

ASFG 21st Century Learning Project

Using Technology as a Learning Tool in Every Classroom

One-to-One Laptop Project

Context to the Project

Our world has changed radically in the past fifty years, and all predictors indicate that the pace of change is only going to continue to increase exponentially. The Information Age, in which we are immersed, demands that we change the way we do business in education. Our students need a very different set of skills to be successful in the future than they needed fifty years ago, or ten years ago for that matter. There is no way we can continue to deliver all the information that exists today, as we tried to do in schools fifty years ago. Yet honestly, when we walk into our classrooms here at ASFG (or most schools in the world) they continue to look very much as they did fifty years ago.

We have most definitely, and positively, upgraded the rooms most recently with LCD projectors and at least one computer; but aside from that you will find desks and chairs, similar to what we may have seen fifty years ago, often still set up in rows as they were fifty years ago. Blackboards have been replaced with whiteboards in many rooms, but we are using them essentially the same way in most classrooms. It is still quite common place to see the teacher at the front of the room delivering the curriculum, because this continues to be the most efficient and easiest method for delivery. Our textbooks are new, but they are still books. For the most part, students still write on paper, submit work via hard copies, and take tests on paper.

We are training our students in Technology classes, once a week on average from P1st – 9th grade. Our students are probably significantly ahead of our school with respect to competencies with technology. Unfortunately, most of these competencies can be attributed to personal use at home attained in a non-instructional manner – and this intends no criticism of our current technology curriculum or teaching. It is simply a reflection of the fact that our students probably spend over 90% of their instructional time not working with technology. LCD projectors in classrooms are a significant improvement in providing teachers with the opportunity to bring technology a little closer to our students. Integrating media will infuse classrooms and increase student engagement. Students using projectors to present PowerPoint or multi-media presentations (assuming they can access a computer lab or work at home on their own computer without teacher instruction to create the presentation) will increase student accountability for

learning and require students to develop presentation skills they will use in the future. Of course, the use of the projector is going to be limited to teachers choosing to use this tool, and will unfortunately we believe, often become used as a fancy overhead projector so that students can take notes from beautiful PowerPoint presentations – again an improvement, but does it really significantly improve learning. Will LCD projectors enable interactive learning? Can we use technology to its fullest to improve student achievement? We can...and frankly must, particularly if we wish to maintain our reputation as one of the best schools in Guadalajara and fulfill our vision of being a leading educational institution.

We are going to bring Apple NoteBooks to every student at ASFG from grades 5 – 12 over the next seven school years.

Timeline and Big Picture

The proposed timeline for the roll-out of this project is as follows:

2009-10

Purchase 100 NoteBooks for every student in grade 7, including 6 laptops for each teacher.

2010-11

Purchase 100 NoteBooks for every student in grade 7 and 8 (8's keep their computers from previous year after summer servicing), including 6 laptops for each teacher.

2011-12

Purchase 100 NoteBooks for every student in grade 7, 8 and 9 (same concept of retaining laptop for 3 years), including 10 laptops for each teacher.

2012-13

Purchase 180 NoteBooks for every student in grade 7, 8, 9, 10 (same concept of retention), including 20 laptops for each teacher. Students would receive a new NoteBook upon entering 7th and 10th grade.

2013-14

Purchase 180 NoteBooks for every student in grade 7, 8, 9, 10, 11, 12, including 20 laptops for each teacher. Students would receive a new NoteBook upon entering 7th and 10th grade.

2014-15

Purchase 180 NoteBooks for every student in grade 7, 8, 9, 10 (same concept of retention), including 25 laptops for each teacher. Students would receive a new NoteBook upon entering 7th and 10th grade. Purchase 100 NoteBooks for all grade 5 students, which would remain with the student until the completion of grade 6. These computers should be good for a four-year cycle.

2015-16

Purchase 180 Notebook computers for every student in grade 7, 8, 9, 10 (same concept of retention), including 25 laptops for each teacher. Students would receive a new Notebook upon entering 7th and 10th grade. Purchase 100 NoteBooks for all grade 5 students.

To help with these expenditures, and ensure there is enough technology support for the addition of 700 laptops over the seven year period, we will eliminate desk top computers in teachers' classrooms as they receive laptops, as well as remove the majority of the desktop computers in the upper school library.

Delivery of NoteBooks

All NoteBooks will be received and stored in the Technology Center. All NoteBooks, including power cords and battery packs will be inventoried in the Aranda system and then will receive a barcode generated from our Active FX system. Once inventoried and bar-coded, each computer will have a common software package and desktop image installed. All computers will be tested for full functionality. The estimated timeline for this process will be 8 working days for 100 computers and will require the full-attention of two technology support staff during this time.

Distribution of NoteBooks

Teachers

Teachers will receive their laptops a minimum of 5 months prior to any student distribution in order that they may become familiar with the functioning of a laptop and to allow for sufficient time for research and design into the effective use of laptops as learning tools. Teachers will be required to complete the ASFG 21st Century Project Computer Loan Agreement for Staff (appendix 2) and the ASFG 21st Century Learning Project Network and Internet Agreement form (appendix 3).

We will provide these teachers with training sessions every two weeks, as well as release time from the classroom for at least three half-days during this time period to allow for in-depth in-service and time for collaboration. This structure will be used for the first three years of the project implementation or until teacher comfort levels with the use of laptops as learning tools becomes sufficiently high enough to permit for a reduction in this type of training.

Parents

We will host a special laptop evening where all parents of students receiving NoteBooks will need to attend a brief (20-30 minutes) presentation on NoteBook care and internet safety (appendix 4). Following this training session, parents will receive an ASFG 21st Century Learning Project Computer Loan Agreement, ASFG 21st Century Learning Project Student Network and Internet Agreement and ASFG 21st Century Learning Project Responsible Use Agreement forms (appendix 5). These forms will restate the requirements for proper care of a NoteBook, suggestions for internet safety, and an acknowledgment that the school is 'loaning' the NoteBook to their child and that the child and parent are responsible for the proper usage and care of the NoteBook. In the event that the NoteBook breaks, and does not fall under the warranty (deliberate and malicious damage), the parent will be responsible for the repair or replacement cost. In the event that the NoteBook is stolen, the parent will be responsible for filing the appropriate legal forms or they will be held responsible for the replacement cost.

We will provide every student with a NoteBook caring case. Students will be required to always use a protective carrying case when moving around with their NoteBook.

Once all of the forms have been collected, the NoteBooks will be provided at this meeting to the parent and student. Parent, student and ASFG staff will sign off on the serial number on the Notebook, which will be issued to each student.

Parents unable to attend this meeting, will need to visit the ASFG 21st Century Learning Project website to read the presentation on care and usage, read and sign the ASFG 21st Century Learning Project Computer Loan Agreement, ASFG 21st Century Learning Project Student Network and Internet Agreement and ASFG 21st Century Learning Project Responsible Use Agreement forms and then turn them in at the Middle School office. Once the forms have been completed, the parent and student will be issued a Notebook. Parent, student and ASFG staff will sign off on the serial number on the Notebook which will be issued to each student.

Students

Prior to the parent-evening meeting to issue NoteBooks, all students will participate in a classroom presentation on the correct care for NoteBooks, usage of NoteBooks and internet safety workshop. Students will need to successfully pass a short quiz based on the workshop content in order to be issued a Notebook at the evening meeting. Students will attend the evening meeting with their parents and be required to sign-off on the ASFG 21st Century Learning Project Computer Loan Agreement and ASFG 21st Century Learning Project Student Network and Internet Agreement form (appendix 5).

Students will be responsible for keeping their Notebook clean and ensuring they are charged every day before school starts.

Once students have been issued NoteBooks, they will receive ongoing mini-workshops on how to use and care for their NoteBooks. Over the course of time, some NoteBooks will be damaged and the technology department will do a regular review of the types of damage so that they may offer pro-active strategies to prevent further cases. These strategies will be provided in the workshops and posted on the ASFG 21st Century Learning Project website. Other workshop strategies will include strategies for storing work, using iCalendar to organize homework and manage time, and using the various tools in the iWork and iLife suites.

Students will be required to return their Notebook, power cord and battery during the school year for servicing, but they will be able to 'sign it out' during the summer if they so chose.

Printing

Students and teachers will be able to print to the library. We will also set up a printer network so that students can print to the lead technology teacher on their team. All students have a quota for printing and must pay for all printing. One of the goals of the project will be to reduce our reliance on paper and increase our use of electronic print. These results have been documented with numerous other laptop projects in both Canada and the US. We are expecting to find the same results at ASFG.

Maintenance of NoteBooks

All NoteBooks will be scheduled for an annual cleaning and refresh. This service will be provided by our technology support department and will be systematically scheduled during the school year. Students can expect overnight or 'Next Business Day' service on their machines. During this servicing, NoteBooks will be cleaned and their system will be reset. This will ensure that students are not storing or downloading inappropriate material or software onto their computers.

We will be using a software program called Apple Remote Desktop, which enables the teacher to simultaneously observe all of the NoteBooks being used in the classroom. This software has potential for safety reasons, but also for instructional purposes. Teachers will be able to view all software and downloads on a student's Notebook if they so wish. The Technology Center also has the ability to review student use of NoteBooks.

Trouble Shooting

Both students and teachers will have access to the ASFG Technology Work Order system that they would use for solving problems, which they cannot solve themselves. This system ranks work order requests in priority and allows both users and support staff to track requests. Preferably, we will work with students and teachers to collect and articulate solutions to problems as they are discovered and all of this information will then be posted on the ASFG 21st Century Learning Project website for easy reference.

The technology lead teacher on each team, Middle School Technology teacher, and Upper School librarian will all be available to assist students and teachers with day-to-day issues as they arise.

When a Notebook is broken or damaged, the student will take the machine to the Upper School library where the librarian will do a quick assessment to determine if the machine can be fixed on the spot or if it needs to be sent to the Technology Center for further analysis. If the machine cannot be fixed immediately, the student will be issued a temporary machine right away so that they can return to class and learning. The Technology Center will determine if they can repair the machine or whether it will need to be sent to the supplier for more extensive repairs. All such repairs fall under the 'Next Business Day' agreement within our warranty and lease agreement, so the supplier will ensure we have a replacement computer within 24 hours.

We will provide extra power cords at the ASFG Upper Library which students can check out with their credential for day-use if they forget a cord and require the use of electricity to get through the day.

We will have 5 extra NoteBooks available at the ASFG Upper Library which students can check out with their credential for day-use if they forget their Notebook, or it needs to be charged, or it needs to be replaced short-term for repairs.

Support Systems

Technical Support

The school already has the wireless capacity to deal with NoteBooks; however we intend to install three more access points (AP) in strategic areas near the teams' classrooms each year that we adopt NoteBooks for the next three years.

We have recently completed all of the recommendations from the electricity audit conducted on campus. However, we intend to update all electrical outlets in the teams' classrooms to grounded outlets.

We have already budgeted for upgrades to our internet provider, which should more than double our speed. This upgrade should be more than enough to accommodate the new NoteBooks for the next three years.

Our network capacity and storage is more than enough to accommodate all of the new NoteBooks for the entire project, particularly with the addition of two new Apple Servers.

Training for Teachers

The largest investment on teacher training will be in the first year of the project. The purpose of this year is to provide training opportunities for the teachers directly involved with the implementation of the NoteBooks (grade 7 team of teachers). These teachers will be offered a variety of staff development opportunities including traditional workshops, online courses, webinars, print materials, and self-exploratory approaches to learning. Time will be built into their staff development throughout the year for these teachers to work together and share both their successes and failures. The training will be focused on two phases: Phase 1 will be more theory-based due to the fact that students will not have NoteBooks for the first 5 months. Teachers will explore and research other laptop projects and collect an assortment of resources / strategies. Attention will be given to instructional, assessment, classroom management and time management strategies. Phase 2 will be practical-based due to the fact that students will have NoteBooks in the classroom. This phase will continue to focus on the areas above, but teachers will spend more time analyzing how the strategies actually work, sharing success and failure stories, and problem-solving issues as they arise. We will document as much as possible and use our Staff Development SharePoint site to store as many resources as possible (appendix 7).

The teachers from the first year of the project will become the 'ASFG experts' who will train the 8th grade team when they receive laptops half way through the first year of the project. We will begin to introduce the High School faculty to the project and training at this point as well, though not as intensively as the 8th grade team. The team model in Middle School provides for a great support network for teachers and therefore is a great place to begin the development of our own technology lead teachers.

We have built into the budget an experimental design to enable individual teachers to test a variety of software, online programs and technology tools to enhance learning. As the project evolves and teachers research / discover other tools which might improve learning, we would like to provide a system which allows them to investigate or experiment with these new tools. If the new tool seems to benefit our students' academic achievement and is cost-effective, then we could explore the idea of implementing the new tool with a wider audience. Examples of the types of experiments we would like to conduct over time include a review of the software usage (in particular Adobe Photoshop Suite), use of free Star Office to potentially replace Microsoft Office, numerous online subscription programs such as SuccessMaker.

Measuring the Success of the Program

1. Academic Achievement: We expect to see an increase in student achievement, particularly with respect to student writing (ERB) and specifically for boys. We will monitor student achievement through the analysis of standardized test data (MAP, Enlace, ERB)
2. Student Behavior: We expect to see a decrease in office referrals, an increase in teacher perception about student behavior, and a decrease in bullying specifically in classrooms. We will monitor the number of office referrals, survey teachers on their perception of student behavior, and review bullying survey results.
3. Photocopying: We expect to see a reduction in photocopying and paper usage, and therefore a significant decrease in spending on these resources. We will monitor the photocopying and paper usage by teachers on the team.
4. Teacher Perceptions: We expect to find teachers somewhat frustrated initially with the change of instructional strategies and design, but then to find an improved perception over teacher satisfaction. We will survey teachers throughout the process of implementation and then review end of year teacher satisfaction surveys.
5. Student Perceptions: We expect to find students more engaged in learning and more satisfied with their academic work production, specifically boys will write far more (quantity) and girls will produce better work (quality). We will survey students on their satisfaction with learning and specifically the use of NoteBooks in the classrooms.
6. Parent Perceptions: We expect to find parents more impressed with their child's engagement in school and quality/quantity of work produced. We will survey students on their satisfaction with learning and specifically the use of NoteBooks in the classrooms.

Regular and ongoing review of the project is required to ensure its successful implementation.

Based on our analysis of these results, we will decide whether to continue with this project. If results are positive, we may want to reconsider the timeline for implementation. It would be feasible once our systems for delivery, distribution, maintenance and training are developed and in place, to accelerate the implementation process. We could consider placing NoteBooks in the remaining Middle School classes in year 2 of the project and then placing NoteBooks in all High School classes in year 3. This would obviously require a re-prioritizing of the budget to provide the necessary resources.

Frequently Asked Questions

1. Will parents be asked to make a damage deposit?

For the initial implementation of the program we did not factor in the inclusion of a damage deposit. This is probably a worthwhile initiative as it would cause students to take more care with the school's NoteBooks. Parents and students will be required to User Agreement which acknowledges that they will be held responsible for full damage and/or replacement cost for any damages to the Notebook caused by negligence or mis-use. The damage deposit could be kept reasonable and would be fully refundable, assuming the student did not cause any damage to the machine, once the student exits ASFG. Parents of students who have used the Notebook for the full seven years may be asked to donate the damage deposit at the end of grade twelve to the 21st Century Learning Project or to the ASFG ESF fund.

2. How will teachers monitor student usage of the Notebook during instructional time?

Part of the teacher re-training is to rethink classroom management strategies and procedures. Teachers will need to create signals for opening and closing of NoteBooks to ensure students are fully listening during direct instruction. Teachers circulating around the classroom on a regular basis engaging with students during the learning and assessing process is invaluable, and helps ensure students are truly on-task. Additionally, we will be utilizing the Apple Remote Desktop software. This software may be invaluable as security or safety software, but it also can be used very effectively as an instructional tool.

3. Will all students use the same type of computers? What if my child has a more powerful machine at home?

For logistical and technical support reasons, all students will be required to use an ASFG-issued computer during instructional time. This enables teachers to plan appropriate lessons with a guaranteed type of software and maintain electronic communication via our network. Non-ASFG computers require a much higher level of technical support to ensure the safety and integrity of our network. These machines may be used outside of instructional time using the same procedures currently in place.

4. How will we educate parents about safe use of wireless NoteBooks at home?

Through parent orientation nights, parent school workshops, and electronic newsletter updates, parents will be continually updated on safety issues with respect to wireless Notebook usage at home. Parents will be encouraged to create a 'public working space or office' for students to work where they can be gently monitored. Using NoteBooks in the privacy of a bedroom is not recommended. Parents will be encouraged to supervise chat and email to ensure students are using the NoteBooks appropriately. Parents will be informed immediately of any concerns the school has about possible mis-use of NoteBooks.

5. What will we do about battery packs over time?

Most of the laptop projects were amazed that students were very conscientious about charging computers on a nightly basis, much as they do with their cell phones. Students will be educated about strategies for prolonging the life of the battery, such as not downloading large files while wireless. The batteries are projected to last for the duration of the three-year cycle, but some will inevitably expire prior to this time depending on usage habits. We will need to monitor the replacement life-span very carefully over the first three years to ensure our projections and budgeting are appropriate.

6. Can the Technology department manage such a large increase in NoteBooks?

We believe that for the first year of the project we can manage with the current level of staffing. During this year we will carefully monitor time commitments to this project. We are projecting the addition of one Tech Support personnel during the second year of the project and it is assumed one full-time technician should be enough to support the full implementation of the project. Once again, we will need to monitor our resources very carefully and adjust accordingly as the program expands.

7. Has consideration been given to reducing licensing costs through the use of alternative software programs, such as Star Office or ShareWare?

We will definitely explore the possibilities of using alternative software, but it was felt that for the initial implementation of this project it would be more beneficial to maintain the software which teachers and students are most familiar. Part of our experimentation budget will be used to explore alternative software.

8. Why not consider a partial implementation or pilot project?

There are different models which can be utilized to implement laptops into schools. One model places laptops in the hands of one class of students only. This model would not work well at ASFG for two reasons: which students are lucky enough to get new laptops; and, teachers would be required to prepare two separate lessons for every class – one that uses laptops and one that uses no technology. A second model commonly used is to place mobile carts of laptops into a school. The impact that this model has on a school is mixed. Laptops cannot be used on a daily and regular basis because not all students and teachers have unlimited access to the laptops. While the laptops get used, they do not permit teachers to alter their teaching styles in a significant manner because they cannot depend on having access whenever they need the laptops.

9. Isn't there a risk that we will be exposing our children to the 'dark side' of technology by allowing them so much access to laptops?

Yes. There is a risk that students will have more access to inappropriate websites, more chances to experience cyber-bullying, and more chances to becoming dependent on technology. However, all students at ASFG currently have access to technology at home and use it on a regular basis both academically and socially. Many students have cellular phones with internet access which they utilize on a daily basis. This project will enable ASFG to take a more pro-active and responsive role in educating students and, more importantly, parents about the risks of technology. We will have an opportunity to suggest to parents strategies they can use to monitor internet usage and signs/symptoms that they should be aware of at home. We can and will be monitoring student usage of the laptops and can work with parents when it is appropriate to help or support students who are at-risk.

10. What will happen to my child's Notebook during vacation periods?

NoteBooks will be assigned to students at the initial meeting and will remain in the care of that student during the three year lease of the computer. Our technology support personnel will be servicing the computers during the school year using an 'overnight' model. Students will keep the NoteBooks in their care during Christmas and Spring Break. Once re-inscription has been completed, students will be able

to keep their NoteBook during the summer vacation as well. Storage will be available at ASFG for any families not wishing to keep the NoteBook during vacation time.

11. Can my child upload software, movies and/or games onto the NoteBooks?

While on campus, the NoteBooks will be blocked from uploading any non-authorized software, movies or games. When a student uses their NoteBook at home they are physically able to upload unauthorized software, movies or games. However, due to licensing agreements and network integrity issues, ASFG cannot allow unauthorized uploading of any software, movies or games. NoteBooks will be checked on a regular basis for unauthorized uploads and machines will be 'refreshed' immediately.

12. Have you considered the impact that NoteBook use will have on the ergonomics of our children?

Yes. The NoteBook is an excellent alternative to the much heavier traditional laptops, so we do not foresee any issues with too much weight in students' backpacks. The current model of desks we are using in all Middle and High school classrooms is not ergonomically ideal for computer usage. We are investigating new models of furniture which are more conducive for computer usage and as we update classroom furniture, this will be one of the major considerations in the decision-making process.

13. Are teachers ready to implement laptops in every classroom?

Some teachers are probably ready to get started tomorrow. Others will need some time to research, train and design new methods of teaching. Some teachers will need intensive long-term support to use laptops as effective teaching tools. The implementation model we are considering provides teachers with laptops for up to five months before we introduce NoteBooks to students. During this time, teachers will work collaboratively to design methods for the effective use of NoteBooks as instructional tools. Teachers will continue to be provided with support after NoteBooks arrive in classrooms and our staff development program must be flexible to meet the various needs of all teachers.

Conclusion

We believe that the integration of one-to-one computers for all students in Middle and High school will have a significant impact on the learning process at ASFG. The small and collaborative nature of our staff, enables ASFG to create a professional learning community focused on the successful implementation of this project. Dialoguing about professional best practice and sharing stories of success and failure are inherent in the culture of ASFG. Building upon this culture and providing both teachers and students with technology-based tools, will enable ASFG to remain a leading educational institution in Mexico. Our students deserve the opportunity to work with the best possible learning tools available. We believe one-to-one computers are one of these tools.

