New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

PART I: VISION STATEMENT

East Amwell School is committed to fostering intellectual exploration, individual growth and social responsibility in our students' lifelong pursuit of excellence, education and honor. East Amwell School envisions its students as global citizens and leaders in the 21st century.

VISION

To prepare students for the unprecedented opportunities that await citizens of the 21st century, East Amwell School recognizes that a thorough understanding of technology is essential for success. Educational technology, thoughtfully and appropriately applied as specified in East Amwell School Technology Plan, will enhance not only the learning experiences of all students but also the professional growth of East Amwell School's faculty and staff.

In the interest of having students take ownership of their education, technological skill-building will be integrated into the curriculum. East Amwell School believes that full and equitable access to technological resources, available anytime and anywhere, must be a high priority for students, faculty and staff. Classrooms that facilitate inquiry-based learning, cooperative learning and collaborative partnerships are needed to support this new and exciting enterprise. Teachers will have the resources to support guided inquiry and direct their students as they become independent and fully engaged learners.

In the global environment, where technology continues to significantly change the normal course of business and education, students need proficiency in digital, visual, informational, and textual literacy in order to be active participants of the 21st century. Critical thinking and creative problem solving will be essential in cooperative and collaborative work environments. The Strategic Plan therefore calls for a curriculum that is interdisciplinary, global and diverse. Technology facilitates this process and is a principal tool to accomplish these ends.

East Amwell School Technology Plan envisions a faculty that intellectually engages students through "appropriate integration and applications of technology." East Amwell School is committed to providing faculty with quality resources to support this goal. As a leader in independent school education, East Amwell School desires a faculty that is creative and innovative. A rich technological environment that supports teachers will attract the best and the brightest in the profession. East Amwell School will provide faculty professional growth opportunities and responsive technology support to accomplish seamless integration of these resources into the process of teaching and learning.

Similarly, the administration of East Amwell School requires the same technology access and support to promote and enhance student activities, admission services, development services, financial services, communication, and facilities management. East Amwell School recognizes that our investment in technological resources will bring about long-term benefits to the community improving productivity among students, faculty and staff.

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

PART II: DISTRICT INFRSTRUCTURE

Technology Inventory Summary

Technology Inventory	Current: 2016-2017	Projected: 2017-2018	Projected: 2018-2019
Network: Switches	Cisco	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Network: Backbone	Fiber	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Network: Wireless	Aero Hive:40 AP	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Network: Internet	Verizon: 2 Fiber Lines	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Network: Printing	Canon: 5 Units Classroom: 10	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Computer Lab: 24	Desktops: 24	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Chromebooks	320 Units: Dell / Samsung / Lenovo	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
iPads	Apple: 200	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Admin Computers	Desktops: 15	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Staff: Laptops	Dell: 70	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Staff: iPads	Apple: 65	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Windows Platform	All Desktops and Laptops: Win 10	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Google / Chrome	All Chromebooks	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Security Camera	Digital Watchdog: 20 Digital Cameras	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Epson Projectors	45 Mounted Bright Lite Projectors	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed
Communications: Telephones / Email / Website / Mass Notification Service	Telephones: All Classrooms / Offices Website: Google's School Messenger Email: Google / Outlook All Staff Mass Notification Service: Blackboard Connect	Evaluated, Funded and Implemented As Needed	Evaluated, Funded and Implemented As Needed

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

Three Year Technology Plan Inventory Table 2020-2023

Area of Need	Describe for 2020-21	Describe for 2021-22	Describe for 2022-23
Technology Equipment	• Device Replace • Chromebooks • iPad • Staff Laptops • Compute Lab • Admin Desktops • Epson Projectors • Hover Cams • Wireless APs	• Device Replace • Chromebooks • iPad • Staff Laptops • Compute Lab • Admin Desktops • Epson Projectors • Hover Cams • Wireless APs	• Device Replace • Chromebooks • iPad • Staff Laptops • Compute Lab • Admin Desktops • Epson Projectors • Hover Cams • Wireless APs
Network Capacity	• Backbone • Switches • Wireless	• Backbone • Switches • Wireless	• Backbone • Switches • Wireless
Filtering Software	• Smoothwall	• Smoothwall	• Smoothwall
Maintenance Policy and Plans	• Google • Windows • Microsoft Suite • Ed Software	• Google • Windows • Microsoft Suite • Ed Software	• Google • Windows • Microsoft Suite • Ed Software
Telecommunications	• Phone Service • Internet Access • Website • Email	• Phone Service • Internet Access • Website • Email	• Phone Service • Internet Access • Website • Email
Technical Support	• Virus Protection • Backup Systems • Software Updates • Library • Student Information System • Network Monitoring • Server Maintenance • Print Service	• Virus Protection • Backup Systems • Software Updates • Library • Student Information System • Network Monitoring • Server Maintenance • Print Service	• Virus Protection • Backup Systems • Software Updates • Library • Student Information System • Network Monitoring • Server Maintenance • Print Service
Maintenance Facilities:	• Device Replacement • Chromebooks • iPad • Staff Laptops • Compute Lab • Admin Desktops • Epson Projectors • Hover Cams • Wireless APs • Security Systems	• Device Replacement • Chromebooks • iPad • Staff Laptops • Compute Lab • Admin Desktops • Epson Projectors • Hover Cams • Wireless APs • Security Systems	• Device Replacement • Chromebooks • iPad • Staff Laptops • Compute Lab • Admin Desktops • Epson Projectors • Hover Cams • Wireless APs • Security Systems

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

PART III: TEACHING AND LEARNING WITHIN DISTRICT INCLUDING FUTURE READY SUMMARY REPORT

SCHOOL BASED GOALS AND OBJECTIVES

Goal 1: Shift From Students as Consumers to Creators

A shift is taking place in schools all over the world as learners are exploring subject matter through the act of creation rather than the consumption of content. A vast array of digital tools are available to support this transformation in PreK-8 education; indeed, the growing accessibility of mobile technologies is giving rise to a whole new level of comfort with producing media and prototypes. This may be due in part to the rising popularity of social media apps, such as Snap Chat, Instagram, and Facebook, in which people tell and tag their informal stories through photos and video snippets. Many educators believe that honing these skills in learners can lead to deeply engaging learning experiences in which students become the authorities on subjects through investigation, storytelling, and production. Other components of this trend include game development and making, and access to programming instruction that nurtures learners as inventors and entrepreneurs. As students become more active producers and publishers of educational resources, intellectual property issues will become a key component of PreK-8 curricula.

Overview

There is growing support for empowering learners as creators that demonstrate their mastery in forms that surpass traditional tests and worksheets. Emerging instructional frameworks are encouraging teachers to use digital tools that foster creativity along with production skills. This trend also implies that educators are increasingly becoming creators, too, and are therefore in the position to lead activities that involve developing and publishing educational content. Apps such as Educreations have helped teachers streamline the process of creating, editing, and publishing video tutorials using a mobile device, while Apple's iTunes U offers a way for teachers to develop digital lesson plans that incorporate their own videos. As teachers become more comfortable using media, they can offer better guidance to their students.

Goal 2: Increasing Use of Blended Learning

Perceptions of online learning are becoming increasingly favorable as more schools experience the benefits of blended learning models. Schools that embrace blended and hybrid learning models are finding that online learning environments offer different but complementary functions to physical institutions, and can potentially be used to free up class time for activities that make the most from face-to-face interactions in the same space. Additionally, these emerging models

support personalized learning, resulting in more engaged, self-directed students. Teachers are then freed up to focus on small groups of students who need more support to succeed.

Overview

Blended learning pertains to the formal integration of online delivery for content and instruction; this model combines online work with classroom practice to create a system in which students have greater control of time, pace, and path of instruction. In many cases, blended learning paves the way for other approaches — including competency-based models — that enable personalized learning, promote skill mastery, and inform new roles and responsibilities for teachers.

Goal 3: Creating Authentic Learning Opportunities

Authentic learning experiences, especially those that bring students in touch with real-world problems and work situations, are still all too uncommon in schools. The term authentic learning is seen as an umbrella for several important pedagogical strategies that have great potential to immerse learners in environments where they can gain lifelong learning skills; these approaches include vocational training, apprenticeships, simulations, and portfolio-based assessment. Advocates of authentic learning underscore the importance of metacognitive reflection and self-awareness as cornerstones.

Overview

Authentic learning prepares students for the skills and knowledge demanded by universities and the workplace. The trend toward deeper learning (covered in detail in the Key Trends section of this report) runs parallel to this challenge because it highlights the movement toward incorporating experiential and hands-on learning opportunities in schools. Whether the goal is to improve retention, foster natural passions and interests, or expose learners to real work situations, authentic learning strategies bring students a greater understanding of their abilities and purpose in life beyond the classroom.

Goal 4: Personalizing Learning

Personalized learning refers to the range of educational programs, learning designs, instructional approaches, and academic-support strategies intended to address the specific learning needs, interests, aspirations, or cultural backgrounds of individual students. While there is a demand for personalized learning, it is not adequately supported by current technology or practices. The increasing focus on student-centered learning is driving the development of new technologies that provide more choice and allow for differentiated instruction.

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

Overview

The goal of personalized learning is to create possibilities for learners to determine the strategy and pace at which they learn. While enabling technologies such as mobile devices and adaptive learning environments support student-centered learning, this challenge is concerned with the need for schools to overhaul their curricula in favor of designs that emphasize the individual over the one-size-fits-all standard

Goal 5. Teaching Complex Thinking

It is essential for young people both to understand the networked world in which they are growing up and also — through complex thinking — to learn how to use abstraction and decomposition when tackling complex tasks and to deploy heuristic reasoning to complex problems. Mastering modes of complex thinking does not make an impact in isolation; communication skills must also be mastered for complex thinking to be applied meaningfully. Indeed, the most effective leaders are outstanding communicators with a high level of social intelligence; their capacity to connect people with other people, using technologies to collaborate and leveraging data to support their ideas, requires an ability to understand the bigger picture and to make appeals that are based on logic, data, and instinct. While some aspects of this topic could be framed as similar to or overlapping "design thinking," for the purposes of this report, the two are considered as distinct concepts. The term "complex thinking" refers to the ability to understand complexity, a skill that is needed to comprehend how systems work in order to solve problems, and can be used interchangeably with "computational thinking." Teaching coding in schools is increasingly being viewed as a way to instill this kind of thinking in students as it combines deep computer science knowledge with creativity and problem-solving.

Overview

The value of complex thinking is already reflected in Silicon Valley, where coding has long been recognized as a critical literacy that often involves scientists and programmers discerning patterns and communicating through visualizations as a means of solving problems and driving innovation.196 Computer science requires the best of complex thinking, as the field is no longer just about technical skills, but also the ability to effectively organize and communicate ideas. Code.org projects that by the year 2020, there will be 1.4 million computing jobs but only 400,000 computer science students to fill them. Compounding this challenge is the fact that less than 2.4% of college students graduate with a degree in computer science —numbers have steadily declined in the past decade. As a result, an increasing number of school leaders are making the case that coding needs to be integrated into curriculum at the K-12 level as a means of promoting complex thinking at a young age.

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

Critical thinking has been an important issue in education, and has become quite the buzzword around schools. The Common Core State Standards specifically emphasize a *thinking* curriculum and thereby requires teachers to elevate their students' mental workflow beyond just memorization—which is a really good step forward. Critical thinking is a skill that young minds will undeniably need and exercise well beyond their school years. Experts agree that in keeping up with the ever-changing technological advances, students will need to obtain, understand, and analyze information on a much more efficient scale. It is our job as educators to equip our students with the strategies and skills they need to think critically in order to cope with these tech problems and obstacles they face elsewhere.

Fortunately, teachers can use a number of techniques that can help students learn critical thinking, even for children enrolled in kindergarten. Here are some teaching strategies that may prove immediately effective:

Goal 6. Plugged and Unplugged Activities

The primary goal of the Unplugged project is to promote Computer Science (and computing in general) to young people as an interesting, engaging, and intellectually stimulating discipline. We want to capture people's imagination and address common misconceptions about what it means to be a computer scientist. We want to convey fundamentals that do not depend on particular software or systems, ideas that will still be fresh in 10 years. We want to reach kids in elementary schools and provide supplementary material for university courses. We want to tread where high-tech educational solutions are infeasible; to cross the divide between the information-rich and information-poor, between industrialized countries and the developing world.

Goal 7 Professional Development

Every educator has professional development needs. From refresher courses on content areas to intensive training in new technology tools, professional development is a critical component of teaching and learning. It is particularly useful in the implementation of educational technology and the creation of digital learning environments. Many teachers—particularly those who did their teacher preparation years ago—did not receive instruction on teaching with technology tools. While this is becoming less of an issue now that more teachers have begun to learn about technology tools in pre-service training, it is still an area where considerable professional

development is needed. When designing professional development activities for technology implementation, it is critical that efforts be twofold: teachers need basic technical knowledge about how to use a tool, as well as knowledge about how to integrate the tool into their existing curriculum. In order to achieve full-scale change, schools need to ensure that strong professional development programs are in place and that teachers have a variety of opportunities for learning and growth. The technology Committee will work hand in hand with the Curriculum Coordinator and the Curriculum Committee to create and sustain a professional development program that meets the needs of all staff members.

Professional development choices are best made according to the individual needs of schools and educators. Some schools may find that small study groups meeting during the school day work for them, while other schools may orchestrate release time through the use of teaching interns or building substitutes.

Goal 8. Community Connections

Public relations…communications…community relations…whatever you call it, maintaining strong relationships and ongoing dialogue between our schools and with our community is the responsibility of each of us. We are all ambassadors for the District! If we do a good job of listening, sharing information, and involving people in our schools, we'll benefit from the resources and support of the community.

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

Reflection and Adjustment Plans

Reflect and Adjust –considerations when reflecting on progress of the implementation

1. Identify barriers to attaining the goals and objectives related to assessments, materials or methods.

2. Students could be offered opportunities to reflect on the progress of the plan implementation as it impacts their learning experiences and goals.

3. The plan should build educator capacity to implement the necessary learning pedagogy and practices for student college and career readiness.

4. A systemic process should be identified when changes are made to the goals, objectives and strategies to improve outcomes.

ACTIVITY	TOOLS	METHODS	PERSON(S) RESPONSIBLE	TIMELINE
Student Computer Knowledge and Skills	Student grade summaries on technology- based projects NETS Performance Indicators for Technology Literate Students. Report cards	Review of progress of students towards expectations. Revise plan as needed	Technology Plan Update Committee Ed Services Technology liaisons	Annually
Student Academic Achievement in targeted content areas	State assessment results District assessment results Student performance on Formative authentic assessment project rubrics	Review of progress of students towards expectations. Revise plan as needed	Technology Plan Update Committee Ed Services Technology liaisons	Annually
Staff Technology Proficiency	Performance on formative authentic assessment project rubrics Summary of Professional Growth hours in Technology NETS Performance Indicators for Teachers and Administrators	Review of progress of staff towards expectations. Revise plan as needed	Technology Plan Update Committee Ed Services Technology liaisons	Annually
Staff Technology Integration	Technology Use Survey and Report Informal classroom observation forms Technology-based lesson plans	Review unit / lesson plans and observation records for progress of staff towards expectations. Revise plan as needed	Technology Plan Update Committee Ed Services Technology liaisons	Annually
Technology Acquisition and Infrastructure	District inventory and usage statistics	Review of district inventory and usage	Technology Plan Update Committee Ed Services Technology liaisons	Annually
Technology Support	Annual customer service questionnaires Troubleshooting log Online work request system	Review customer surveys& work request system to determine level & quality of support to school & district use	Technology Plan Update Committee Ed Services Technology liaisons	Annually
Model Technology Projects	Survey teachers and students to determine perceived impact of project on learning to include library media skills Review student performance data	Review surveys and student performance data and compare to like classrooms without technology intervention	Technology Plan Update Committee Ed Services Technology liaisons	Annually

New Jersey Department of Education
East Amwell Township School
Three Year Technology Plan
2020-2023

Tools and Methodology to Monitor Site Technology Goals

The Technology Coordinator, along with the Technology Committee will coordinate the site technology plan and will be responsible for the management of all activities described in the programs for students and staff. An annual report will be made to the Superintendent and Board of Education.

Schedule for evaluating the effect of plan implementation Activities will be monitored as follows

ACTIVITY	TOOLS	METHODS	PERSON(S) RESPONSIBLE	TIMELINE
Student Computer Knowledge and Skills	Student grade summaries on technology- based projects NETS Performance Indicators for Technology Literate Students.	Review of progress of students towards expectations. Revise plan as needed	Principals Technology Liaisons Ed Services assistance	Annually
Student Academic Achievement in targeted content areas	State assessment results District assessment results Student performance on Formative authentic assessment project rubrics	Review of progress of students towards expectations. Revise plan as needed	Principals Technology Liaisons Ed Services assistance	Annually
Staff Technology Proficiency	Performance on formative authentic assessment project rubrics Summary of Professional Growth hours in Technology NETS Performance Indicators for Teachers and Administrators	Review of progress of staff towards expectations. Revise plan as needed	Principals Technology Liaisons Ed Services assistance	Annually
Staff Technology Integration	Technology Use Survey and Report Informal classroom observation forms Technology-based lesson plans	Review unit / lesson plans and observation records for progress of staff towards expectations Revise plan as needed	Principals Technology Liaisons Ed Services assistance	Annually
Technology Infrastructure and Support	Troubleshooting and work request system logs Customer service surveys to include survey of library support	Review of logs and surveys of level and quality of support Revise plan as needed	Principals Technology Liaisons Ed Services assistance	Annually