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Opening Statement

We believe that 1:1 computing is a better model of education over computer labs and text books.

- 1. The 21st century is technologically dominated – socially, economically, and culturally. Schools should be no different. We need to prepare digitally native students for success in a technologically driven world. 1:1 prepares students to be globally competitive. 1:1 helps provide the formal training in a learning environment that students need in order to understand their role as a digital citizen, a role that does not come naturally to them. "Laptop initiatives in the United States and abroad have cited meeting the goal of preparing students for the 21st-century citizenship, enhancing computer literacy, and showing positive effects on student writing as support for program implementations," (Donovan, 2007) As a result, students become more marketable in the work force and overall more productive members of the community. Walt Disney, an innovator who had constant faith in the future, said, "Times and conditions change so rapidly that we must keep our aim on the future." Digital natives are both our present and our future. Educators need to keep their focus on how to meet their needs. 1:1 computing environments are necessary for their success.
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2. Personalized and student-centered learning environments are provided by 1:1 computing. Students become responsible for their learning. This responsibility allows them to feel respected when given the trust of having their own device. Students are able to investigate, evaluate, collaborate, think critically, and communicate effectively at different paces resulting with differentiation being easily implemented in the classroom. Students also become more motivated in their own learning process and are given an outlet to express their creativity and their curiosity. Learning becomes a discovery for students and resources are engaging and adaptative. They move from a consumer of knowledge to a producer of knowledge.

3. 1:1 computing will result with the elimination of computer labs and textbooks and the creation of equal access to resources. It will help in the creation of a more constructivist and collaborative model of instruction. The elimination of computer labs will result with the gain of additional classrooms for instruction. "To increase the achievement of all students… all students must have equal access to technology rich environments in which technology is no longer a shared commodity," (Gulek & Demirtas, 2005).

Implementation of the Common Core Curriculum will require many schools and school districts to purchase new textbooks to meet the new standards. In a 1:1 computing environment, school districts will be able to purchase constantly updated textbooks in digital format.

Information for Rebuttals

- **Argument 1 - Learning environments become more constructivist and collaborative, increasing student engagement and motivation.**
    - A study completed by the Microsoft Corporation, as well as others, have shown 1:1 computing has helped increase the quality and quantity of student writing.
    - 1:1 computing provides opportunities for students to engage in problem solving and critical thinking.
    - Students are more actively engaged in the collaborative environment and their likelihood of been off-task becomes minimized.
        - Possible off-task behaviors become authentic learning moments where teachers guide students to independently redirect and refocus as they would need to be able to do in real world environments
    - 1:1 is about creating "learning opportunities for critical judgment, learning, and ethics than to teach time-limited skills or to show overly restrictive environments that limit their potential,' (Abram,2014).
    - 1:1 increases access to extended data sets.
        - Teachers and students relationship change – teacher becomes a guide on the side rather than a sage on the stage.
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- **Argument 2 - The success of 1:1 computing relies on the quality of the implementation.**
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    - "Programs that examined the needs of their students and teacher populations, developed technology infrastructure, and sought support from stakeholders were more successful; the program that relied on technology alone to produce outcomes ultimately failed," (Warschauer, Zheng, Niiya, Cotton, & Farkas, 2014).
        - Multiple studies show that professional development is key to the success of 1:1 computing
            - Coaching teachers through their learning
            - Regular, Relevant, and Ongoing

- o Re-evaluated constantly
  - Focus on teacher training and education, not the device.
  - "Infrastructure is key to a strong one-to-one program. A robust wireless system in conjunction with a reliable and fast internet connection is critical."
  - Equipping devices with anti-virus and filtering software before implementation is necessary

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Argument 3 – Test Scores - "Some critics wrongly dismiss the investment in education technology as wasted when test scores do not immediately improve. These critics do not consider that technology was not deployed to fulfill educational objectives or that these assessments do not accurately measure educational objectives," (CEO Forum, 2014).

- o Results from study on 4th-5th grade students in GPISD Dallas (TX) area using one-to-one program in math and ELA for a one-year period using a constructivist technology-enriched model (Used curriculum provided by www.timetoknow.com)
  - 4th grade math score improved 12.7% vs control group 8%
  - 4th grade reading score improved 7% vs control group 1%
  - 5th grade math score improved 7% vs control group 4%
  - 5th grade reading score improved 9% vs control group 6%
  - Unexcused absences decreased for students in experimental group while they increased for students in control group
  - 62.5% decrease in discipline issues in experimental group while no change in control group
  - 40.3 one-to-one student-teacher interactions during 3rd and 4th months of school year in experimental group while only 17 on average in control group
  - Every experimental lesson implemented independent learning
  - Teacher modeling was only implemented in 75% from experimental lessons vs 1005 in control lessons
  - Teachers observed adjusting instruction in response to learning progress in 83% of experimental lessons vs 30% in control settings
  -

Results on Microsoft Corporation's *Anytime Anywhere Learning Project* – partnership with Toshiba American Information Systems' Notebooks for Schools – evaluated by an independent research organization – (From "Teacher Concerns

During Initial Implementation of a One-to-One Laptop Initiative at the Middle School Level" by Donovan, Hartley, and Strudler)

- Student Outcomes:
  - "Laptop students spend more time engaging in collaborative work than non-laptop students
  - Laptop students participate in more project-based instruction
  - Laptops lead to more student writing and to writing of higher quality
  - Laptops increase access to information and improve research analysis skills
  - Laptop students become collaborators
  - Laptop students direct their own learning
  - Laptop students report a greater reliance on active learning strategies
  - Laptop students readily engage in problem solving and critical thinking
  - Laptop students readily engage in problem solving and critical thinking
  - Laptop students consistently show deeper more flexible uses of technology
  - Laptop students spend more time doing homework on computers
- Teacher outcomes:
  - Teachers who use laptops uses a more constructivist approach to teaching
  - Teachers who use laptops feel more empowered in their classrooms
  - Teachers who use laptops spend less time lecturing"

Harvest Park Laptop Immersion Program (From "Teacher Concerns During Initial Implementation of a One-to-One Laptop Initiative at the Middle School Level" by Donovan, Hartley, and Strudler)

- -"Harvest Park Middle School, located in Pleasanton Unified School District in Pleasanton, California, established its Laptop Immersion Program in 2001.
  - Findings:
    - "Harvest Park Middle School students in the Laptop Immersion Program attained higher GPAs than non-participating students in their respective grades"
    - Laptop students achieved higher end of the course grades
    - "results favored laptop students (90%) versus non-laptop students (79%) in terms of the percentage of students attaining a B or higher for eighth grade English"
    - "Overall, a substantially higher percentage of laptop students (95% in Grade 6; 91% in grade 8) met or exceeded grade level expectations in writing compared to Harvest Park school-wide averages and district-wide averages"

- ▪ "Students who use computers when learning to write are not only more engaged and motivated in their writing, but also produce work that is of greater length and higher quality, especially at the secondary level."
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Argument 4 - 1:1 and Special Education (From "Teacher Concerns During Initial Implementation of a One-to-One Laptop Initiative at the Middle School Level" by Donovan, Hartley, and Strudler)

- Opportunities that are not otherwise available
- Additional visual representation of learning material
- Individualized learning environment
- Improvements in behavior, motivation, engagement/interest, independent work, and retention
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Argument 5 - Creating Education for Digital Natives (From "Civic Engagement through Digital Citizenship" ECS February 2012)

- "They have never known a life without the Internet and cell phones. The pervasiveness of participatory digital media in their lives has had substantial impact on how digital natives interface with the world."
- As of 2012 – "Among teens ages 12-17, 95% have access to the Internet; 70% go online daily; 80% use social networking; 77% have cell phones"
- "Because digital media are so pervasive among youth and offer new avenues for civic participation, schools must rethink how they prepare students for active, participatory citizen ship… [need] to include the mission of preparing 'digital citizens"
- "For digital natives, however, citizenship is not a duty. Their civic actions originated from their 'personally expressive politics,' and 'peer-to-peer relationships that promote engagement."
- "While digital natives use participatory media extensively, they need formal training to help them use it most effectively"
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Creating Education for Digital Natives (From "Preparing Our Schools for the BYOD World" by Stephen Abram)

- o "In ancient times, schools provided virtually all the technology for teaching… No more!"
- o "The real world has a plethora of operating systems that provide choice and competition driving innovation."
- o "The student population is already mobile"

- o "Wi-Fi settings are the norm out in the real world, and schools don't get an exemption from that expectation"
- o "Tablets are emerging as the device of choice in a multiple device ecosystem"

Argument 6 - Common Challenges and Experiences of School Districts that are Implementing One-to-One Computing Initiatives

- Funding: bonds, Title I and II monies, private donor funding (at private school)
- Reasoning:
  - o Improved access to technology for students
  - o Economic benefits that might result from a move to digital curricular resources and a reduction in other spending
- Professional Development
  - o Trainer-on-site or coaching model used most frequently
- Expectations for benefits
  - o Improved access to technology
  - o Preparation for life after school
  - o Elimination of computer labs
- Evaluation plan
  - o Measuring impact of initiative on the knowledge, skill, attitudes and actions of staff, changes in classroom instruction, and impact on students' experiences and academic achievements
- Keys to success from viewpoint of researchers
  - o Strong commitment to the integration of technology that is communicated, understood, and promoted at all levels of administration
  - o Vision of role of technology in education is critical component for success
  - o Sustained commitment from administrators at all levels
  - o Districts that fail to recognize and plan for regular, relevant, and ongoing teacher PD are not likely to see widespread use or benefit for most students
  - o Need ongoing, sustainable funding for hardware, software, and infrastructure
  - o Need a formal plan for evaluation with measures of evidence of success gathered and analyzed; this plan should include measurable data on student learning, instruction, and long-term benefits for those involved

Closing Statement *repeat main ideas – summarize

We believe that 1:1 computing is a better model of education over computer labs and text books.

1. The 21st century is technologically dominated – socially, economically, and culturally. Schools should be no different. We need to prepare digitally native students for success in a technologically driven world. *need to add something about 1:1 devices being everyone in the real word* 1:1 helps provide the formal training in a learning environment that students need in order to understand their role as a digital citizen. "To increase the achievement of all students… all students must have equal access to technology rich environments in which technology is no longer a shared commodity," (Gulek & Demirtas, 2005).
2. Personalized learning environment is provided by 1:1 computing. Students become responsible for their learning. Students are able to investigate, evaluate, and collaborate *other verbs?*at different paces resulting with differentiation being easily implemented in the classroom. Students also become more motivated in their own learning process.
3. 1:1 computing will result with the elimination of computer labs and textbooks and the creation of equal access to resources.

Closing Statement

You cannot deny we live in the 21st century. You also cannot deny that we live in a 1:1 world. Everyday devices such as cell phones, tablets, e-readers, even interactive televisions provide support for this statement.

Students today do not know differently than our 1:1 environment. School should be no exception. Students are digital natives who do not know how to act as digital citizens. It is the responsibility of schools to prepare students to be successful in the world in which they live. 1:1 computing environments provide the necessary systems for both teachers and students to keep up with the rapidly changing world.

Computer labs and text books worked in the past, but they no longer provide equitable access that students need in order to be career and college ready, as well as productive and responsible members of their community. Providing every student with 1:1 access is the only way to ensure we are providing them the 21st century learning environment they need – a replication of the real world – all the tools all the time.

As stated in the CEO Forum School Technology and Readiness Report, "Technology can have the greatest impact when integrated into the curriculum to achieve clear, measurable educational objectives. When deployed appropriately [1:1] technology, can change the way students think and learn, and thus revolutionize education."

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