.

Furthermore, NUAMES has an ACT Prep course where students take practice tests, receive instruction on concepts and their individual progress and are monitored over the course of their sophomore year. NUAMES tenth graders are also given the SRI reading test to determine if

additional support, monitoring or special services are required. For those students who are identified, the SRI test will be administered on an interval schedule, systematically until proficiency is reached. Progress will be monitored and students will be included on setting goals and working on how to improve their reading scores. Additionally all students on a 504 plan or receiving Special Education services with a reading goal are currently given the SRI test in intervals throughout the year to provide student progress data points and additional information on how to better meet the student's needs. NUAMES will continue this process through the grant period to ensure all students who need extra support, extra opportunities and student progress data are receiving it.

Similarly, English teachers are required to keep student progress data that is reported quarterly to administration. As part of this grant initiative, administration will facilitate collaboration between the ACT prep teacher and English teachers to compare data, see what data points align and to dial into a focused effort to improve student ACT benchmark scores in English by 5%, over the timeline of three years, when compared to the school year 2015-16 results. Although NUAMES was one of only five schools in the State of Utah to achieve all four ACT College and career benchmarks, English was the school's lowest score and area of highest need with a score of 95/150.

(Works cited are located in the Resources Folder)

IV. Implementation Process Structured to Yield an LEA's School Level Outcomes

Part A. Activities:

Activities that will be carried out are detailed in the table below with an included timeline, roles and responsibilities and communication assignments. The activities NUAMES has chosen for this grant include purchasing and installing computers in an English/language arts classroom and funding a stipend for the Academic Computing Specialist to help cover the needed additional IT support and training. Adding ACT Boot Camps on Saturdays for Juniors preparing to take the ACT test, additional funds to help cover the cost of the teachers teaching the Saturday Boot Camps as well as needed training and professional development for our NUAMES Administration and NUAMES Teachers through an individualized platform.

These activities have been systematically planned to use digital teaching and learning to support student progress and growth in improvement schoolwide in meeting ACT benchmarks, specifically in an increased effort schoolwide to improve English/reading outcomes and meet college and career readiness benchmarks. We recognize the need for flexibility in the plan when the intermediate plan outcomes are available make adjustments in activities if they are required in order to meet student learning needs. NUAMES will continue to participate in the professional learning and implementation support offered by USBE and UETN to more fully increase our success in implementing digital teaching and learning into our school. NUAMES will also provide implementation data to USBE on an annual basis.

Part B. Timeline/Part C. Roles and Responsibilities/Part D. Communication Plan

Activity	Timeline (Date)	Roles/Responsibility for this Event	Communication Plan
Digital Readiness survey completed by stakeholders	Sept 1, 2016	Emails sent out asking for participation to stakeholders -Principal Survey completed by all stakeholder members - Stakeholders	Data turned into Vice Principal Data aggregated and consolidated in a single survey - Vice Principal Results given to Principal Principal Communicates to Board
Stakeholder's meeting/Needs Identified and draft of plan	Sept 16, 2016	Organize Invite - Vice Principal Invitees need to show up Draft of Plan- Principal Data supporting documentation- Vice Principals Budget items - Business Administrator	Data driven discussion - all team members Beginning of Plan communicated to Board - Principal
Boot camp	Sept 22, 23, 2016	Administration participates in a 2 day boot camp in Heber, Utah	Communicate W/ ACP of IT needs to submit grant application - NUAMES Administration all members

Needs selected and draft of plan revised.	Sept 26-Oct 5, 2016	Draft - Principal Rewriting - All Administration members w/ Stakeholder input	Communicate to ACT prep teacher and English teachers plan has been submitted - Principal
Plan created and submitted by Oct. 7th.	Oct. 7	Submit Plan -Principal	
Plan Revised - if not approved on first round	Nov 2016	Stakeholder's meeting - if necessary Admin writing session planned - principal Data collection - Vice Principal	
Plan approved	Dec 2016	Celebrate - All team members	Report to Board, Community Council, teachers and staff - Principal
Digital devices, software, curriculum purchased and Installed at school, etc.	January 2017	ACT curriculum researched- VP Computers selected – ACS Purchased by – Business Manager WSU Communication – VP Budget - Business Administrator	Community Council - Administration, Board Meeting – Principal IT Support/Computer inventory – ACS WSU Needs- VP
Administration Takes	Feb 2017-	Research a school to	Report back to Board and

a field trip to see what other schools are doing to improve ACT benchmarks and how they are using Digital tools to do it.	March 2017	visit- Principal and VP's Plan the field trip- VP's Make arrangements - VP's Budget - Business Administrator (Planning Grant)	teachers - Principal
Finalize KYTE as our partner to provide digital teaching and technology training to for our teachers.	Feb 2017	Pay Kyte - Business Administrator Have Kyte come present in faculty meeting - Principal Have English teachers create a plan of technology training they feel will fill what they lack - English teachers	Communicate to all faculty of KYTE, resources, etc. set up a plan for all teachers - Principal Inform Board of Kyte's implementation at NUAMES
Ongoing Professional Development using Kyte in identified areas: We will continue to participate in the professional learning and implementation support offered by USBE and UETN	Feb 2017-May 2019	Calendar created for Ongoing PD/ collaboration w/ ACT & English Teachers this will happen the 3rd Friday of every month – notes and agenda items will be recorded and tracked in OneNote – Principal and Teachers	Calendar shared with all teachers- VP Update to Board on Progress of grant - Principal

		ACT training in PD meeting – ACT prep Teacher	
ACT test administered	Feb 2017	Use results as another data point to compare with SY 2015-16 results and scores after grant plan has been implemented -VP Overseeing ACT administration - NUAMES Counselors	Communicate to teachers test results Students and parents will receive results online via ACT.
Implementation and Integration w/ ongoing support	March 2017	Look at a schedule to provide 'ACT Boot Camps' to juniors. When would we provide this? After school? Saturdays? Provide boot camps in all 4 benchmark areas Cost analysis of ACT boot camps for Juniors – VP WSU room availability – VP Planning of PD - Principal	Community Council - Administration, Board Meeting – Principal IT Support/Computer inventory – ACS WSU Needs- VP
Purchase more SRI licenses to monitor	April 2017	Secure more SRI licenses – VP	Communicate that SRI will be given to all 11th graders at

students reading levels for the following school year.		Purchase licenses - VP Budget - Business Administrator	the start of the following school year – Principal Administer SRI test to all 11th graders the first or second week of school - English Teachers Share SRI results in collaboration meeting w/ACT Prep Teacher
Academic Computing Specialist stipend for the following school year $2,000 per year Purchase KYTE for the following year -if it has been deemed effective use of school resources and teacher's time.	May 2017	Increase the salary to proportionally increase CET specialists percentage we can access him at NUAMES to support the additional computers, needed training, etc. -Principal Budget - Business Administrator	Inform CET Specialist of percentage change to support the added computers, needed training for teachers and students. -Principal Give ACS a list of added responsibilities -Principal
ACT Saturday Boot Camps	January-Feb 2018	ACT boot camp - provided by ACT teacher /English teacher Supplemental stipend to teachers paid for by grant – Business Manager Approval Principal	Approval by board - Principal

ACT TEST for all Juniors	March 2018	All NUAMES Juniors take test Test administered on Campus by teachers, counselors.	Counselors – VP Teachers – Principal WSU - VP
Evaluation - Provide data to USBE	March 2018	1/2 way point. Evaluate and compare ACT scores to our scores to SY 2015-16. -VP Are we making progress? Hold a stakeholders meeting- Kelli Disaggregate the data by demographics to see if we need to focus on a certain demographic population	Report on ACT results of the 2017-17 SY Report to Faculty, Board, Community Council
Provide implementation data to USBE on an annual basis	April 2018	Provide a report to USBE on where NUAMES is at the 1/2 point of the grant. Have we improved 2% at this point? -Principal	Report to USBE - Principal
Make adjustments as needed. Determine if more support, effectiveness of Kyte, more access to digital	April 2018-May 2018	Stakeholders meeting – All required to attend, assign action items as needed	Keep a record of meeting notes and action items - Principal

tools is needed.			
Additional percentage needed to Academic Computing Specialist? If yes, increase payment proportional with increased need and duties.	June 2018	Determined on a needs basis by NUAMES Administration	
Ongoing support, continue boot camps?	June 2018-March 2019	Dissect current curriculum. Is it engaging students, providing the correct content, what other supplementation is needed? Continue collaboration meetings 3rd Friday of every month Evaluate boot camps	(fill in as we get closer to these events on an as needed basis)
Purchase SRI Licenses	August 2019	Purchasing - Business Administrator	
ACT boot Camps	Jan- Feb 2019	ACT boot camp - provided by ACT teacher /English teacher Supplemental stipend to teachers paid for by	Board approval - Principal

		grant – Business Administrator Approval –Principal	
ACT Test for all Juniors	March 2019	Compare data from test results to ACT results from SY 2015-16. Did we improve ACT benchmark in English/reading by 5%? - NUAMES Administration	
Reflection. What did we get right? Where do we need improvement? What will we continue?	April 2019-May 2019	Was this program successful? - Stakeholders meeting (All Stakeholders)	Report on ACT results of the 2017-17 SY Report to Faculty, Board, Community Council
Provide implementation data to USBE on an annual basis	April 2019	Report to USBE on Program's success at NUAMES - Principal	What did we learn, what did we achieve, was this successful, what were the pitfalls or the achievements? How did this Digital Teaching and learning Grant help NUAMES students? Where there other results we saw that we didn't anticipate?

Roles and Responsibilities:

NUAMES Administration - NUAMES Administration's role throughout this program will be to adhere to what is researched based proven facts of effective leadership in education. Research shows that the following features of effective leadership can improve student achievement

- A **vision** of academic success for all students based on high expectations
- A **safe and cooperative climate** for learning
- **Support and training** to promote continual professional learning
- **Data to track and promote collaborative inquiry and practices** that improve student learning
- **Cultivating leadership** in staff, parents, and community partners (25)

NUAMES Administration is committed to vision, a cooperative climate, support and training as continuing our data driven practices in making decisions about teaching and learning. We see the addition of what this grant will provide and offer students at NUAMES as a needed endeavor to use digital teaching and learning to promote student success and prepare them for college and meaningful careers. We echo the statement of Leithwood in that "Great leaders focus on developing people's capacities rather than their limitations" (25). NUAMES administration is committed to developing our student's capacities as well as our excellent teacher's capacities through professional development opportunities, proper curriculum selection and leading by example. NUAMES Administration will also seek out, visit other schools that have successfully implemented digital teaching and learning grants in their schools. As stated in Part B, NUAMES Administration will also provide implementation data to USBE on an annual basis.

NUAMES Administration - Will provide a commitment to excellence, Teaching and learning by example, leadership, guidance, forward thinking planning, support, troubleshooting, data, reporting to USBE and NUAMES Board, Communication with Stakeholders, overseeing the budget and all other duties that need to be filled or delegated by NUAMES Administration.

NUAMES Academic Computing Specialist – His role will be to select the needed computers with the needed components, install, train, support and manage their use, maintenance as well as monitor appropriate use and the user specific profiles. When need the arises, the Academic

Computing Specialist will provide professional development under the direction of NUAMES administration and will done on an as needed basis.

NUAMES Business Administrator - The NUAMES Business Administrator will set the budget, monitor and make adjustments when needed to meet the goals of this Digital Teaching and Learning Program. When we meet to evaluate the program the Business Administrator will be responsible for reporting on budget items.

NUAMES English/Language Arts Teachers - Will attend collaboration meetings every 3rd Friday of the month. They will be involved in teaching practices that promote college and career readiness skills, become knowledgeable of what factors contribute to the benchmark scores as well as what skills are needed for college and a meaningful career. English teachers will participate in professional development training on KYTE learning platform on how to improve student learning through digital opportunities using the new classroom computers, data-driven practices and collaboration with the ACT prep teachers. English teachers will also participate in ACT bootcamps and receive a stipend for their time and energy.

NUAMES ACT Prep Teacher – Will research and select ACT components that we need to focus on in our Language Arts courses (this will be done under the direction of NUAMES Administration). Data will come from ACT Prep course student progress data as well as Language Arts data from the English teachers. ACT Prep teacher will also coordinate with the English teachers ACT/language Arts teacher collaboration (as well as math and science), professional development, track student ACT data and look for additional emerging opportunities for NUAMES students to improve their ACT scores that we may not be aware of at this time. ACT Prep teacher will also participate in KYTE Learning professional development.

NUAMES Board Member - Will be the point of contact for informing the board and staying in the loop for the entire duration of this grant. Regular pre-board meetings will be scheduled to review grant information and progress.

NUAMES Counselors – Will assist in delivering the ACT test on test date, training teachers who are administering the test, applying for accommodations for students who qualify, securing testing

materials and sending them to ACT for scoring. Counselors will be responsible for promotion and advertising ACT Boot Camps to NUAMES juniors in their College and Career Readiness meetings. Counselors will also help to disaggregate data when it is available to NUAMES after test dates.

NUAMES Community Council Representative – Will report to Community Council on progress and look for opportunities and requests that support and align with this digital teaching and learning grant.

DIGITAL CURRICULUM - INSTRUCTIONAL TOOLS

"The power of 10 working interactively will almost invariably outstrip the power of one looking to beat out the other nine" (26).

When researching and deciding what was currently missing from NUAMES digital curriculum and instructional tools to improve student outcomes on the ACT in English/reading we came across the following passage:

"Contemporary reading and writing practices are transforming before our eyes. Interactive reading and writing now increasingly engage us. One can read together with others remotely, commenting between the virtual lines and in the margins, reading each other's comments instantaneously, composing documents together in real time by adding words or sentences to those just composed by one's collaborators" (26). Furthermore, "Hyperlinking has encouraged reading not just within and then between discrete texts but much more robustly across texts, inter-referencing and interweaving insights and lines of referencing. How texts relate, as a consequence, has become dramatically magnified, making visible what hitherto has been hidden largely from view." (26)

The Stakeholders quickly came to the conclusion that the above scenario is not possible for students in all of our English courses because they lack access to computers and thus lack digital learning opportunities when support, guidance and direction is available from a highly qualified

teacher. The Stakeholders asked the questions; where is the need? Where are we deficient? What classes can we improve the digital learning opportunities and 1:1 computing device to student ratio? All answers led to our English and Language Arts classrooms. More user-end devices are needed to allow NUAMES students to improve on meeting college benchmarks in English/reading as well gain needed skills to transition to college and careers. By outfitting our English classrooms with computers we are providing access for all NUAMES students, of all demographics and subgroups, with equal access to a digital tool that can enhance student learning and instruction for the teacher. Computers for every student in an English classroom levels the playing field by offering access to all and allows students who come from disadvantaged economic households to have access to complete, engage, contribute and participate digitally with the support of an engaging teacher.

In order to offer continuous access to tutorial training and implementation strategies related to the use of technology in the classroom and support our Language Arts classrooms, NUAMES intends to utilize Kyte Learning as part of a personalized professional development plan.

NUAMES is currently facilitating several school-wide technology initiatives. These initiatives include but are not limited to the use of: 3D printers and software, Canvas, Google and Microsoft hardwares and softwares. NUAMES relies on a myriad of other third-party educational technology products whose free or paid offerings help to increase efficiency in our schools and classrooms, but can be draining on administration and teachers time when lots of support and trainings are needed, but currently not a lot of options to tailor to each teacher's needs.

The challenge currently being faced by NUAMES staff is providing sufficient training time for all teachers in order to cover the wide variety of technology related topics that drive both teacher and student achievement. Because the amount of technology savviness amongst our staff varies greatly, NUAMES has sought a solution to provide differentiated training material that meets the needs of each individual and allows for detailed analytics and reporting to track progress and give insight to administrators on training effectiveness. NUAMES has also emphasized the need for a competency based approach to professional learning in effort to respect teacher's time and interests.

Kyte Learning offers an ever-growing library of technology-specific training materials. As a prerequisite, these videos include tutorial-oriented or "how to" content for the various technology

tools being used by the district. Additionally, Kyte provides practical application strategies and implementation examples that focus on the use of each tool in a classroom setting. Kyte's online courses are built by content experts who are currently or have been classroom teachers and include beginner, intermediate, and advanced concepts that cater to the needs of all our staff members. This content will serve as a way for our English teachers to discover new tools that are available to them when teaching with computers in the classroom. This is also a platform where teachers can stay abreast of the ever-changing landscape that is educational technology and build on their background knowledge and skill set. The content will also serve our existing technology implementation specialists and instructional coaches with providing supplementary training material after a more traditional in-service day has come and gone. Because Kyte Learning focuses on keeping each course up-to-date, NUAMES training resources can be focused on working with teachers in-person rather than behind the computer screen. Kyte's content holds the ISTE Readiness Seal of Alignment and aligns with the same ISTE standards on which Utah's Master Plan was based.

In order to assess the effectiveness of our grant plan and coordinated training and ensure content-specific strategies for integrating technology are met, NUAMES will also take advantage of the functions offered by Kyte's training platform. With the ability to assign, track, evaluate, and export data. This will allow for NUAMES to better understand how teachers are utilizing the platform to meet our training goals and objectives. LTI Integration with Canvas or many other popular LMS systems will also serve as a benefit because many NUAMES teachers have already become accustomed to a Canvas environment. By leveraging Kyte Learning, NUAMES will be better equipped to offer individualized, technology-based professional learning that is grounded in sound pedagogical practices.

Lastly, with the recently acquired Lanschool software and received training our teachers more than ever can monitor, control and interact with each student on a 1:1 basis to monitor the students activities on the computer, provide individualized direction and support for all students.

The Digital curriculum and instruction tools needed for NUAMES to meet our goals for this grant are as follows:

1. Instructional Tool-Classroom set of 32 desktop computers for English classroom ($29,184) (NUAMES will spread the cost out over three years or fund the portion not covered by this grant).
2. Instructional Tool/Professional Development tool -Yearly School subscription to KYTE - $1500/year ($4500 over the 3 years)
3. Simple, effective ongoing professional development for our teachers to drive home and help them to absorb the fact that "With digital learning, the play between technology, composer, and audience is no longer passive" (26)
4. SRI student licenses - Paid for by NUAMES, unless there is extra monies available through the grant.

(Works cited are located in the Resources Folder)

PERSONALIZED PROFESSIONAL LEARNING

Research has shown that, "Educators and policymakers who advocate the learning of skills relevant to the 21st century strongly argue that literacy in information and communications technology (ICT)—which relies on skills such as thinking and problem solving, communicating effectively, self-direction and productivity—requires fully integrating technology with classroom learning" (27). Establishing a culture of the necessity of digital teaching and learning within and without of the classroom is essential to the success of this grant program. While researching the subject of digital teaching and learning and approaching embedded personalize professional learning. A passage from the book *The Future of Thinking* states, "With digital learning, the play between technology, composer, and audience is no longer passive" (26) .

This statement resonated with NUAMES Administrators and we found we desired a similar environment when approaching our teachers with personalized professional learning. We envision participatory digital learning not only when it comes to our NUAMES students, but also our administration and teachers. We want students to find value in coming to class and learning 21st century skills on how to interact with information, use it to deepen understanding, research, create and produce material that is motivating, stimulating and meaningful for that we need training for our teachers who are all on different levels of comfort with technology. NUAMES will continue to participate in the professional learning and implementation support offered by USBE and UETN. NUAMES will access and utilize the resources for personalize learning on the UEN website and look for training and support from USBE.

In the article, *Teaching the English Language Arts With Technology: A Critical Approach and Pedagogical Framework* by Carl A. Young, Virginia Tech, he states, "Absent from technology literature, are measured directions for how teachers might develop technology literacy themselves, as well as specific plans for how they might begin to critically assess the potential that technology holds for them in enhancing their English language arts or methods instruction" (28). NUAMES hopes to fill the void of developing technology literacy for teachers by using Kyte Llearning as our partner in this grant and as opportunity to not only provide training for our English teachers, but for all NUAMES teachers.

NUAMES is a school founded on STEM education and we rely on a myriad of other third-party educational technology products whose free or paid offerings help to increase efficiency in our schools and classroom. Finding a way to provide sufficient training time for staff members in order to cover the wide variety of technology related topics that support the teacher and student achievement was a need discovered in our readiness assessment (7) for this grant. Because the amount of technology savviness amongst our staff varies greatly, NUAMES has sought a solution to provide differentiated training material that meets the needs of each individual and allows for detailed analytics and reporting to track progress and give insight to administrators on training effectiveness. NUAMES has also emphasized the need for a competency based approach to professional learning.

Kyte Learning offers an ever-growing library of technology-specific training materials. As a prerequisite, these videos include tutorial-oriented or "how to" content for the various technology tools being used by the school. Additionally, Kyte provides practical application strategies and implementation examples that focus on the use of each tool in a classroom setting. Kyte's online courses are built by content experts who are currently or have been classroom teachers and include beginner, intermediate, and advanced concepts that cater to the needs of all our staff members. This content will serve as a way for our staff to discover new tools that are available to them and their students as well as stay abreast of the ever-changing landscape that is educational technology. The content will provide supplementary training material after a more traditional in-service day has come and gone. This because Kyte Learning focuses on keeping each course up-to-date, school training resources can be focused on working with teacher's in-person rather than behind the computer screen. Kyte's content holds the ISTE Readiness Seal of Alignment and aligns with the same ISTE standards on which Utah's Master Plan was based.

In order to assess the effectiveness of our training and ensure content-specific strategies for integrating technology are met, NUAMES will also take advantage of the administrative functions offered by Kyte's training platform. With the ability to assign, track, evaluate, and export data, we will better understand how teachers are utilizing the platform to meet school training goals and objectives. LTI Integration with Canvas will also serve as a benefit for NUAMES teachers who have already become accustomed to a Canvas environment.

In summary, by leveraging Kyte Learning, NUAMES will be better equipped to offer individualized, technology-based professional learning that is grounded in sound pedagogical practices and approached with how we can increase student learning more effectively.

Additionally NUAMES will seek opportunities for administration to do site visits to other schools who have successfully implemented digital teaching and learning grants. NUAMES administration will take newly acquired information and share it with faculty and staff through trainings and staff development in the monthly faculty and professional development meetings. Currently each teacher as part of our bonus program has to present a 5-10 minute presentation on something they are using in their classroom that improves student learning. Past teacher presentations that have been presented have ranged from data collection via google forms and google sheets, using google classroom and google docs, to how to screencast on an iPad to how to use online science simulations to run science labs. This culture of promoting digital teaching and learning will be essential to sustaining and continuing to foster a culture where personalize professional learning is rewarded and beneficial for individual teachers as well as the faculty as a whole.

Curriculum alignment planning for the English teachers and ACT Prep teacher will take place on the third Friday of every month during collaboration time. This time will allocated to these two departments to align curriculum and set cross curricular goals that align with the goal of this grant program.

Once the grant has been approved a school or schools will be chosen, contacted and site visits will be planned with a future schedule to provide training to faculty in NUAMES monthly faculty and professional development meetings. NUAMES will establish flexibility throughout the grant time period to meet the needs that arise for each teacher and we acknowledge that there may be unforeseeable needs arise and that we must be willing to make adjustments and tailor professional learning to fill gaps and holes that may become exposed.

Researchers are finding a clear link between technology, achievement, and motivation. Most experts engaged in the technology debate agree that students and teachers tend to be more engaged and interested when technology is an integral part of teaching and learning (2) .

Please refer to the table under Section IV. *Implementation Process Structured to Yield an LEA's School Level Outcomes, Part B. Timeline/Part C. Roles and Responsibilities/Part D.*

Communication Plan to see that ongoing professional development is part of the activities and training that this grant is built around.

(Works cited are located in the Resources Folder)

ASSESSMENT - MEASURABLE OUTCOMES

The NUAMES grant plan will be measured by NUAMES ACT college and career readiness benchmark results in English/reading. NUAMES Juniors will take the test on February 28th, 2017; and approximately the same time frame (dates TBD) in school years 2018 and 2019. The test results and scores will be compared to the 2015-16 school year results to determine if progress in career and college readiness benchmark has been achieved. At the halfway point the data will be disaggregated to see if we need to focus more on a particular demographic of students to help improve overall school and individual results.

Individual student data will be monitored by the ACT prep teacher for those students who take that class. Feedback from student progress reports and teachers surveys will also be collected to evaluate if the additional desktop computers, ACT boot camp and curriculum are/were effective in supporting student learning and achievement. Student growth and progress will be monitored within each English classroom and reported to NUAMES Administration on a quarterly basis as is required practice for all teachers at NUAMES.

Stakeholder meetings will be held throughout the duration of the grant period to address progress, lack of progress or course correction if more supports are needed to meet targeted goals. SAGE results, student growth data, the ACT report are all additional data points that will be used to determine measurable outcomes and student growth alongside the college and career benchmark scores. SAGE data, PACE Report Card are all included in resources under the Assessment folder and provided as examples of data that can help to determine student growth.

To adjust and meet the needs of changing initiatives and improve instructional practices the stakeholder's team will seek out the latest research on how to improve Language Arts learning in a 1:1 ratio learning environment. NUAMES will not only assess the students learning and growth but also that of the teachers and their progression and comfort levels with harnessing technology to promote a higher level of understanding, student learning and promotion of how to access digital tools to solve complex problems, think more critically and develop skills to thrive in an ever changing digital world.

Evaluation of what tools, digital curriculum and additions to their classroom repertoire that have increased over the period of the grant will be evaluated as well. We seek to create a

sustainable digital ecosystem that can thrive and be fueled by teachers willing to take risks with what is possible when a 1:1 learning environment is available.

(Works cited are located in the Resources Folder)

ROBUST TECHNICAL INFRASTRUCTURE

As technical infrastructure was the highlight of our readiness assessment, the three year plan for infrastructure acquisition and process for procurement and distribution of the goals and services is to continue, promote and improve our amazing relationship with Weber State University. We refer and rely upon the strategic plan of Weber State University's 2011-2016 plan that is included in the resource folder under Robust Technical Infrastructure.

Technical support for implementation and maintenance of the grant program:

1. Apply for e-rate for computer tables, data ports and/or access points (if needed).
2. Continue ongoing relationship and communication with Weber State University's IT and CET departments. Attend all trainings and meetings regarding matters that affect NUAMES. (See WSU IT strategic plan 2011-16, results of the North Carolina Learning Plan, and NUAMES Technology inventory in the resource folder as well as read NUAMES Overview in Section 1 of this grant application.)
3. Continue and maintain a working inventory of all computers purchased by NUAMES and establish a maintenance and rotation schedule to keep computers in working order, accessible and on a schedule that can be maintained by our Academic Computing Specialist.
4. A stipend to pay the Academic Computing Specialist to maintain, support and provide services needed for the extra computers, wiring, data ports (if needed), etc.

(Works cited are located in the Resources Folder)

DATA and PRIVACY

"A report, undertaken by researchers at Harvard Graduate School of Education's Project Zero, investigates the ethical fault lines of digital pursuits. The authors argue that five key issues are at stake in the new media: identity, privacy, ownership and authorship, credibility, and participation" (29).

Current Security audits and practices that are used to protect student data and privacy are list below. Refer also to the Acceptable Use Policy for students and faculty members located in the folder under Data & Privacy:

1. Weber State University applies wiping software to all of the computers. After every "log off", all their student information is removed from the computers.
2. User specific profiles for each user. Each user must log in with user specific credentials that are issued by Weber State University and NUAMES.
3. All students and Staff are required to sign an Acceptable Use Policy prior to having access to use Weber State University's computers and network. See these documents under resource folder for Data and Privacy.
4. Identity finder –a program that goes through and scans all of the computer files and USBs attached to the computer. This program scans for personal information, warns you about it and wipes it clean.
5. Regularly update of all the security definitions laid out by Microsoft for all computers
6. Academic Computing Specialist attends trainings and professional development on an as needed basis or as required by Weber State University and/or NUAMES.
7. FERPA training is required for the Academic Computing Specialist position as well as all other as well.
8. All students and faculty members are required to sign an Acceptable Use Policy. These documents are located in the resource section under Data and Privacy
9. NUAMES follows all FERPA rules and regulations

(Works cited are located in the Resources Folder)

Budget

NUAMES minimum allocated budget for year one is $13,888 for the first year and $10,815 for year two and year three. We are aware that the budget we have provided for this grant exceeds the minimum allocated amount. We are optimistic that the amount of money that has been and will need to be distributed to charter schools will increase our minimum amount. Therefore, if we only received the allocated amount then NUAMES will need to adjust the number of computers we try to secure over the course of this grant. NUAMES recognizes that we may need to make adjustments to the quantities of what we purchase within this grant application. NUAMES will make every effort to cover what will not be covered under this grant program, but recognize that this may need to be adjusted over time and make decisions that are in the best interest of the school.

As to the fact that we do not yet know how much we will be allocated, (only the minimum amount) the budgeted items in the table below are approximations and will be adjusted once the amount of money is finalized. Additionally the bulk of the expenditure on the this grant is on the user-end devices of desktop computers for an English classroom, with each additional year of the grant supporting a Kyte Learning subscription for professional development, Academic Computing Specialist's stipend and teacher stipends for additional duties. Although the costs of the classroom set of computers is large and at the front of the grant purchasing the computers all at once will allow all of our English classrooms to be equipped with computers to create a 1:1 user computing device for all students. The addition of the extra English classroom of computers will allow seamless integration of the supplemental digital teaching and learning professional development completed by teachers.

The sustainability for this grant plan more than promising. With having access to Weber State's technical infrastructure and IT network (refer to sections NUAMES Overview, Robust Technical Infrastructure) NUAMES through planning and careful usage of school resources we will be able to maintain the integrity and quality of the computer's hardware and software programs. NUAMES allocated technology budget each year is $50,000. This money is spent on replacement parts, computers, wiring, data ports, software, licenses, printers, etc. This money is allocated to technology each year when the budget is created for the school year. It is foreseeable that the technology budget will need to increase in the future to remain a player in the ever evolving world of digital learning and teaching. In the future and when this grant period is over we will need to add additional funds to our technology budget to maintain the

extra computers, but we feel the addition of more quality digital teaching and learning will be worth the expense. We also recognize that going all digital in our Language Arts classrooms will decrease the expense of paper copies and paper articles, etc.

The subscription for KYTE Learning is inexpensive, tailored to meet each teacher's needs and supports administration in delivering valuable technology training. If NUAMES finds value in KYTE we will allocate the expense, of $1500/year, in future school budgets. The stipend for the Academic Computing Specialist's additional work load will be something that we will need to negotiate once the grant period has concluded. We are excited to see what is possible through this grant program and the plan we have created to better serve our students.

NUAMES allocated technology budget each year is $50,000. This money is spent on replacement parts, computers, wiring, data ports, software, licenses, printers, etc. This money is allocated to technology each year when the budget is created for the school year. It is foreseeable that the technology budget will need to increase in the future to remain a player in the ever evolving world of digital learning and teaching. Please refer to all other sections of this grant for a NUAMES overview, our unique location, history, digital readiness and mission and purpose of our school.

(Works cited are located in the Resources Folder)

Part 3: BUDGET				
Applicant:				
Description	Funding Requested – Year One January 1, 2017 – June 30, 2017	Funding Requested – Year Two July 1, 2017 – June 30, 2018	Funding Requested – Year Three July 1, 2018 – June 30, 2019	TOTAL FUNDING REQUEST
A. (100) Salaries	$5500	$5500	$5500	$16,500
B. (200) Employee Benefits				
C. (300) Purchased Professional & Technical Services				
D. (400) Purchased Property Service				
E. (500) Other Purchased Service				
F. (580) Travel				
G. (600) Supplies & Materials	$1500	$1500	$1500	$4500
H. (800) Other (Exclude Audit Costs)				
I. TOTAL DIRECT COSTS (Lines A through H)				
J. (800) Other (Audit Costs)				
K. Indirect Cost (* Approved Indirect Cost Rate)				
L. Property (includes equipment)	$29,184			$29,184
M. TOTAL (Lines I through L)	$36,184	$7000	$7000	$50,184

This form is a required element of the grant application. Justification for each of the categories shall be included in the budget narrative portion of the application. Modifications to the grant must be reflected over the three years of the grant and included as part of the annual reporting. For reporting, it must include an itemized breakdown of these budget categories and a budget narrative explaining how you calculated each line item and the actual total project cost share.

DTL Grant Year to Year Breakdown:

Budget Item	Cost	Notes
Stipend to support Academic Computing Specialist added responsibilities year 1	$2,000	Year 1 of DTL Grant Stipend added to CET specialist salary
KYTE Learning 1 year subscription	$1500	$4500 for all 3 years
Classroom Set of Desktop Computers	$29,184	30-32 desktop computers for English classroom
SRI Licenses		$3000/(NUAMES will cover expense)
Saturday stipend for teachers for ACT Boot Camp year 1 (6 Saturdays)	$3500	ACT prep teacher and two English teachers
Year 1 Total:	**$34,184**	
Year 2 CET specialist stipend	$2,000	
Year 2 KYTE Learning subscription	$1500	
Year 2 Saturday stipend for teachers for ACT Boot Camp	$3500	
SRI Licenses		$3000 SRI licenses
Year 2 Total:	**$7000**	
Year 3 CET Specialist stipend	$2,000	

Year 2 KYTE subscription	$1500	
Year 3 Saturday stipend for teacher for ACT Boot Camp	$3500	
SRI Licenses		($3000/ NUAMES will cover expense)
Year 3 Total:	**$7000**	

(Works cited are located in the Resources Folder)

Resources

(Articles have been hyperlinked for convenience)

1. NUAMES PACE Report Card

2. NUAMES School Profile

3. NUAMES Sage results 2016

4. NUAMES School Grading

5. NUAMES Mission & 4 pillars

6. NUAMES Demographics

7. North Carolina Digital Learning Plan Results for NUAMES Early College High School

8. NUAMES Technology Inventory from USBE

9. Weber State University IT Department Strategic Plan 2011-2016

10. Table of NUAMES Software

11. Technology Inventory from USBE

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29. https://mitpress.mit.edu/books/young-people-ethics-and-new-digital-media

30. Computer quote from WSU.

31. http://le.utah.gov/~2015/bills/static/SB0222.html - supporting legislation

32. http://www.uen.org/digital-learning/taskforce.shtml - UEN data inventory

33. http://www.edutopia.org/teacher-development-research-keys-success

34. http://www.uen.org/digital-learning/downloads/FundingProjections2017.pdf

35. NUAMES DTL Projected Budget