Innovative Learning And Teaching At Fairview High School

Our Story
Overview

Fairview High School is a high-achieving public high school located in Northwest Pennsylvania. Our school is made up of grades 9-12 and hosts approximately 600 students. Fairview High School provides an educational program that helps its students to develop the academic skills and personal qualities necessary to participate responsibly and intelligently in a democratic society. Our program attempts to develop the knowledge, skills, and attitudes that are required for higher education and the world of work, and the education that Fairview students receive should enable them to meet and understand the demands of a changing world. The faculty and administration strive to foster a climate in which creativity can flourish, while the school encourages students to develop the physical and emotional well being that will allow them to become responsible parents. The school recognizes its responsibility to strive for effective communication between the school and the community. In addition, Fairview endeavors to foster lifelong intellectual curiosity.

Modern-day curiosity cannot be achieved unless students are confident in the practical application of technology that surrounds their lives. In order to instill this confidence in our students, our school adopted a technology plan called “3E.” As a community we set out to ENHANCE our education program, to EMPOWER our students with the tools necessary to be relevant in a modern learning environment, and to EXCEL in life after high school.
What's your school's vision for learning and teaching with technology?

A vision supports learning and teaching with technology.

Stakeholders work together to lead and implement the vision.

Goals for learning with technology align to the vision.

Fairview High School recognizes the need to prepare our students for a digital world that requires a different set of skills than students needed just a decade ago. Graduates of the Fairview School District must be equipped with 21st-century skills of problem solving, critical thinking, communication, and technological literacy. Students will need to be able to quickly find, synthesize and communicate information, and collaborate with colleagues, not only in their own offices but also within a global community of colleagues and customers.

Fairview High School wants to ensure that students develop the skills and knowledge necessary to responsibly navigate this emerging modern world. Therefore, Fairview School District has successfully implemented a 1:1 program using the Apple iPad to enhance our existing dynamic educational experience for our students. The implementation of this technology into our school has provided the platform to allow a transformation of the teaching and learning process.
Fairview High School started to discuss a 1:1 program in 2013. We decided to begin a small pilot program with some of our highest achieving students who were taking AP Statistics and AP Calculus courses. We selected this group because we knew they were all really good at the instructional model that we had in place, which included a primary platform of teacher-led discussions and regurgitation of information by the students. The addition of the iPad into the curriculum instantly made the classroom more student-driven and required a different flow of information from what this group of students was used to experiencing.

Within a few weeks, we realized the instructional model that we were trying to implement was having a positive impact our highest achieving students that it made great sense to implement the program throughout our high school. During the 2014-15 school year our district’s technology committee worked diligently to put together a 1:1 plan that would benefit all students. The beginning of the 2015-16 school year started by distributing an iPad to every student, teacher, administrator, paraprofessional, secretary, and maintenance worker at Fairview High School. The transformation of the teaching and learning environment started!
Role of Key Stakeholders

The success from our program starts with the visionary leadership of our school Superintendent along with the innovative thinkers on our School Board of Directors. From the onset of the technology initiative, the school leadership has embraced the movement to a more creative and innovative educational process. Stakeholders work together to lead and implement the vision to ensure that Fairview High School is offering a world-class education program and maintains to be the leader in public high schools in Northwestern Pennsylvania.

The leadership was demonstrated when we made the decision to provide every school board member an iPad. This technology changed our school board meetings so that no paper was being exchanged. Our Board of Directors interact with documents, bids, and agenda’s in a digital format. This change demonstrated to all of our stakeholders that the technology integration was going to happen at all levels of our organization.

“The goal of education is to empower students so they they can use the knowledge and skills they have honed to independently enhance their own lives and to excel in whatever path they wish to pursue.”

-Alana Iapalucci
English Teacher
Goals and Sustainability Plans

The following educational goals drive the Fairview High School technology initiative:

- Enhance learning for all students.
- Implement current technology for individualizing instruction.
- Provide equal opportunities for technology use for all students.
- Promote collaboration and increase student engagement.
- Strengthen the 21st century skills necessary to participate in a global community.
- Provide immediate access to digital information.

“I empower creative thinking by encouraging student curiosity within engineering courses.”
-Drew Burt
Engineering Teacher
How are students using Apple technology to learn?

Students learn through teamwork, communication and creation, personalization of learning, critical thinking, and real-world engagement.

Student work deeply integrates the use of Apple products.

“Theatre empowers students to an enhanced awareness of who they truly are.”
-Laurie Hitt
Performing Arts Teacher

**Student Learning**

Enhancing the student learning experience is one of the most important goals of Fairview’s 1:1 iPad initiative. Teachers create engaging curriculum that is relevant and in-demand by today’s employers.

iPad has allowed lessons to become more collaborative and have put the students on the stage to lead lessons. Students learn through teamwork when completing chemistry labs and logging and analyzing data on Numbers. In 9th grade English, students critique peers essays using the collaboration features of Pages. All of this is done in flexible learning spaces.

Students take the role of teacher in most classes as they create fun and entertaining videos about different course content. Often, these videos are posted on a discussion in the course’s learning management system.

**STEM at Fairview**

Austin used SolidWorks to design his own headphones. All parts were printed using a Cube 3-D printer.
As the faculty pushes the limits of the technology, students and teachers will occasionally experience a glitch. These are often turned into a learning experience by the talented staff as they guide students through the troubleshooting process. Other courses are set up for customized student learning. Course content is broken into different modules that allow students to explore the content in which they are most interested. On the following pages, you will read about the innovative ways students are learning at Fairview High School.
**AP Spanish IV**

When Profe Froehlich wanted students to practice their Spanish language requirements at a superior level, she created an assignment where students would create a newscast. The group below incorporated cultural knowledge in a creative and tech-savvy way by utilizing green screen technology to create multiple segments of a news cast, including "on location" in Havana, Cuba, and Miami to comment on the death of Fidel Castro.

"Spanish at Fairview has helped me to connect with my grandmother who is a native speaker."
- Ashley Craig
  Fairview Student
The non-profit organization, “The Memory Project,” sent Fairview art students photos of children who live in a very challenged community in Bolivia with few keepsakes to call their own. The drawing and painting students utilized the glaze painting technique to paint heartfelt portraits to capture their likeness. The paintings were delivered directly to the children this spring by “The Memory Project.” The drawing and painting students were actively involved in being the change for these individual children, and it gave them more perspective of the world we live in.

The Memory Project

Video that showcases the first day of the project in Erie, PA, to the final delivery of the art in Bolivia.
Post-Secondary Planning

This career-readiness course focuses on preparing students for success after high school. Students learn valuable 21st-century skills to help them find their success later in life. Many of the skills learned in post-secondary planning include email, digital citizenship, computer troubleshooting, research, and job interview etiquette. Students utilize iPad and Schoology to improve their job interviewing skills. All students prepare for a mock job interview by posting and responding to job interview questions. Students use the iPad to record their mock interview with a local business professional. Students then complete a self-reflection after watching their interview video. Students post their mock interview video to a collaborative discussion board on Schoology. Students review and provide constructive feedback to their peers.

“We must excel as a district in preparing our students for success after Fairview.”
- Justin Zona
  Director of Curriculum & Instruction
Web Site Design

Matt Greene wanted to foster a start-up technology culture within his web design class. Inspired by Google’s 20% Time, Matt researched the idea and the impact it could have in public education. After creating a project that had enough structure for high school students, Matt launched the project in the fall of 2016. Like Google employees, the students spent 20% of their time in the class learning, researching teaching, and exploring a topic they were passionate about. Projects included learning JavaScript, C++, personal finance, creating digital art tutorials on an LMS and YouTube, healthy dieting, puppy mill awareness, learning Microsoft Access to create a database of band alumni for fundraising efforts, and home improvement tips. Students were given one day a week to research their topic. To provide structure and encourage collaboration, students wrote about their progress in weekly discussion posts on the course’s learning management system. The project concluded at the end of the semester with a student-given TedTalk style presentation.

“I want to empower students to pursue their passion’s and change the world.”
-Matt Greene
Business Teacher
In several courses throughout the high school, students began completing “Video Homework.” In this concept, students use iPad to showcase their knowledge of a topic they are studying in class by applying that knowledge to an outside setting. For example, in the AP English Language and Composition class, students created a short video demonstrating a logical fallacy. The assignment required students to film a 30-second-or-less video in which an example was given and the type of logical fallacy was named. At the start of the following class, all students’ videos were viewed to reinforce the previous day’s lesson on logical fallacies. Then, using the “like” feature in Schoology, students voted for their favorite video, and the winning classmate received bonus points. The use of video homework provided an engaging way for students to illustrate their new knowledge.

“Video homework not only enhances students’ excitement but also their collaboration.”
- Kelly Miele
English Teacher

Fairview student Brynn demonstrates a logical fallacy in a brief clip.
How are faculty using Apple technology to teach?

Professional learning opportunities with technology help faculty stay current.

Faculty create and use curriculum, instruction and assessment strategies, and content to support learning goals.

“
What sets the educators of Fairview high school apart from the majority of teachers elsewhere is the willingness to embrace change and new ideas. These adaptations are not only introduced in the classroom, but practiced among peers through experimentation and communication during regular professional development workshops. These hands-on training sessions provide an open-source atmosphere for all educators and administrators to share techniques and practices that have been successful, or met with friction and challenges.”
- Luke Beall
Assistant Principal

Professional Learning

Professional learning opportunities with technology help faculty stay current.

Our goal at Fairview is to achieve excellence. A positive learning environment that requires students to collaborate, innovate, create, and problem solve requires a faculty that willing does the same in their own development. In working toward this goal, we strive to provide the best possible professional development for our teachers. This begins with six professional development days throughout the school year. However, staff development is not limited to these six days. Throughout the district, schools have building-wide meetings where professional development will happen in short, supportive sessions. In addition, teachers meet with their departments regularly and professional development continues in these meetings.

As stated by a teacher, “The sessions are strategically designed to build in teacher choice. Furthermore, in-services geared towards technology nearly always differentiate sessions for less experienced and more tech savvy educators. This method capitalizes on the skillset each educator brings to the table while engaging participants through a naturally motivating relatability.” We create our professional development to meet the needs of each of our teachers, similar to how we approach meeting the needs of each of our students. We conduct pre-service surveys and use this data to drive the instruction in professional development. We also formatively assess the professional development’s effectiveness and use this to guide future trainings.

Joint In-Service

To begin our 2016-17 school year, Fairview School District hosted a joint professional development day with General McLane School District in August to continue to share how technology can positively impact student learning. At this joint professional development, an Apple Distinguished Educator conducted a keynote speech providing more professional development with both Fairview and General McLane faculty members on how to use iPad effectively within the classroom. Teachers from both districts gave presentations on but not limited to the following: creative thinking and learning, effective apps, online tools such as Quizlet and Popplet, and more interactive opportunities for 21st-century learning and collaboration using iPad in the classroom.
Our district does an excellent job of collaborating, engaging, and empowering others within our schools to pursue excellence in learning through individual professional development. One of the best features of our district is that it provides 12 credits of full tuition available to each teacher throughout the school district every single year. In addition to providing tuition reimbursement to our teachers, our pay scale reflects the importance of teachers receiving continual education throughout their careers. Our teachers are proud to be a part of a district that makes such large investments in continual learning and education in their teachers and to see that the professional development gained continues to positively impact our practice and student learning.
Professional Development Through Shared Leadership

Another way that our district promotes professional development is by asking a variety of teachers to participate on different committees throughout the school year. Not only does this promote shared leadership among teachers working together to create shared documents it empowers teachers to be experts within their grade level or subject areas. Teachers have thrived in our district working as collaborative forces to drive curriculum, assessments, the STEM initiative and more by working cohesively as teams to create documents that shows progression, standards, data, scope and sequence, and plans for the future.

Professional Development Through Outside Opportunities

Finally, an additional way that our district promotes collaboration and continual learning is by encouraging teachers to attend professional development in their specific area or in areas that the district would like to expand upon. Many districts are not fortunate enough to financially support sending staff members away to participate in trainings and take additional courses. Not only does our district value getting the best education for our students, but also for our teachers to empower them to be continual learners and provide the best education possible within every classroom.

“It is evident that the culture of teaching and learning is not only encouraged but embraced though the Fairview School District when you see how professional development is sought after, embraced, and shared. The transition from teachers being the ‘sage on the stage’ to the ‘guide on the side’ and creating more collaborative, real-world learning experiences continues to impact and drive our district’s professional development goals and accomplishments.”

-Luke Beall
Assistant Principal
Instructional Design

Instructional design at Fairview High School now begins with the following question: How can I leverage the technology tools to create engaging lessons that prepare students for post-secondary learning? Teachers are looking past mass textbook adoptions and instead are looking toward online engagement to support learning. The instructional process involves posting content and assignments onto a learning management system then allowing students to interact with that content in a personalized manner. The demonstration of knowledge by the student is now more flexible than ever before because the technology promotes creativity. It is the combination of the tools and the creativity of our staff and students that has allowed for the redesign of our instructional design process that will ultimately prepare students for life after high school.
How does the school environment support the use of Apple technology for learning and teaching?

Teachers and students use a variety of classroom arrangements, spaces outside the classroom, and virtual environments to support instructional practices and learning goals.

IT infrastructure and staff design access to hardware, software, and services for learning and teaching.

Learning Spaces

Instruction and learning at Fairview High School have never been defined by the traditional, four walls of classrooms. Teachers and students consider Fairview High School a place of learning in their lives, but it is not the only space devoted learning in our lives.

Beyond the Classroom

Virtual Learning Spaces - From distance learning experiences to a learner management tool like Schoology, Fairview High School expands the definition of where and how students learn. Students’ curricular options have expanded with the creation of blended courses in World History and Government/Economics that allow students to meet and collaborate both virtually and face-to-face during the summer months in an attempt to create more personalized course preferences during the school year. Students in English III communicate and collaborate with students in other districts in Schoology’s platform as part of their personal writing experience. As part of the Earth Action Project in the Environmental Science course, students provide data to a nation-wide data pool and analyze results and compare results in Fairview with those across the country. Virtual discussions take place across the content areas and provide a space for students to express a voice, insights, and ideas that they be hesitant to share verbally in a more public setting. These experiences, and others like them across the content areas, reinforce the belief that learning is not confined to room with four walls or reliant upon an adult instructor as the source of knowledge.

A 1:1 iPad environment has leveled the playing field for students at Fairview High School. In the past, students who could afford such devices were at an advantage over students with limited means. Now, with a device in every student’s hand, all learners have access to the same opportunities and tools that meet the individual needs for success. Even in situations where students may not have internet access on
particular evenings or at home, students can have assignments air dropped to them before leaving class or save them to work on offline when they are not connected. The Fairview High School library continues to evolve as a collaborative and connected learning space. In the past year, approximately one third of the space was repurposed as the Think Tank. In this space, students have open work spaces, team seating, Raspberry Pi's for personal programming projects, items to disassemble and coordinate, and green room production space. This space is available to any class at any time and all students throughout the day.

Even in traditional classrooms, teachers have reshaped their seating and space to support the 1:1 connected learning environment and belief that we can provided personalized learning experiences that share a common goal. During an eighty-minute block period, students move between traditional seating, standing desks, bean bags, and grouped seating—in all of these scenarios, the arrangement of the room evolves and changes to meet the needs of the lesson and the learners in the room.
The 1:1 iPad environment has also shaped the learning process for groups like the Fairview varsity football team. During games on Friday nights, coaches on the sideline have access to game footage immediately after each play as one coach records the play from the booth and shares it with staff on the sideline. This allows players to receive immediate feedback from their coaches on their performance, choices, and strategy in real time. This personalized, authentic learning, however, does not stop on Friday evenings. After the game using the Hudl web-based program, coaches upload game footage both for the whole team and individual players and groups for viewing on their devices at any place or time. Much like the students’ experiences in the classroom, feedback and learning tasks are personalized in our 1:1 iPad environment, and this reflects our shared goal of improved learning both in the classroom and beyond.
Tiger Trail - Circling the Fairview School District Campus is the Larry Kessler Tiger Trail. This three-mile loop is home to several outdoor classrooms and learning areas, an observation deck, and various student-generated projects that demonstrate students’ creative insights while also adding to the trail as a learning space. The outdoor classroom is frequented by teachers and their classes as place where they can be either connected or purposefully disconnected from the on-line learning environment. However, while in this space, they can also make comparisons between the natural experiences in front of them and those accessed through the infinite connections facility through online learning tools and resources.

“We have built an outdoor learning trail around our campus called the Tiger Trail that we use to teach students about environmental stewardship and conservation.”

-Justin Zona
Director of Curriculum & Instruction
Jack Bestwick Stadium - Just east of the high school, sits JBS, which is home to many Fairview High School teams after school hours; however, during the school day, it sees almost as much activity as it does on a Friday night in the Fall. Throughout the year, students utilize the all purpose field to conduct and measure experiments for their Physics classes, to collect data in Statistics, and to walk while reciting Shakespeare from digital texts and shared resources.
Infrastructure Design

Our current 1:1 environment is the result of vision and planning that started well before we ever had an iPad in the building. During the 2014-2015 school year, our IT staff replaced all of our core switches, main switches, fiber aggregators, and close switches while also installing sixty-seven wireless access points in a building with only 500 students. In preparation for our increased traffic, we also increased our bandwidth to 400 MB to accommodate a 1:1 environment. The 2015-2016 school year was ushered in by the iPad Rollout event over two nights in August that, via this grade level one-stop-shop, put iPad in the hands of over 500 students, connected them to the network, and established Apple ID's before they even left the building. Our mobile device manager, JAMF, works in conjunction with our FortiGate firewall to set up a global HTTP proxy on the iPad that directs all traffic back to the district even if students and devices are off of the network.
Creating this solid foundation and infrastructure has allowed teachers and staff to effectively implement the devices as a learning tool and to change the learning environment without having to worry about issues related to connection, streaming, access, or any of the other facts that can hinder connected learning. In the 2016-2017 school year, teachers were trained in Apple Classroom to enhance the classroom learning experience. As teachers move students in and out of apps, websites, and digital textbooks, they can control student devices to redirect students to topics at hand, the exemplars from other students—all of which personalizes the learning environment while also making it more efficient. This seamless sharing of content and learning is also facilitated by the use of Apple TV in classrooms as students and teachers share the ability to display material.

During this same school year, we also utilized our 1:1 iPad environment to facilitate state Keystone Exam testing. Doing so allowed students to be assessed and demonstrate their understanding in an environment and on a device with which they were very familiar. The DRC eDirect testing app is provided by the Pennsylvania Department of Education and works easily on the iPad and allows us to put students in the proper place and time to assure their most-likely context for success.

Because we believe that the iPad is a valuable asset to our learning environment, we facilitate a self-insurance program that involves a small annual fee for families and our contracting with a local company for repairs at a discounted rate. We also appreciate this level of control with the self-service app store. This tool gives staff and students a shared voice in the process of identifying apps for the iPad. We utilize a shared document for app requests for student use, and they can also use this resource to request building-wide apps for administrative approval. This system supports our on-going effort to personalize the learning experience for teachers and students at Fairview High School.
Results

How are you measuring progress toward your school’s vision and goals?

Data is routinely collected, analyzed, and shared to inform progress and measure the success of your program.

Data is used to determine next steps toward your vision and goals. Share what your results suggest, and what you’ll do next based on them.

Research Practices

At Fairview High School, data is routinely collected to determine the effect iPad has had on our educational community and to measure the success of the 1:1 program. Both teachers and administrators have surveyed teachers and students on the various aspects in which the iPad has affected the daily life of our educational environment. As stated in our vision, one of the purpose’s of the 1:1 initiative is to enhance the learning for all students. This enhancement comes in many forms; one of them is in how we engage the students. Action research conducted in our high school found that engagement increased in students while using the iPad as compared to students without the device.

Along with the study of how the iPad affects student engagement, the research examined the effect on student organization and access to resources. The research found the iPad helpful in both of these areas as illustrated below.

"The iPad helps increase student engagement and creativity."

-Kelly Miele
English Teacher
Research conducted in our building indicates the iPad has a positive effect in creating our school vision to foster critical thinking and creativity in our students. In examination of the iPad impact on seven traits of creativity, research found the iPad to be helpful. The graph to the right illustrates this effect.

In addition to student results, research studied the teacher’s perception of the iPad to influence student engagement and creativity. The research examined how teachers perceived the affect the iPad has on the students ability to take on new challenges, their openness to new ideas, divergent thinking, organization and engagement. These results are illustrated in the figure to the left.

In addition to research conducted in our high school, our results for our Keystone Exams have shown improvement since the implementation of the iPad. No subject demonstrates this gain better than the Literature exam. The chart to the right illustrates the growth during the 1:1 initiative.

In 2017, The Pennsylvania Department of Education ranked Fairview High School as the #2 high school in the state. These rankings come from a School Performance Profile score which is based on academic achievement data. Below is an article from the Erie Times-News which highlights the commendable achievement.

**Fairview High reaches new heights**

New scores rank high school 2nd statewide

By Ed Palatella
ed.palatella@timessnews.com

Fairview High School ranks as one of the biggest achievers in Pennsylvania.

It scored 101.3 out of 100 on its Pennsylvania School Performance Profile for 2016-17, giving it the second-best ranking for a public high school statewide, according to newly released data from the state Department of Education. The rating is based on standardized test scores, attendance, graduation rates and other academic measures during the 2016-17 school year.

The plus-100 rating puts the 6,300-student Fairview High School in rare company. Only Downingtown S.T.E.M. Academy, in the Downingtown Area School District, about 40 miles west of Philadelphia, scored higher among high schools statewide: 104 out of 100.

“'This is a pretty big deal, to be No. 2 in the state,” See SCORES, A4
Contribution and Credits

List of people willing to address five areas.

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In addition to the school liaison, the following people are able to address these areas.

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CREATIVITY

The use of the imagination or original ideas, especially in the product of work.

Related Glossary Terms
Drag related terms here
EMPOWER

Make someone strong and more confident.

Related Glossary Terms
Drag related terms here
ENHANCE

Increase our further improve the quality and value.

Related Glossary Terms

Drag related terms here
EXCEL

Be exceptionally good at an activity or subject.

Related Glossary Terms
Drag related terms here
FAIRVIEW HIGH SCHOOL

The #1 high school in Northwest Pennsylvania.
FAIRVIEW STUDENT

Leaders of tomorrow.

Related Glossary Terms
Drag related terms here

Index  Find Term
FAIRVIEW TEACHER

Innovative leaders in education.

Related Glossary Terms
Drag related terms here

Index   Find Term
INNOVATION

A new method, idea, or product.

Related Glossary Terms
Drag related terms here
IPAD

A device that impacted teaching and learning at Fairview High School.

Related Glossary Terms
Drag related terms here
KEY STONE EXAM

A Pennsylvania standardized test.

Related Glossary Terms
Drag related terms here
LEARNING MANAGEMENT SYSTEM

A digital platform in which teachers and students exchange content.

Related Glossary Terms
Drag related terms here
STEM

The integration of Science, Technology, Engineering and Mathematics.

Related Glossary Terms
Drag related terms here

Index