Technology Consulting in the Global Community
Final Report

Student Consultant, Ziv Piper & Nicole Ifill
Community Partner, Agahozo-Shalom Youth Village

Executive Summary

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I. About the Organization

The Agahozo-Shalom Youth Village (ASYV), founded by Anne Heyman, is a residential community that provides education for children who were orphaned during and after the 1994 genocide. The village was built on the model of model of the youth villages in Israel designed to help orphans from the holocaust. The goal of the village is "To enable orphaned and vulnerable youth to realize their maximum potential"

II. The Student Information System needs to capture a complete student profile

The existing Student Information System, Rediker does not capture a comprehensive picture of student performance at ASYV. The system also does not allow teachers to enter their grades individually, but requires the administrative assistant to spend more than 40 hours entering grades. Furthermore, Rediker does not have the capacity to capture and manage information for alumni after graduation.

Outcomes

- Created scenarios to understand culture and work
- Modeled flow of work
- Reviewed commercial and open source Student Information Systems
- Created Entity Relationship Diagrams (ERD) for future Student Information System
- Connected Grade Quick to Rediker
- Tested Grade Quick with Rediker
- Built MS Access alumni database
- Presented MS Access database to Tamar and J.C.
- Created Basic and Technical User Guides

Major risks to the sustainability of the task

- Lack of overall IT Plan
- Changing Staff
- High demand for IT support and low supply

III Sustaining the Intranet without IT Support

The existing intranet was built using HTML, PHP and CSS by Jack Bates. However, the staff members in administration and volunteers who update the intranet are not knowledgeable about these programming languages and tend to get frustrated when the intranet needs to be updated. This frustration often leads to the intranet not being updated in a timely fashion or non-technical members of the team spending extra time figuring out what when wrong. As a result the IT support team has to work with the non-technical members on the team to fix simple issues that become major problems when editing HTML, PHP and CSS code.

Outcomes

- User Tested the Intranet
- Created a WordPress Prototype
- Presented WordPress Prototype to Intranet Team
- Presented WordPress Prototype to Tamar Copeland
- Recreated layout of ASVY Intranet
- Restructured navigation in a logical order
- Created Basic and Technical User Guides

Major risks to the sustainability of the task

- Changing members on the intranet team
- Getting members to see the value of the intranet
- Members not supporting alternative ideas to update the intranet

Final Consulting Report

I. About the Organization

Organization

The Agahozo-Shalom Youth Village (ASYV) is a residential community in the East province, Ramagana, Rwanda. This is Youth Village provides education for children who were orphaned during and after the genocide. The village construction began the summer of 2006, and the first school year started January of 2009 with 125 students. There are presently 500 students attending the school.

Founder Anne Heyman led the building of Agahozo-Shalom as a way to empower the orphaned youth in Rwanda. Anne used a model of the youth villages in Israel designed to help orphans from the holocaust. The goal of the village is "to help the youth who had gone through a time of trauma to be healthy, self-sufficient, and engaged in rebuilding Rwanda."

There are two main entities in ASYV: Formal Education and Informal Education. The High School in the village is called the Liquidnet Family High School (LNFHS). This is a part of the Formal Education in the village, which will be explained in Programs. The other part is known as Informal Education, which focuses on after school life.

The school has a close relationship to the community of Ramagana. There are activities that allow the students to interact with the community in a beneficial manner (some of these activities are noted in Programs). ASYV also hires some of the people in the local community. ASYV not only focuses on the Education of its students but it also puts emphasis on the development of its Students, the community and its country (Rwanda).

At Agahozo-Shalom there are approximately 150 employees. The areas that Agahozo-Shalom concentrates on are Education and Development. ASYV mission can be seen clearly in their logo, *"Restoring the Rhythm of Life"*.

In the Village the students and staff are expected to live by it core values. These values include:
Role Model: *Live and lead by example in a positive way*
Support: *Help and encourage one another*
Interest of Child: *Base every decision on how it impacts the child*
Commitment: *Embrace the mission and go the extra mile*
Integrity: *Always be honest with yourself and others and act accordingly*
Respect: *Be considerate and mindful of others and the environment*
Learning Community: *Seek and maximize opportunity for growth and development*

Facilities

ASYV covers 144 acres, and the boundary is fenced completely around. ASYV is divided into two sections: the village area and school area. The two sections are about 0.3 miles apart. The village has ___ residential houses which include student, guest and staff houses. There are two learning centers. One houses a science lab, media lab and a computer lab. The other houses the Arts, which include music room, recording studio, sowing room & visual arts room. The village administration building is located right next to the learning centers and the clinic is next to the administration building. There is a storeroom behind the administration building, which is the storage of the necessities/essentials, maintenance items and the donations given to the village. In the village computer Lab there are 16 computers, in the media lab there are 5 computers and in the recording studio there are 3 computers accompanied by recording equipment. There is also a computer in each of the student residential homes in the village.
The school area has the high school building, which consist of:

17 classrooms
3 Science labs
3 computer labs
1 server room
1 study lab
1 library
3 administration offices
1 volunteer room
1 social worker/counselors room
2 teacher lounges

There was a donation of 200 computers from South Korea, which were allocated between the residential houses; the administration offices (both at the school and village); the library and the computer labs at the high school. At the school Computer Lab1 has 33 computers, Lab2 has 33 computers and, Lab3 has 27 computers. In the administration offices at the school there are 3 computers (one in each admin office).
There is a server room at the school, containing 3 windows servers, 3 other servers (ASUS e-box machines), a UPS, a switch, a Linux server that serves as a router, a caching proxy, and voltage regulators.
The physical security of these offices and rooms are all the same. The only line of defense is a lock and key on the doors and a simple lock mechanism on the windows (if there are windows). All the computers whether administrator, staff or student is password protected. Only the administrators of the computer can make changes to the system. For the administration building the Chief Operating Officer Eric and his assistant Noella have separate offices. JC the village director also has an office for himself. The store manager Alice and the Accountant Christina shares an office.

Electricity is not constant and power outages occur regularly. This is the main reason for acquiring many voltage regulators, especially for the omnidirectional antennas.

Programs

The educational programs are divided into two groups, formal education and informal education. For formal education the school years are divided into four years: Enrichment year, Senior 4, Senior 5 and Senior 6. The Enrichment year students review the material for Senior 1, 2, and 3 years, which are the last three years of mandatory education in Rwanda. They have an Information Technology/ Basic Computers class, where they learn about basic functions of a computer and practice typing. For all Students the school year is divided into three terms. At the third term of the Enrichment year, students choose a combination. According to what each student selects as their combination, they study different materials about computers. The combinations offered in LNFHS are:

1. Math- Physics- Computer Science
2. Math- Economics- Computer Science
3. Math- Biology- Chemistry
4. Math- Economics- Geography
5. History- Economics- Geography
6. English- French- Kinyarwanda

All students learn about office applications, such as Microsoft Excel, Word, and PowerPoint. Students studying one of the two combinations containing Computer Science learn about programming in C or C++ and Microsoft Access database.

The Informal Education Department has a program called "Tikkun olam," which literally translates to "repairing the world." The program offers students an opportunity to engage in social services and community service. It involves performing service to the community in a couple of areas:

-Teaching Children English in the nearby schools.
-Assisting in administration work and taking care of sick in nearby clinic.
-Repairing and building houses for the poor in the nearby village ().
-Other projects as needed by the community.
-One Laptop Per Child (OLPC) training/certification.
-Working with students in the nearby primary school with OLPC.

Every week, Senior 5 and Senior 6 students choose one of the service areas to participate in. ASYV plans to expand this program further, in the future.

Also for the informal education, every student must choose a sport activity and an art activity/ Enrichment Program. Art activities that utilize a computer include:

-Digital Media and Recording (audio recording of the performing arts) -
Photography and Movie making

The informal education also includes club activities. The Information Technology club is active and meetings are held 2 times a week Monday & Thursday. Some activities of these clubs include operating and maintaining the computers in the computer labs, and offering technical support for the village.
There is a program called Family time. From Sunday to Thursday each family get together in their

respective families and have activities, discussions and make announcement. At the end of the week (on Friday evenings), ASYV have another program at the end of each week called village time. This is a program where the whole village gathers and have a show, watch the news and enjoy each others company.

Staff

Anne Heyman is the founder of ASYV. She is a native of South Africa, and has been engaged in philanthropic work globally. She was the former president and co-chair of the Board of Directors of Dorot, and has worked with Abraham Joshua Heschel School in New York, Young Judaea, Tufts University Hillel, and the Jewish Community Centers of America.

Tamar M. Copeland is the Executive Director, and has worked for nonprofit organizations for more than twenty years. She helped The New York Women's Foundation, and brought significant increase in fundraising revenue. She is currently the chair for the Africa Initiative at Barnert Temple in Franklin Lakes, New Jersey.

-Jean-Claude is the Village Director, appointed 2011.
-Eric Salongo Kalisa is the Chief Operating Officer (COO).
-Sonia Mikanagu is the Director of Health and Wellness.
-Mara Berde is the Director of Volunteer Services
-Alain Munyaburanga is the Director of Philosophy, Education, and Training.
-Jean-Pierre Nkuranga is the Director of Informal Education. He was involved in building the Association des Etudiants Rescapes du Genocide, an association committed to help survivors of the genocide. He was the national coordinator of Uyisenga N'Manzi, an N.G.O. working to help orphans.
-Sylvia Gata-Salama was the Director of Finance and Administration. She manages budget development, human resources, security, and logistics. (ASYV is currently looking for a replacement)
-Bonaventure Muiyeneza is the Director of Formal Education.
-Celine Uwineza is Director of Human Recourse.
-Noella Nyamuniga is Village Administration Assistant.
-Lovell Biira is the Schools Administration Assistant.

The financial accountant Christine Nzambazawe uses software Quickbook to manage financial data. She also uses Microsoft Access to report to the Social Security Fund of Rwanda, which requires reports from organization with more than 10 employees.

There are 9 long-term volunteers along with Sika and Tamar. The volunteers offer help in the art center, science center, construction, landscape, farming, and school administration. The volunteers all have laptops and use it for Internet access and Microsoft Office applications.

The staff related to teaching is divided into three groups: teachers in charge of formal education, counselors in charge of informal education, and housemothers in charge of student life. There are 29 teachers, 22 counselors, and 32 housemothers.

All staff members, with the exception of some of the housemothers, have their own laptops. They have access to Internet and Microsoft Office applications. The teachers use the computer to access

Internet and email. They also use Microsoft Office applications to plan lessons and write exams. The teachers input the midterm grades and the final grades into an Excel Document then send their grade reports to Sika Somberg, a long-term volunteer in charge of inputting data to Rediker, or Biira Lovell, the administration office worker.

The counselors use their computers like the teachers. They write reports and plan classes using Microsoft Word or Excel. After each class, counselors must submit evaluations of each student in a Microsoft Excel spreadsheet. Jean-Claude Parisien, Assistant Director of Informal Education, collects the reports and puts them together to report to Jean-Pierre Nkuranga, Director of Informal Education. There is no longer a counselor for Digital Media and Recording arts but students are still actively using M-Audio Plus and Logic Pro along with Fruity Loops (a beat making software). There is neither a counselor for Photography and Movie-making activities but Jean-Claude Parisien advises the TV club which uses software Adobe Photoshop and Pinnacle Studio. This club is responsible for broadcasting ASYV news and clips from the Rwandan local news every Friday.

The housemothers use the Internet mostly for email. They also use Microsoft Word and Excel to write reports and submit them to the administration office. Some of the staff members, especially the housemothers, are not familiar with the computer or Microsoft Office applications. The school has unlimited licenses of Windows XP and Microsoft Office 2007 and has freeware anti-virus software (e.g. Avira). Now housemothers and students are more aware about what software and security is available to them. Currently, no training about computers is available for specifically the housemothers.

Technology Infrastructure

Equipment	Name	Operating System	Specification	IP	Location	Function
Server	Earth	Windows Server 2008 R2	CPU: Intel® Pentium® D CPU 2.80 GHz 2.79 GHz RAM: 4.00 GB	192.168.100.43	School server room	Main DNS server, file server
Server	Sky	Windows Server 2008 R2 64 bit	CPU: Intel® Core™ 2 CPU 6400 @ 2.13GHz 2.13 GHz RAM: 4.00 GB	192.168.100.40	School server room	Secondary DNS server, file server
Server	RW0REDIKER	Windows Server 2003 R2 64 bit	CPU: Intel® Pentium® D CPU 2.80 GHz 2.79 GHz RAM: 2.00 GB	192.168.100.45	School server room	Rediker server, Windows update server
Server	Fire.lan	Windows XP SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	192.168.100.8	School server room	Apache Traffic Server/ Caching Proxy
Server	Wood.lan	Windows XP SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	192.168.100.7	School server room	Ntop, Nagios, & Cacti, Network Management Server
Server	Heart.lan	Windows XP SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	192.168.100.9	School server room	Intranet
PC	SLC-LAB-01	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	Homework, research, assignments
PC	SLC-LAB-02	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	from Enrichment Programs, internet,

PC	SLC-LAB-03	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	C++ programming
PC	SLC-LAB-04	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-05	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-06	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-07	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	Homework, research, assignments from Enrichment Programs, internet, C++ programming
PC	SLC-LAB-08	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-09	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-10	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-11	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-12	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	

PC	SLC-LAB-13	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-14	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-15	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	SLC-LAB-16	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center	
PC	RECORDINGS TUDIO	OSX 10.5.3 Running on a DELL	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Music center	Recording class in Enrichment program
PC	SLC-TVLAB-1	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center TV Lab	Video and Photo editing in Enrichment program
PC	SLC-TVLAB-2	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center TV Lab	Video and Photo editing in Enrichment program
PC	SLC-TVLAB-3	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center TV Lab	Video and Photo editing in Enrichment program

PC	SLC-TVLAB-4	Windows 7 Professional 32 bit	CPU: Pentium® Dual-core CPU @ 3.00 GHz 3.00 GHz RAM: 3.00 GB	DHCP	Science Learning Center TV Lab	Video and Photo editing in Enrichment program
PC	Agahozo-2	Windows XP Professional SP3	CPU: Intel® Pentium® M professor 1.3 GHz 1.29 GHz RAM: 512MB	DHCP	School administration office	Microsoft Office applications, internet, Rediker data input
PC	LAB1PC1	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	Microsoft Office applications, internet, typing practice, Formal education IT class assignment, C++ programming 1
PC	LAB1PC2	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB1PC3	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB1PC4	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB1PC5	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB1PC6	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB1PC7	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	

PC	LAB1PC8	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC9	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC10	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
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PC	LAB1PC13	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC14	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC15	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC16	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC18	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab

PC	LAB1PC19	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC20	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC21	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC22	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC23	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC24	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC25	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC26	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC27	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC28	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab

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PC	LAB1PC25	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB1PC26	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab

LAB2

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PC	LAB2PC2	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB2PC3	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB2PC4	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB2PC5	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB2PC6	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB2PC7	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
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PC	LAB2PC24	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB2PC25	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB2PC26	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB2PC26	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab

LAB 3

Equipment	Name	Operating System	Specification	IP	Location	Function
PC	LAB3PC1	Windows 7 32bit	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	Microsoft Office applications, internet, typing practice, Formal education IT
PC	LAB3PC2	Windows 7 32bit	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	

PC	LAB3PC3	Windows 7 32bit	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	class assignment, C++ programming
PC	LAB3PC4	Windows 7 32bit	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC5	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC6	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC7	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC8	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC9	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC10	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC11	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	
PC	LAB3PC22	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab	

PC	LAB3PC23	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC14	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC15	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC16	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC17	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC18	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC19	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC20	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC21	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC22	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab

PC	LAB3PC23	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC24	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC25	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab
PC	LAB3PC26	Windows XP Professional SP3	CPU: Intel® Atom CPU N270 @ 1.60 GHz 1.61 GHz RAM: 1.00 GB	DHCP	School computer lab

Technology Infrastructure: Wireless Equipment

IP Address	Host Name	Location	Hardware	Station Mode	SSID	Channel
10.10.10.1	School	School	Powerstation2	Access Point	school	1
192.168.100.254	BackBone	School	Nano Station M5	Access Point	backbone-p2mp	36
10.10.20.1	dining-rtr	Dining Hall	Nano Station M5	Station	backbone-p2mp	36
10.10.20.2	dining-AP	Dining Hall	Nano Station 2	Access Point	Dining Hall	11
10.10.30.1	residence-rtr	Village water tower	Nano Station M5	Station	backbone-p2mp	36
10.10.30.2	residence-AP	Village water tower	Powerstation2	Access Point	residence	1
10.10.30.15	house16-station	Village residential area	Nano Station 2	Station	residence	1
10.10.30.20	resi-wds-L-Station	Village residential area	Powerstation2	Access Point WDS	resi-wds-l	6

10.10.30.21	resi-wds-L-ap01	Village residential area	Powerstation2	Access Point WDS	resi-wds-l	6
10.10.30.22	resi-wds-L-ap02	Village residential area	Powerstation2	Access Point WDS	resi-wds-l	6
10.10.30.45	East Lodges-Station	Village residential area	Nano Station 2	Station	residence	1
10.10.30.46	Lodge East AP	Village residential area	Powerstation2	Access Point	resi-lodgeE	11
10.10.30.31	Resi-office-station	Village residential area	Nano Station 2	Station	residence	1
10.10.60.11	Admn-Office-Printer-Station	Village administration office	Nano Station 2	Station	Administration	6
10.10.50.1	Science-Center-Station	Science Learning Center	Nano Station M5	Station	backbone-p2mp	36
10.10.50.2	UBNT	Science Learning Center	Nano Station 2	Access Point	Science Center	6

Technical Management

When there is a computer related problem, people in ASYV look for Jack Bates or Kabirigi Deo. Jack Bates is a volunteer who has been in the village for about six months so far. He is in charged of managing the technology infrastructure, including the servers in the server room at school, all the wireless network stations, and other networking equipment. He also communicates with the company Liquidnet in New York, asking for advice and/or reporting problems. Kabirigi Deo was a computer science teacher in the school but now is the head of the IT staff and leads some of the IT professional skills activities. He is also in charge of all the school computer labs, the labs in the village and the IT club. Both Jack and Deo fix individual laptops of the staff when brought to them and are basically to go to guys for any computer problems. The repairs mainly happen and work on an ad-hoc basis. Currently, they do not log the problems that occur.

The servers in the server room have an automated backup system. Two of the servers are used one as the main DNS and the other as the secondary DNS. All three servers create backups regularly, and stores the files in the secondary hard drive of the secondary DNS server. The third server downloads Windows update, and distributes to all the computers in the network. Each computer in ASYV automatically updates other software and virus definitions when they are connected to the Internet.

Technology Planning

Jack Bates and Kabirigi Deo are responsible for technology planning at ASYV. Technology experts from Liquidnet came to Rwanda the week of June 5th 2012 to assist them both with wireless issues. The ASYV team, CMU team, and Liquidnet team did some maintenance of the wireless equipment, upgraded some of the Omni directional antennas, expanded the cache, and troubleshoot some of the broken network equipment. Deo is mostly involved with the technology planning at the high school.

In February of 2011, Mike wrote a technology plan for the entire village. The plan identified technical issues and opportunities at ASYV such as stabilizing the wireless network and increasing the RAM on the servers. The plan also listed goals for a technology infrastructure that can support the mission of the organization.

During the same period, Mike also submitted a proposal for wiring the computer lab located in the Science Center. The proposal had three goals: Stability, Reliability, and Ease of use. These three goals would help create an attractive learning environment and ensure that the lab satisfies the needs of the students. The executive leadership approved the proposal, and all the equipment listed on the proposal was purchased. Mike completed the wiring in May of 2011.

Jack Bates came in December 2011 and after a few months he along with the help of Deo, was able to get a caching proxy up and running to help accelerate service requests in order to increase the speed of the network. Jack uses programs by the name of Nagios, Ntop and Cacti to monitor the connection, and network at ASYV. One of the problems is that some of the access point's power sources are being disconnected because students have open access to the power strips.

Internal and External Communication

Information is primarily communicated orally from person to person or person to group. In the dinning hall there are two giant posting boards. There are no telephone landlines at the village. However, most of Rwanda has cell phone coverage. All employees and volunteers at ASYV have personal cellular phones. Therefore, cell phones are the second method of communication.

The leadership at ASYV wants email to become one of the main methods of communication among employees. That method of communication seems to be making some strides but it still needs much improvement. Email is a new way of communicating that has just been introduced to the professional culture in Rwanda. Administration believes that email will bring efficiency to the organization because it is fast, easily archived on a server, convenient, and inexpensive. Every employee has been given an email address on the organization's domain (asyv.org), but most of them are not using it as a method of communication. Internet access sometimes can be an issue as well.

Under the direction of Celine and the assistance of Jack, and Dorea an Intranet has already been launched and introduced to the Informal staff. This is access via the ASYV network and does not need Internet access. The intranet is a set of static pages built using html and PHP. One of the intranet goals is to enhance communication, sharing of files and administrative processes in the village. There are no visible mechanisms in place to ensure data security.

ASYV has a website that is hosted in the United States (New York). The website can be visited using any of the following two domains: www.asyv.org and www.agahozo-shalom.org. It provides relevant information about ASYV such as the mission, the history, the educational programs, and the development model that has been put in place. It also has a section for news and a section for events. The news section is updated regularly with news from the village or guest posts from visitors. The section for events promotes the latest events related to ASYV.

Information Management

The village is growing, and information is being managed in a multitude of ways. There are three dedicated servers (earth, sky, and sea) that are used to manage data. All the workstations at ASYV rely on these servers for directory and domain name services. Staff and students also have the ability to store files on one of the servers (earth). As a special precaution, all the disks on the servers are mirrored using a RAID scheme. It prevents the system from being unavailable when one of the disks fails.

At the school, Administration Plus, produced by Rediker Inc. is used to manage information. Administration Plus, better known as Rediker at ASYV is a Student Information System that has useful features that include:
-Student Information Database
-Attendance
-Scheduling
-Report Cards
-Photo ID Cards
-Library Management
-Cafeteria Management
-School Health Management

Only the following features are currently being used at ASYV: Student Information Database, Scheduling, Report cards, and Photo ID cards. Sika Somberg and Biira Lovell manage Rediker, and they have processed and stored just about four years worth of academic data (test scores and student grades).

However, Rediker has some limitations that are affecting its use at ASYV. The system can only be accessed through a client application that must be installed on a computer. The documentation does not explain very well the system's functionalities, and the interface is not intuitive and teachers find it complicated. At the end of each term, they submit Excel spreadsheets containing names and grades to Sika and Biira, who subsequently enter the information into Rediker line by line.

The staff at the school and village libraries uses Excel spreadsheets to manage and track items. The libraries presently has about 1,800 books and 42 CDs and DVDs. Mike had developed a database using Microsoft Access to help with the cataloging and circulation of items, but it is not being used by the staff.

At the village's clinic, all medical records are managed via papers, which are stored in file cabinets. The staff at the clinic would like to digitize the records. They would like to store the information in a database for easy and fast access. A database system would also allow them to share medical records safely among the nurses and analyze the information more accurately.

Business Systems

Christine Icyigetse is in charge of accounting at ASYV. She's responsible for recording, reporting, and analyzing the organization's financial transactions in Rwanda. She does payroll as well. Christine has been using Microsoft Excel to accomplish all these tasks since the village was founded. She also uses Microsoft Access but only to report to the Rwandan National Social Security Fund. Organizations in Rwanda with more than 10 employees are required to use Microsoft Access for reporting to most government's agencies.

ASYV has recently decided to transition from Excel to Quickbook 2006 which is the current version being used at ASYV. Quickbook 2006 allows Christine to automate some of her reporting tasks and consequently save time. She will also be able to take advantage of new features that are not available in Excel such as the snapshot function. However, she will still use Excel for payroll because Quickbook does not support the Rwandan tax code. There is an issue with keeping track of the inventory but Quickbook has an inventory system but it is not being used. This is more of an Organizational Issue rather than technical.

[Some Information in this document was taken and updated from Student Consultants Alimou Bah & Jin Seop Kim's report from 2011]

II. The Student Information System needs to capture a complete student profile

Motivation

The Rediker database is ineffective for capturing and updating student information at ASYV. It does not provide the village with the capacity to manage complete student information. The system is primarily used to enter grades and produce reports cards, but this process is very inefficient and tedious. Minimal information about students is stored in the database and there is no way to record information from other departments such as Health and Wellness and Informal education. In addition, Rediker does not allow the village to track and update information for graduating students.

The system overall is very difficult to use such that the administrative staff has to constantly reorient themselves with the system and spend time teaching new staff the same processes repeatedly. Simple functions, such as displaying a list of student names or filtering students by class, are either very difficult to find or non-existent. Therefore, Rediker's unintuitive design increases the amount of work the administrative staff does when dealing with student records.

Entering grades and generating reports is also very time consuming for the administrative staff. We estimated that it takes more than 40 hours to enter grades every term. We discovered that Rediker could be connected to another application called Grade Quick to make the process of grading more efficient. With Grade Quick, teachers can enter their own grades and the administrative assistant would only need to the import the grades by clicking a button.

Although Rediker has an additional component for grades, it does not allow ASVY to capture additional information about student's health and wellness or their informal education participation. Students' grades reflect one aspect of their performance, but it should be paired with their progress in health, hobbies and professional skills to create a compressive picture. This information is key to measuring the success of ASYV in fulfilling their mission of "allowing orphaned and vulnerable youth to realize their maximum potential" and to improve the programs in the village.

As the village is experiencing its first graduating class, there is no component of the database that allows the village to track alumni data. This data is important for the village to connect with alumni and to measure the impact of ASYV alumni in the community.

Outcomes

We spent several weeks meeting with the current users and potential users of Rediker in Formal Education, Informal Education and Health & Wellness. We took the time to understand the social context of the work by creating storyboards (**see Appendix A 1.0-1.3)** and the flow of information from user to user by creating a work flow diagram (**see Appendix A 1.4**). With a better grasp of the use of Rediker, we listed the essential functionality, the desired functionality and potential functionality for a future database **(see Appendix A 1.5).** With these required features, we created an Entity Relationship Diagram (ERD) to map out the data for Formal Education, Information Education, Health and Wellness and Alumni Tracking (**see Appendix A 1.6 -1.9**).

While mapping the data, we had several meeting with J.C. and Tamar. First we discussed the steps need to get the missing licensing for Grade Quick. After our conversation we followed up with the previous IT volunteer Mike Liese and we retrieved the Grade Quick license. After receiving the license we began to test the Grade Quick and Rediker grading component. We found that Grade Quick was easy to use but it was very difficult to connect to Rediker to Grade Quick. We attempted to connect the two programs but found little success transferring data between Rediker and Grade Quick (**see Appendix A 2.0).**

Next, we discussed the importance of having a starting point to track alumni data. After a couple meetings and discussions, we gathered that alumni tracking represent both a businesses need and a village need. From the business perspective, the data from alumni tracking will provide evidence that ASYV is worth the investment. From the village perspective, alumni's tracking helps to reconnect graduating students to the village and to promote ASYV locally. So, we began to evaluate which available platform would best support the village to track alumni data.

We evaluated Microsoft Excel and Access since these tools were readily available in the village and many of the existing staff members were familiar with them. We choose Microsoft Access since it provided a good framework to build a database in approximately three weeks compared to Microsoft Excel.

We took an iterative approach to develop the alumni database with Moses Ilunga, the newly hired career advisor. We worked on the system in a series of three sprints where we developed the database, showed Moses the content and got feedback. Moses gave us insight into information that was missing or inappropriate as well the as types of reports that could be generated in the future.

We tested the database using sample data for current students to ensure that the system worked effectively. We placed the database on the server and tested it from several computers throughout the village. Deo assisted us in giving users from Formal, Informal Education and Administration rights to access and update the database.

After testing, we added sample data for one of the six families, to give Moses a starting point for collecting data. We suggested that he visit the families during family time to verify student data and update student information.

The alumni database is sustainable because we worked collaboratively with Moses to get feedback and Deo to get technical support. The database is also accessible by other staff in the Formal, Informal and Administration departments. However, we were only able to create simple reports that would not cover the width of information that the village needs. In addition, the database does not currently support events or records for staff updating content.

For the larger student information system, we were unable to get estimates of cost and time to develop the system. We have found resources such as Geek Cops http://www.iesc.org, Development and Solutions Organization http://dsoglobal.org/ that work with non-profits to develop systems. We have also spoken to individuals at and Carnegie Mellon University such as our advisors Joe Mertz and local CEO of Nyaruka Nick Pottier. These resources and individuals would provide a good reference point for sourcing developers and estimating price. We believe that estimating the time and cost of building the system requires making this task an action item both in the local ASVY village and the New York office.

The alumni database in tandem with the data mapping for a future Student Information System, will help the respective departments to save time entering duplicated information and give users the direct responsibility of producing reports instead or relying on IT staff.

Recommendations

Make the future information system an action item in Rwanda and NYC

For the future student information system, we recommend that ASYV source developers to build a student information system that encompasses informal education, health and wellness and alumni management since the current system is inadequate and inefficient in creating a comprehensive student profile. We think that the best way to move this initiative forward is to make this task of recruiting developers to build the system, an action item for the village and the NYC office. We suggest that the village look into its networks such as local Rwandese developers, Jewish Developers, Carnegie Mellon Rwanda projects and future volunteers to select developers. If one person with the strongest connections in each network contacts developers then the team can come together to discuss all the options. We believe that this approach of searching for developers within existing networks will provide a strong relationship to for technical support in the future.

Decide which metrics need to be evaluated in the alumni database

For the alumni database, we recommend that the Formal and Information Education departments and the NYC office meet to discuss and decide the information that should be tracked in the alumni database. This process of selecting metrics is important to the village because the data that is tracked should be relevant to the goals and needs of the departments.

Define roles each method of communication for contacting alumni

In addition, we suggest that the Informal Education staff define which methods of communication such as phone calls, Facebook and emails are most effective in updating information, planning events and keeping alumni updated about ASYV news and events. Defining the purpose of each method of communication is important to reach the widest possible audience in the most of graduating students in the most appropriate way.

III. Sustaining the Intranet without IT Support

Motivation

The intranet at ASYV is a collaborative effort by the staff and volunteers, Celine Uwineza, Jack Bates, Kabirigi Deo and Dorea Jackson. The goal of the intranet is to bridge the gap in communication between departments such as Informal Education, Finance and HR. The team spent three months to get the site up and running. The site was functional when we arrived in the village, but we found that the non-technical members of the team experienced difficulties updating the content and the majority of people in the village were not using the intranet. We also saw potential for the intranet to be used as a learning resource for members of the village, but this potential was not being realized.

The current method of updating the intranet is to edit PHP and HTML code. Therefore, Dorea would spend approximately 1-hour updating photos for past village events. She would resize the pictures, upload them to the server and edit the PHP code to update the images. Occasionally, she has deleted or move and important file by accident and this would result in the pages to loading incorrectly and one occasion the whole intranet disappeared. When we came to the village, Dorea expressed the issue of the amount time spend updating the intranet and asked if we could find an easier way to update content.

We also found that many of the people in the village were not using the intranet. We realized the intranet was new and most people heard about it for the first time at staff meetings. However, we also found the intranet challenging to use when we first explored the site. So, we kept in mind that the layout of intranet could be hindering users from find relevant information.

After spending more time in the village and understanding the problems people faced with technical support, we saw that the intranet could be a potential learning resource of the village. For example, students in the IT club can refer to tutorials on the intranet to remove a virus from a computer.

When we combined the difficulty to update the intranet with the lack of use and undiscovered potential, we realized that the intranet would not be sustainable if content is outdated, people do not know how to use it and they have no motivation to use it.

Outcomes

Initially, we explored the intranet independently to get a better feel for the design and content the team generated. Next, we met with the team to discuss the goals of the intranet. As a result of our evaluation and discussion, we conclude that user testing was the best approach to gage the usability and usefulness of the site. We tested the intranet with of 26 users in the village, a combination of staff, volunteers, and students. We observed how the users attempted or completed the tasks, without assisting them. We complied the results (**see Appendix C 1.0**) and found that users had tremendous difficulties navigating the site. Once we presented the team with the results and suggestions to improve the intranet, they began to make a plan to update the intranet.

After discussing the result of the user testing, we made a suggestion for the second time that the team consider a Content Management System (CMS) to make the intranet easier to update. The majority of the team found the idea to be plausible, but we received strong resistance from Jack. He suggested that the idea of a content management system was a solution without looking at the problem. We posed the idea of creating a demo of WordPress and testing it with the team to compare the usability of the CMS to the existing PHP code. However, Jack wanted to focus on creating shortcuts with the current PHP code to make the intranet easier to update. His reasoning was, based on his experience with Drupal; the WordPress solution was more advance than was necessary for a small village intranet.

On the first occasion that we received resistance from Jack, in the second week of the project, we decided to look at the code to see how difficult it was to update the PHP, HTML and CSS files. We found that the code was very disorganized and difficult to update. So, after we received more resistance from him, on the second occasion, we decided to create a prototype to show the non-technical members a demonstration of the CMS. This was done since the non-technical members were not familiar with the CMS and we want to show them the benefits compared to updating PHP code directly.

We built the intranet prototype using the WordPress CMS. We choose WordPress because it gives users a friendly interface to edit content and is very simple compared to other available CMS solutions like Drupal and Joomla. In addition, Word Press allows permissions to be granted for more than one individual to edit the site's content. This means that ASYV could appoint almost anyone with basic word editor skills to maintain the intranet.

After presenting the team with the intranet prototype, they were able to update photo galleries in 3 minutes using Word Press, which took more than 30 minutes with code. The team's response after using the demo was to get it installed as soon as possible. We did not think it was feasible, since we had less than two weeks left. So, we agreed to talk with Deo about the next steps to take to install Word Press. However, we were unable to meet with Deo due to his high demand for technical support.

On August 6th, we also presented the Word Press demo of intranet to Tamar Copeland during her visit to the village. She was very familiar with Word Press since it is currently being implemented to update the new ASYV website. We expressed the resistance we received from Jack and she gave us the "go ahead" to get it done. Since we had only a week left in the village, she asked if we could work closely with Deo and Jack, as necessary, to get at least the Word Press framework up and running.

We met with Jack and Deo to figure out how to get the Word Press site up and running in the remaining days of the project. It was imperative that we got help from Jack to transfer the site since he wrote the code. Unfortunately, he claimed to be busy with other projects and he left us hanging. So, we chose a word press theme and attempted to recreate the intranet and continued to work without his support.

We configured the intranet using a 'Mac, Apache, MySQL, PHP' server or MAMP server. The WordPress theme 'responsive' was used as a template. We then edited the CSS and PHP files in order to make it fit the design and layout needs of ASYV. The 3 main servers used at ASYV are all windows servers. This meant that the server we used to rebuild the intranet has to be changed in order to host the intranet on their local server. The recommendation is that a WAMP server is used or alternatively an XAMPP server. Due to the lack of help from Jack we were unable to get the server for the new intranet up and running.

We also worked closely with Noella to review the information architecture of the intranet. Therefore, we removed information that was unnecessary and adjust the layout of the navigation along with the content on some of the pages. Four pages were created in order to introduce those three important features. The 'About' and the 'Contact' pages were added. The calendar page was added and a calendar widget from word press was embedded into it to showcase the upcoming events and also past events. The 'ASYV News' page was added so that users are not confused when looking for news in the village (**see Appendix C 1.3- 1.6**).

We believe that the intranet powered by WordPress will be sustainable, but we are uncertain that the CMS will be published. Since we were unable to get the files published before leaving, the responsibility lies in Jack and Deo's hands. Given Deo's busy schedule and Jack's resistance to the CMS there is a possibility that new intranet site may not be deployed.

Recommendations

- Ensure that the new intranet files are placed on a server and made accessible to the village.

The files and server installation for the new intranet have been turned over to Deo along with some resources that would guide one through the setup process. The current intranet should be discontinued and the new content management system should take its place. Updating the intranet by code is not practical. It is not only time consuming but there is also a greater chance to make errors. Most of the staff does not have knowledge of editing HTML, CSS and PHP codes, so finding an individual to update the intranet constantly would be a serious challenge. Having a content management system is not only feasible but it also adds sustainability to the intranet. It does not require those updating it to be technical. We propose that one machine is dedicated to broadcasting the intranet. This provides adequate space for the information that will be archived.

1. Get the server needed for the intranet installed on one of the machines.
2. Transfer the files for the intranet onto the server.
3. Migrate the database for the intranet onto the server.
4. Set up the paths within the site according to the name of your server.

- Ensure that updating and maintaining the intranet is not the responsibility of one individual.

To ensure sustainability, we suggest that Deo and Jack work together on this task. Jack has adequate knowledge of the servers because of his direct involvement with the launch of the first intranet; and Deo has some experience with word press so his involvement would prove to be valuable. Also, due to Jack's resistance to content management system could lead to the lack of motivation on his behalf. If the completion of the task is totally dependent on him there is a possibility that it would not be completed. A way to ensure this does not happen is to have someone in management track the status of deploying the new intranet.

- Create a process or policy on how information approved and uploaded on the intranet.

If the content that is uploaded to the intranet is not properly managed the intranet could be seriously misused. Without a proper process, inappropriate content could be published. We propose that the intranet team and some of the administration/management discuss safeguards and processes that could be put in place to ensure that no inappropriate information gets uploaded to the intranet.

- Grant two individuals administrative access to edit and delete data.

This is a way to ensure that there is a back up plan in place. For example, if Celine has called in sick and she is accustom to updating the intranet, Noella should be aware of what should be done and she should also have access in order to complete the tasks.

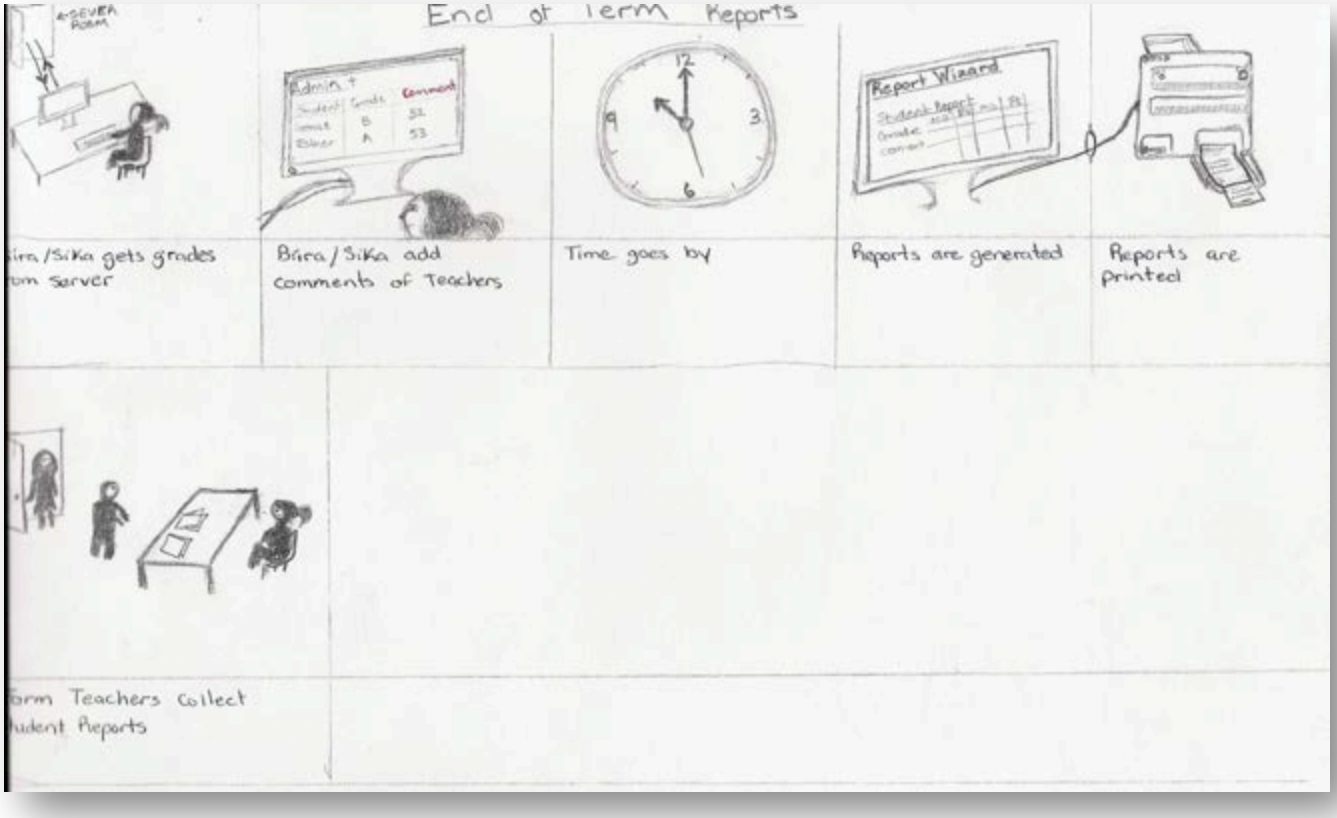
About the Consultant

Ziv Piper is a second year Master student. Majoring in Information Security Policy & Management at Heinz College, Carnegie Mellon University. He one day wants to be an Entrepreneur and own his own security consulting firm. His focus is on Web & Network security but he enjoys Web development as a hobby. After graduation he is looking to enter the Job market before thinking of perusing a Doctoral degree. He thinks that having balance among the Physical, Spiritual, Academic and Social aspects of life, allows one to live a successful life.

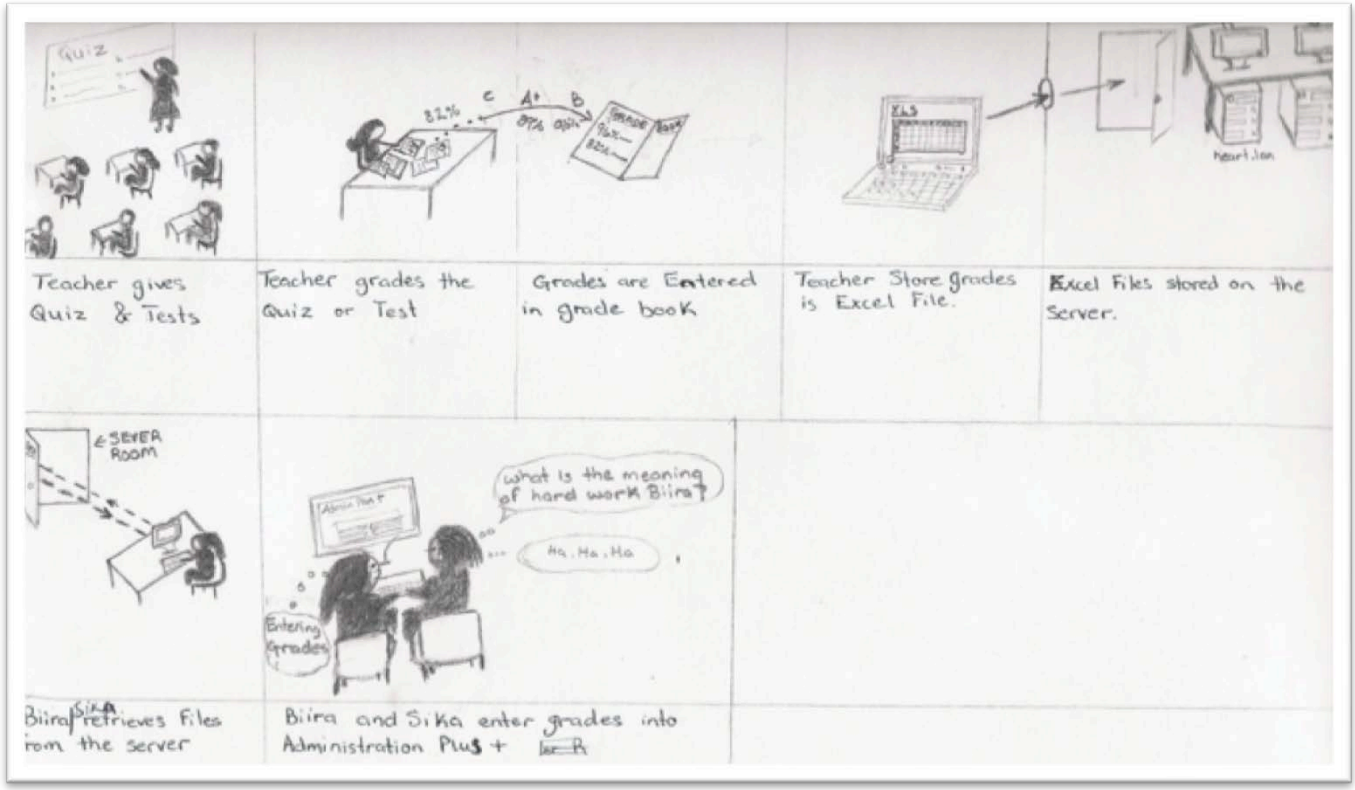
Appendix

Appendix A: Documentation for Student Information System

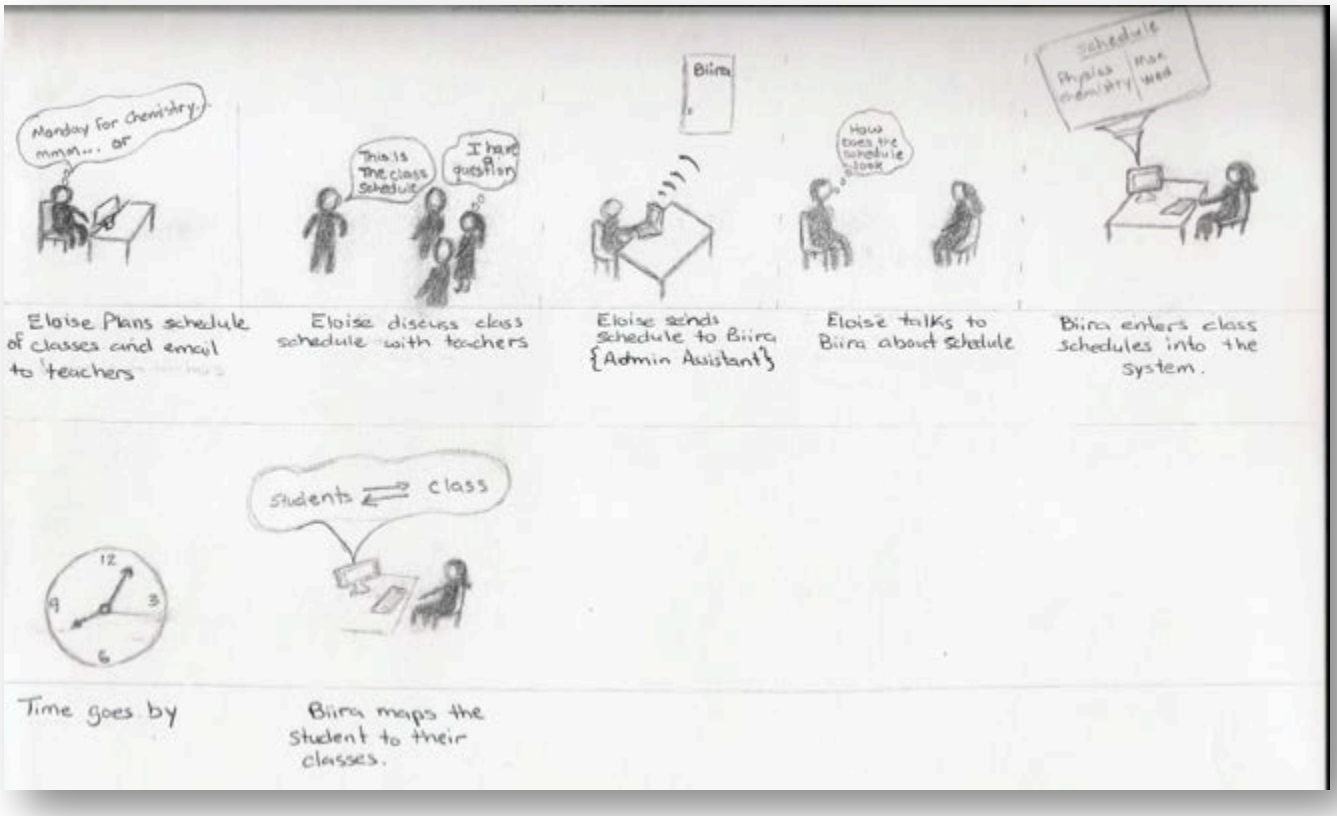
A 1.0 Storyboard on how end of term reports are generated



A 1.1 Storyboard showing how grades are entered

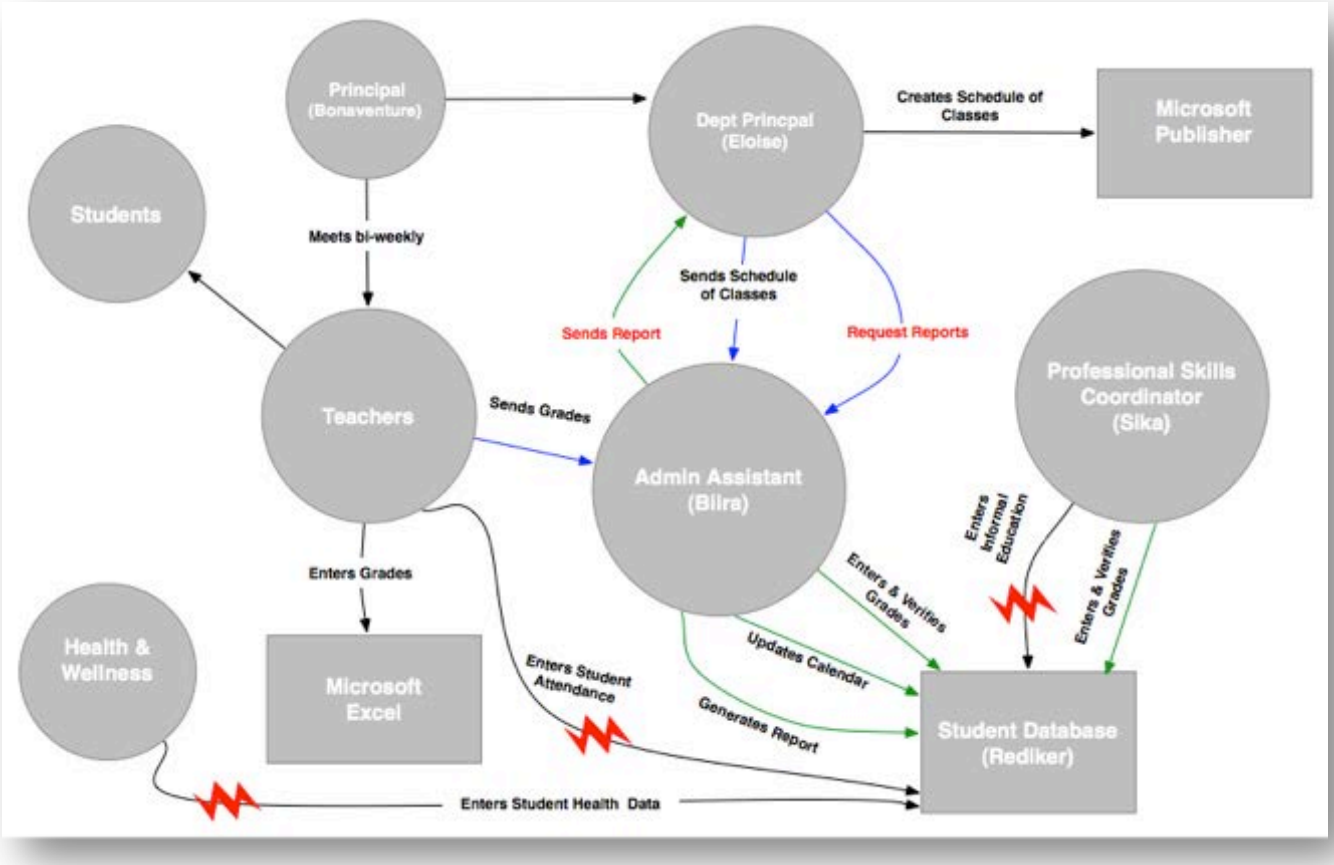


A 1.2 Storyboard showing how classes are scheduled



A 1.3 Storyboard showing how information of new students are entered

A 1.4 Workflow Diagram depicting the flow of information at ASYV



A 1.5 List of Functionality

School

-Track Student General Data: names, classes, combinations, daily/event attendance, and comments on student progress.
-Track Teachers Data: names, classes/sections,
-Track each term marks as percentages.
-Import and export data to and from Excel (including grades in percentage % format).
-Track schedules to eliminate major conflicts.
-Schedule classes (Room# etc.)
-Schedule field trips/ events
-Format Report Cards, Certificates, Student IDs, and Diplomas.
-Generate Statistics for the Ministry of Education & New York
-Generate General Reports and Statistics

Health Center

-Track student personal files {ensure confidentiality}. Some data included are type of visit (counselor, doctor, follow-up), medical cases (Headaches, Skin infections etc.), and individual referrals to the

district.
-Track the Psychological Intake Form (done once a year)
-Track Health Assessment forms
-Track Clinical Assessments (done for each visit)
-Track the Individual Evaluation process of each student, family and class (e.g. Senior 5).
-Scheduling Appointments and counseling sessions
-Produce Weekly Report for Administration (General Stats, # of overall visits, # of different cases)

Informal Education

-Track the Informal staff (Mamas, Volunteers, Big Brothers and Sisters, Program managers etc.)
-Track Activities of students (full year and 5 month schedules)
-Track student skills or participation in Activities
-Track members of a family (Joan of Arch Family, the mama, the senior, big sister if any)
-Schedule activities, professional skills, and Enrichment Programs

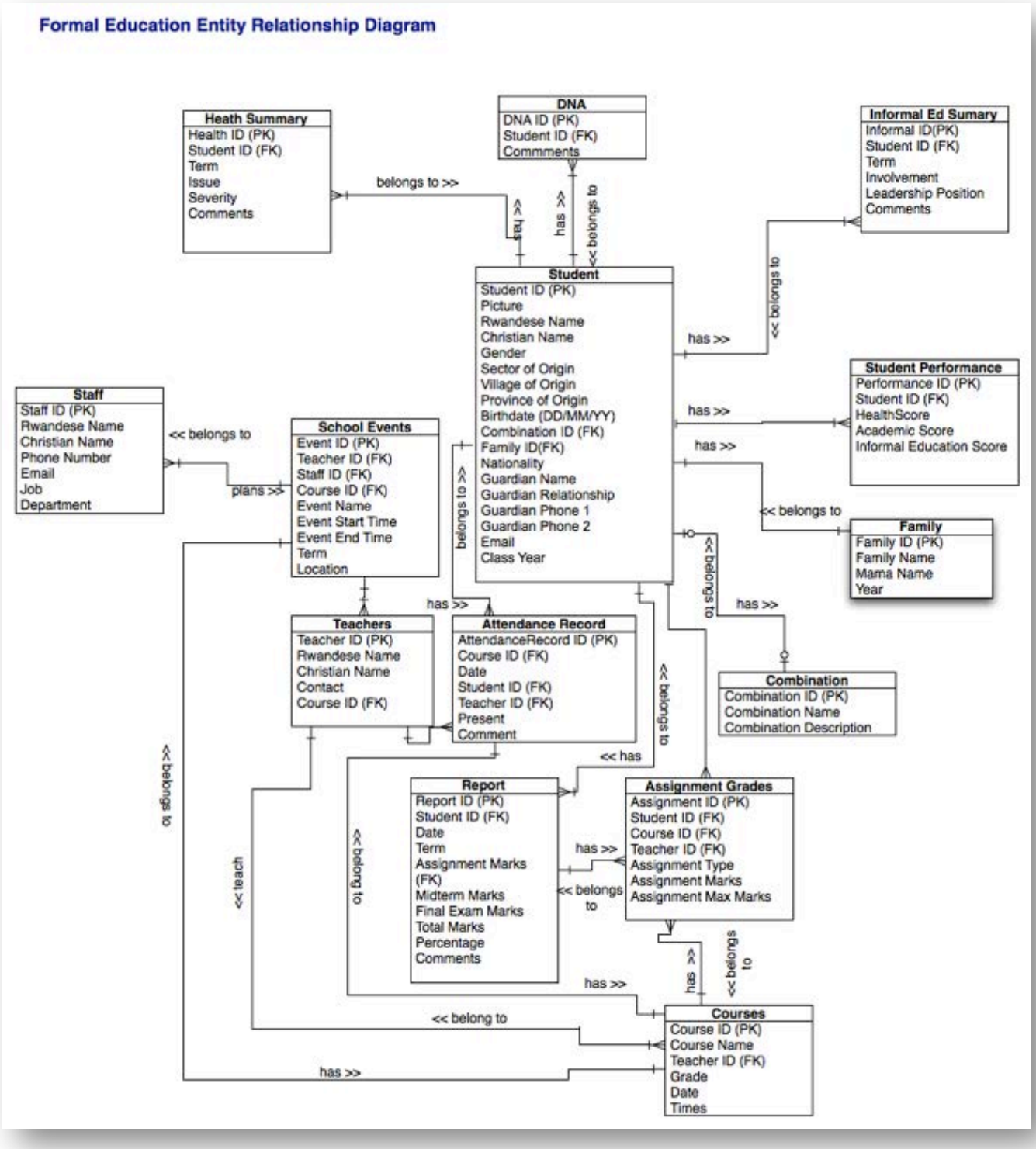
Graduating Students

-Track Address, phone number
-Track Activities (University, Job etc.)
-Schedule Student Reunions
-Produce Success Stories
-Statistical Reports (How many students went to university? etc.)

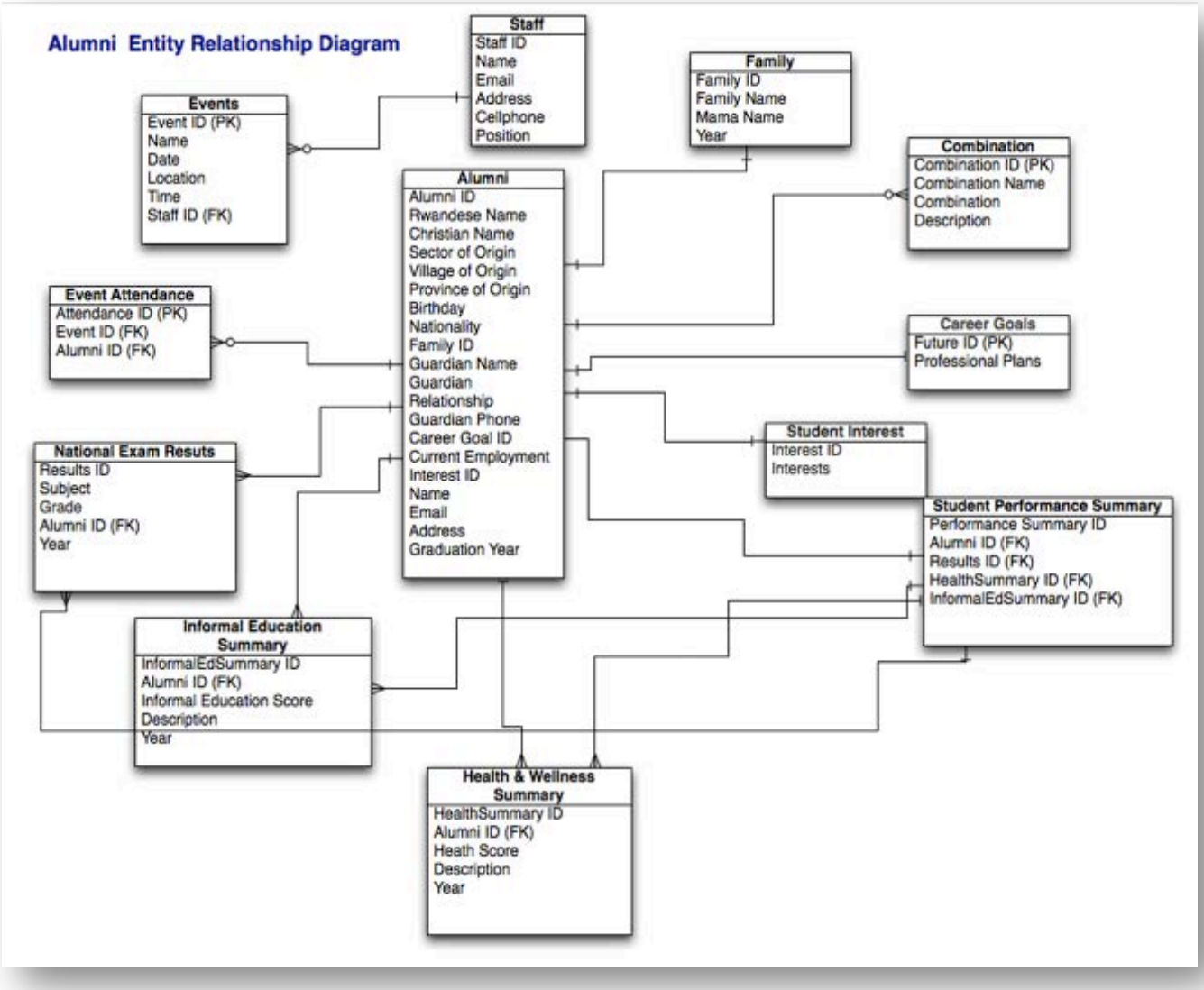
From Mike (Previous Volunteer)

Tracking information:
-Functions to track and support tables, etc.
-Track general information per staff/students/combination/family
-Track Daily/attendance per event
-Special, tracking grades via teacher, student, activities of staff
Processing info:
-Scheduling class on a term basis, (time, combination, teacher, classroom)
-Schedule Activities (field trips)
-Schedule Events
Producing Reports:
-Formatted Reports (Report card, Certificates)
-General Reports
-Student & staff ID's
-Medical Summary
-Diploma
Extras
-Extracting and importing data from Microsoft Excel
-Filter by Christian name first, then Rwandan name (not primary key)
-Web based interface, individual log in (Linked to Active Directory's user and password)
-Security Levels based on village hierarchy/department (some information is confidential)

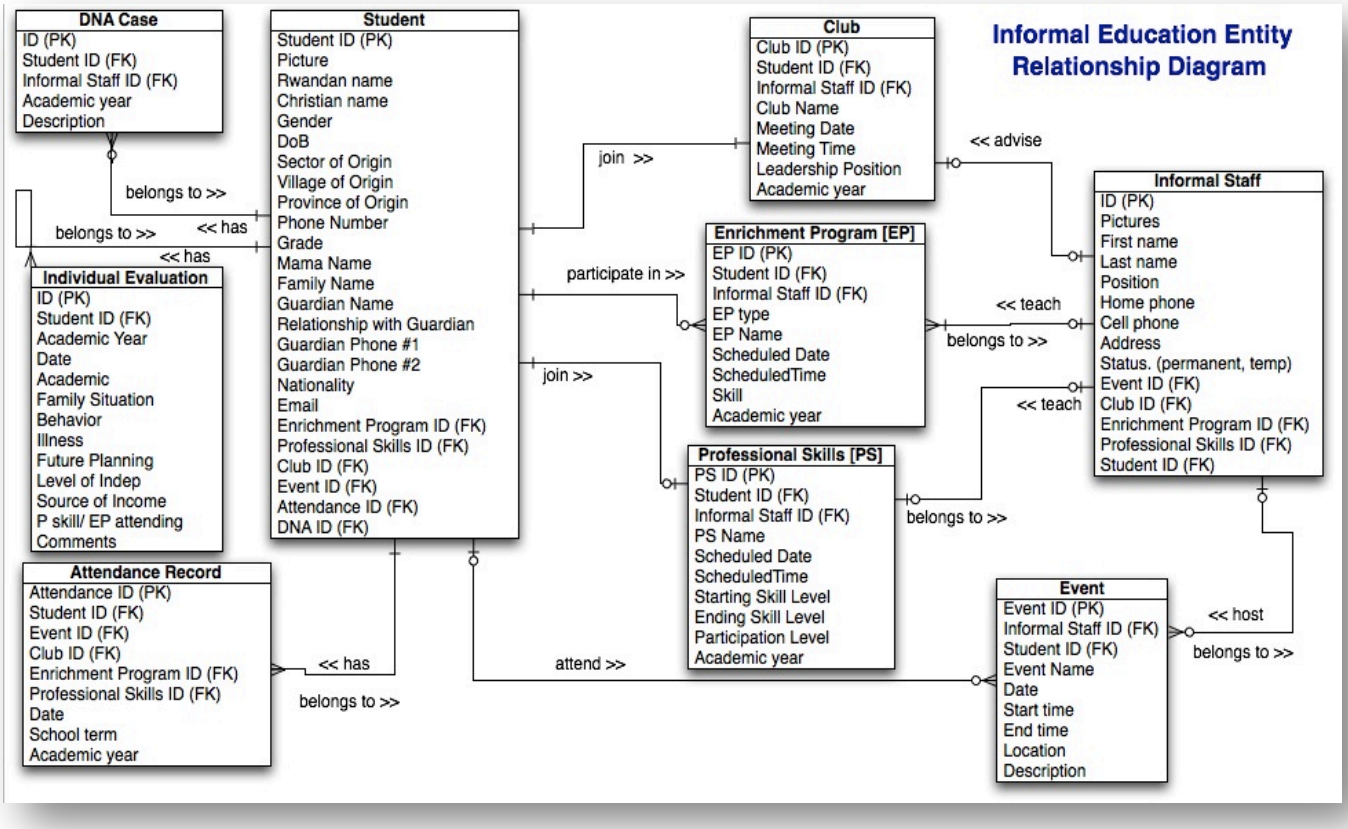
A 1.6 Formal Education ERD



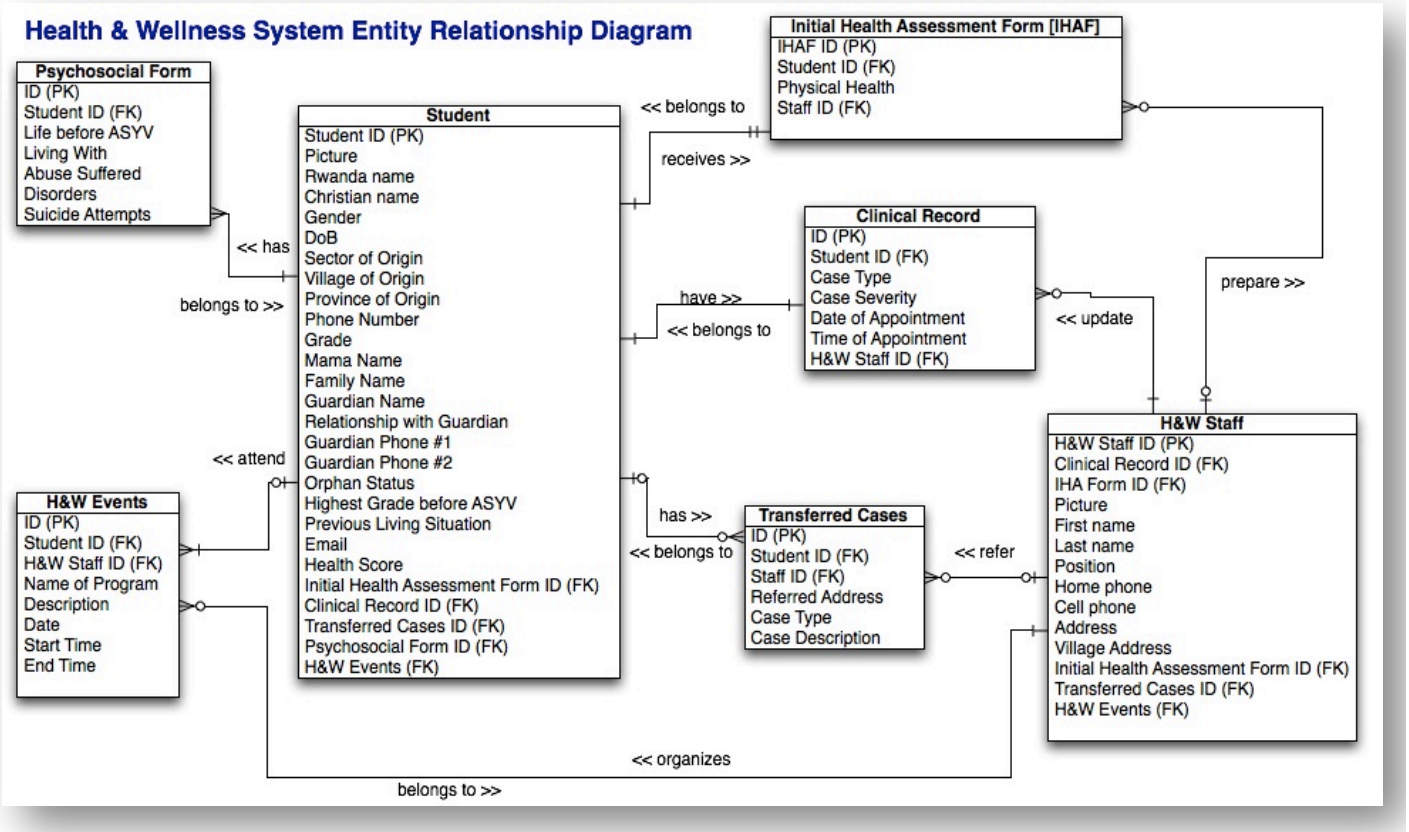
A 1.7 Alumni ERD



A 1.8 Informal Education ERD



A 1.9 Health & Wellness ERD

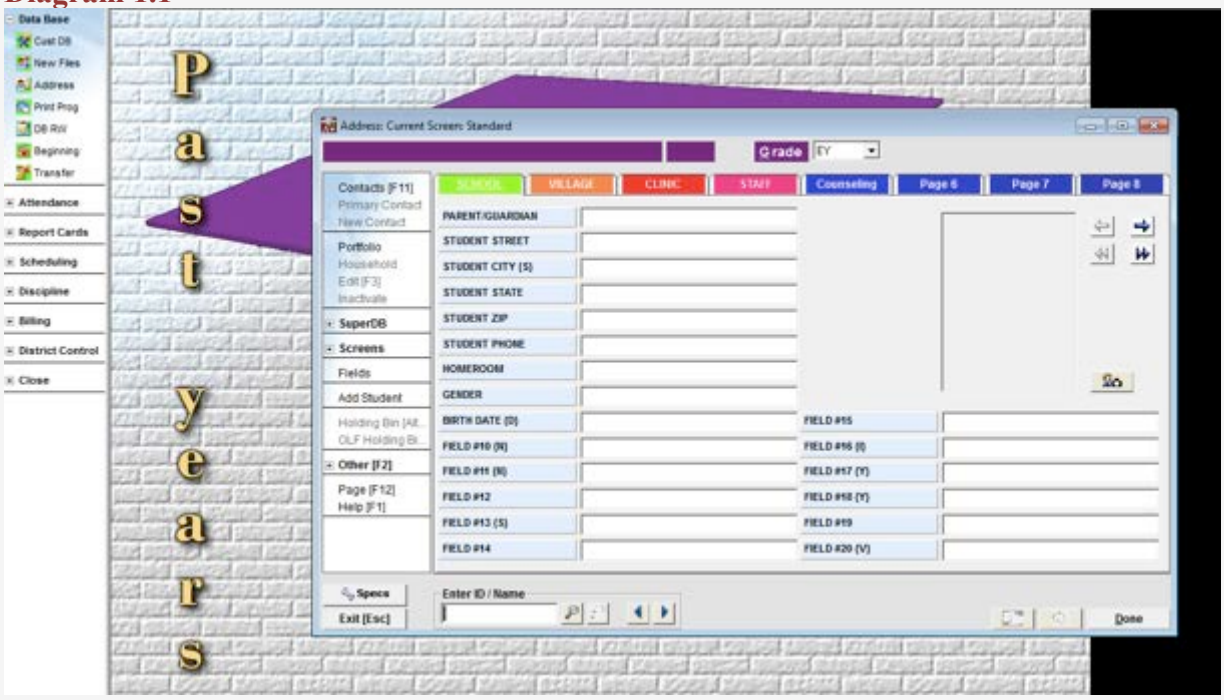


A 2.0 Grade Quick/Rediker Evaluation

Administrator Plus+

Display of students' basic information in one place is not an offered feature in Administrator Plus. You can only view information for one student at a time through this Address Interface in the diagram below.

Diagram 1.1



In order to select or find a students information you have to either type in the students name or ID in the 'Enter ID/Name' field, or just click on the search icon to select a student from a list, which is shown in Diagram 1.3.

Diagram 1.2

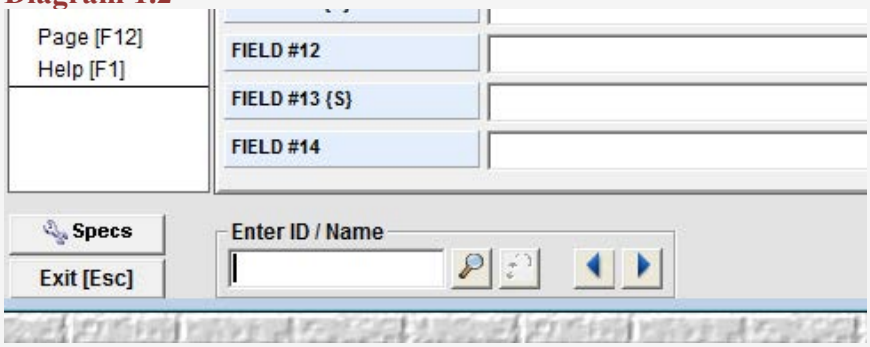
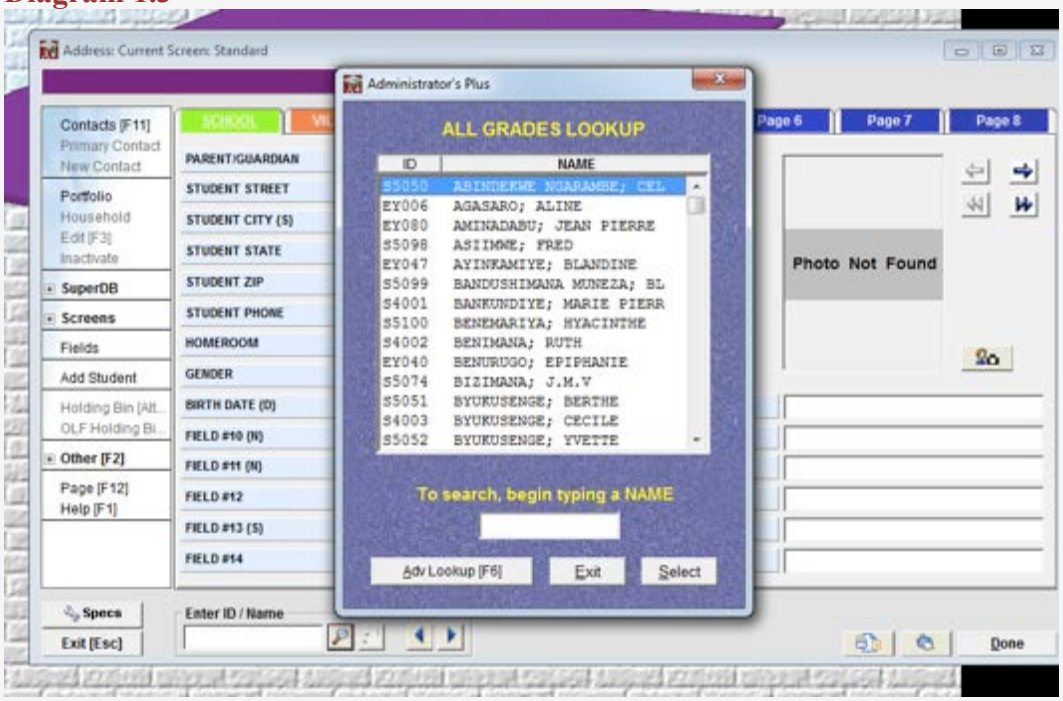
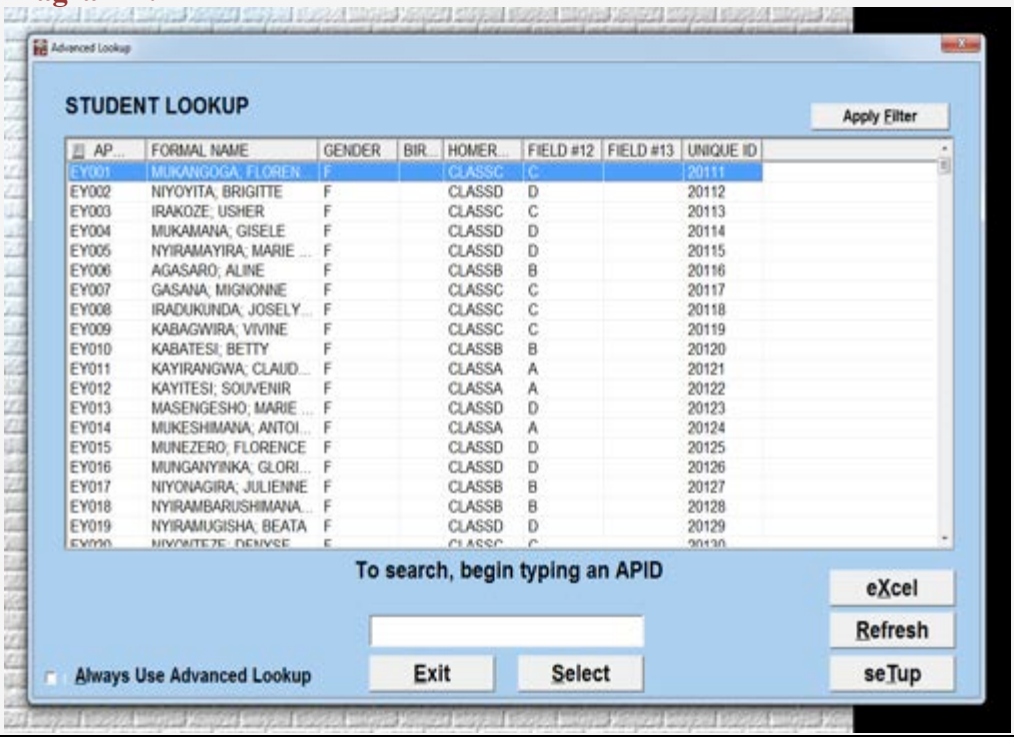


Diagram 1.3



The Advance Lookup feature does not include a proper filter, to search for or pull out specific information about students. For example, you cannot select or filter students for an entire Combination, Homeroom or Class. This is an important feature to the personnel managing the database.

Diagram 1.4

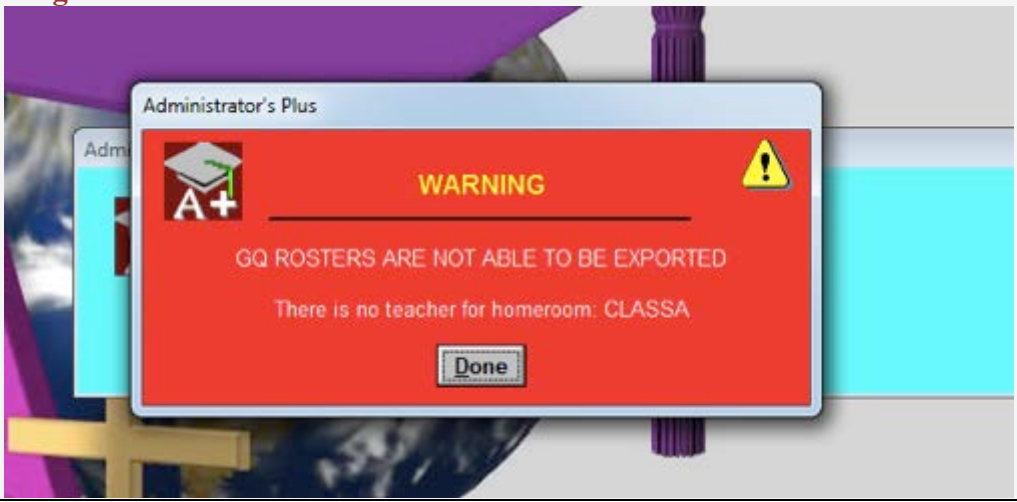


Student grades cannot be imported from a standard application such as Microsoft Excel. Information can only be exported through the Excel Wizard but it cannot be imported back into Administrator Plus. **Grade Quick** is the only application that permits the transfer of data both ways.

Diagram 1.5

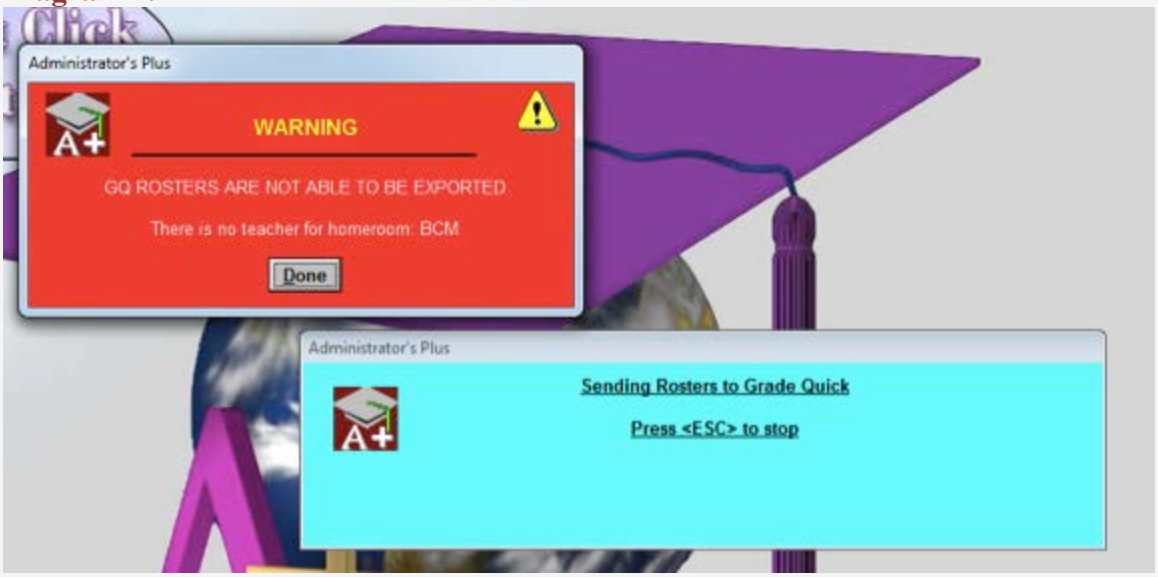
-The Rosters in Administrator Plus appears to be insufficiently configured. The path in which the information flows is correct but it is not allowing for the homeroom rosters to be sent, as shown in Diagram 1.6.

Diagram 1.6



The warning states that there is no teacher for the homeroom so the rosters can not be exported to Grade Quick.

Diagram 1.7



Grade Quick

Diagram 1.8, 1.9 shows the two steps that it takes to Import some data from Administrator Plus.

Diagram 1.8

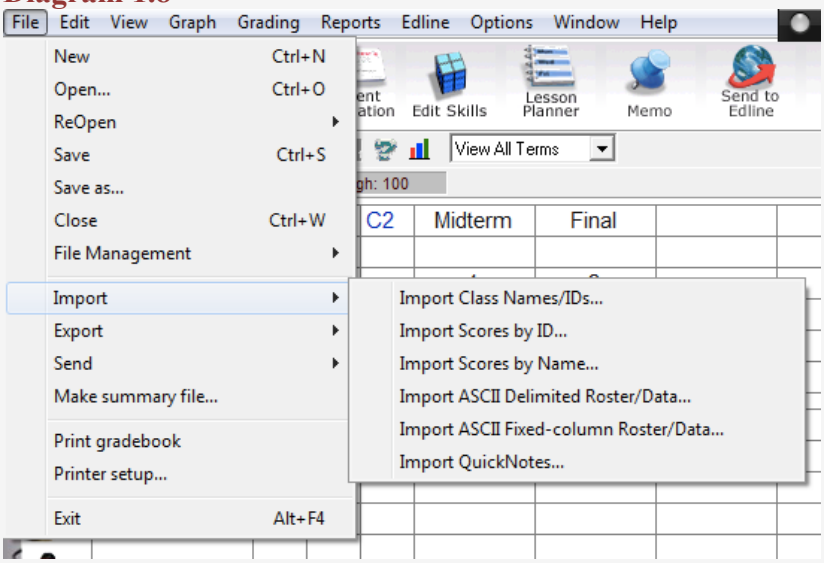
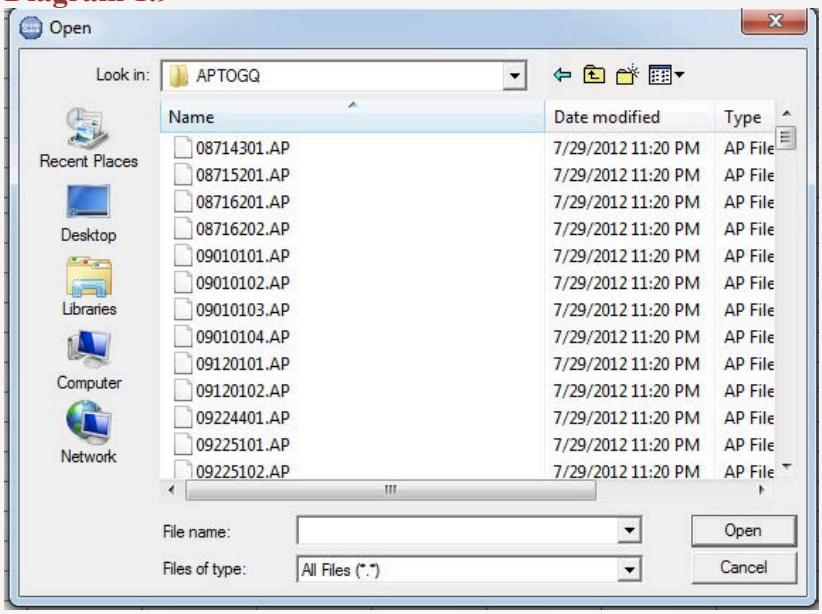


Diagram 1.9



When information is sent from Administrator Plus to Grade Quick, it seems to pass unnecessary information as well. For example rows 1, 2 and 5 etc.

Diagram 2.0

	Name	ID	C1	C2	Tot	Max	Avg	Grade
	Long Name							Yr
	Term							
	Category							
	Date							
	Possible							
1.	Administr	ator's Pl			**	**	***	*
2.	12016305				**	**	***	*
3.	E				**	**	***	*
4.	Mwenimana	, Egide			**	**	***	*
5.	120				**	**	***	*
6.	General P	aper S6			**	**	***	*
7.	163				**	**	***	*
8.	05				**	**	***	*
9.	"MUJAWIMA	NA, Esper			**	**	***	*
10.	"MUKAJENE	SE, Josia			**	**	***	*
11.	"MULIGO,	Jean Clau			**	**	***	*
12.	"MULIGO,	Malachie"			**	**	***	*
13.	"NGABO, S	erge","90			**	**	***	*
14.	"NSANZUMU	HIRE, Fra			**	**	***	*
15.	"NYIRANTU	NGANE, Di			**	**	***	*
16.	"SINAYOBY	E, Assoum			**	**	***	*
17.	"UKWISHAK	A, Anitha			**	**	***	*
18.	"UWAMAHOR	O, Lilian			**	**	***	*
19.	"UWAMALIY	A, Claudi			**	**	***	*
20.	"UWAMWEZI	, Aisha",			**	**	***	*
21.	"UWIZEYE,	MEDIATRI			**	**	***	*

Administrator Plus seems to have issues with it's configuration, so Grade Quick can not import the Rosters as shown in ***Diagram 1.6 & 1.7***. Information about teachers and Classes can be transferred over to Grade Quick but the rosters cannot be generated because it says that the Class ID cannot be passed. ***Diagram 2.2*** shows that information about the teachers and their classes have been transferred from Administrator Plus, which implicates that the path to transfer files between Applications work.

Diagram 2.1

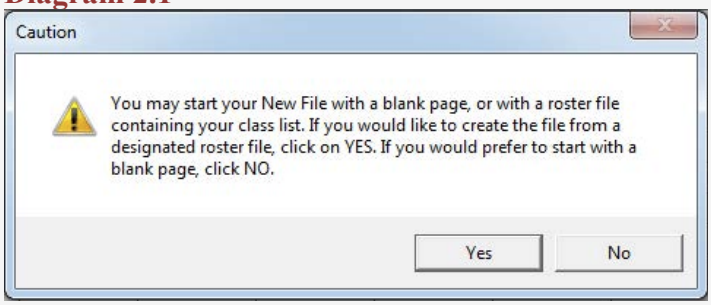
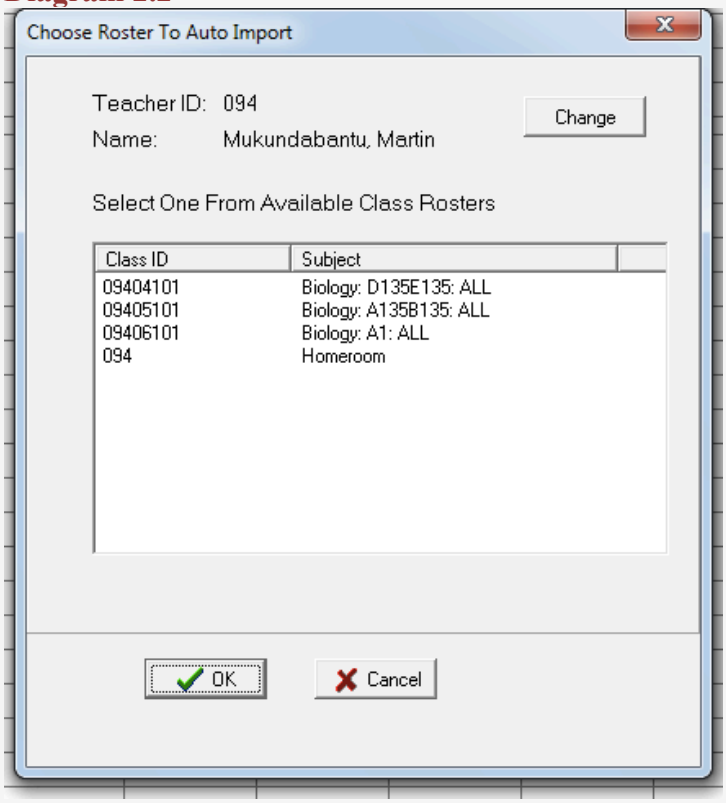
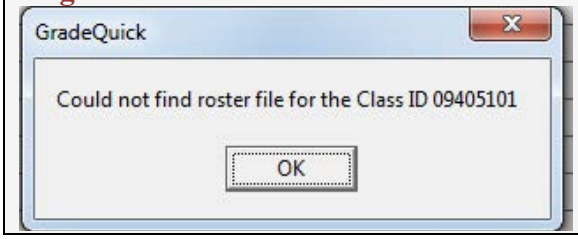


Diagram 2.2



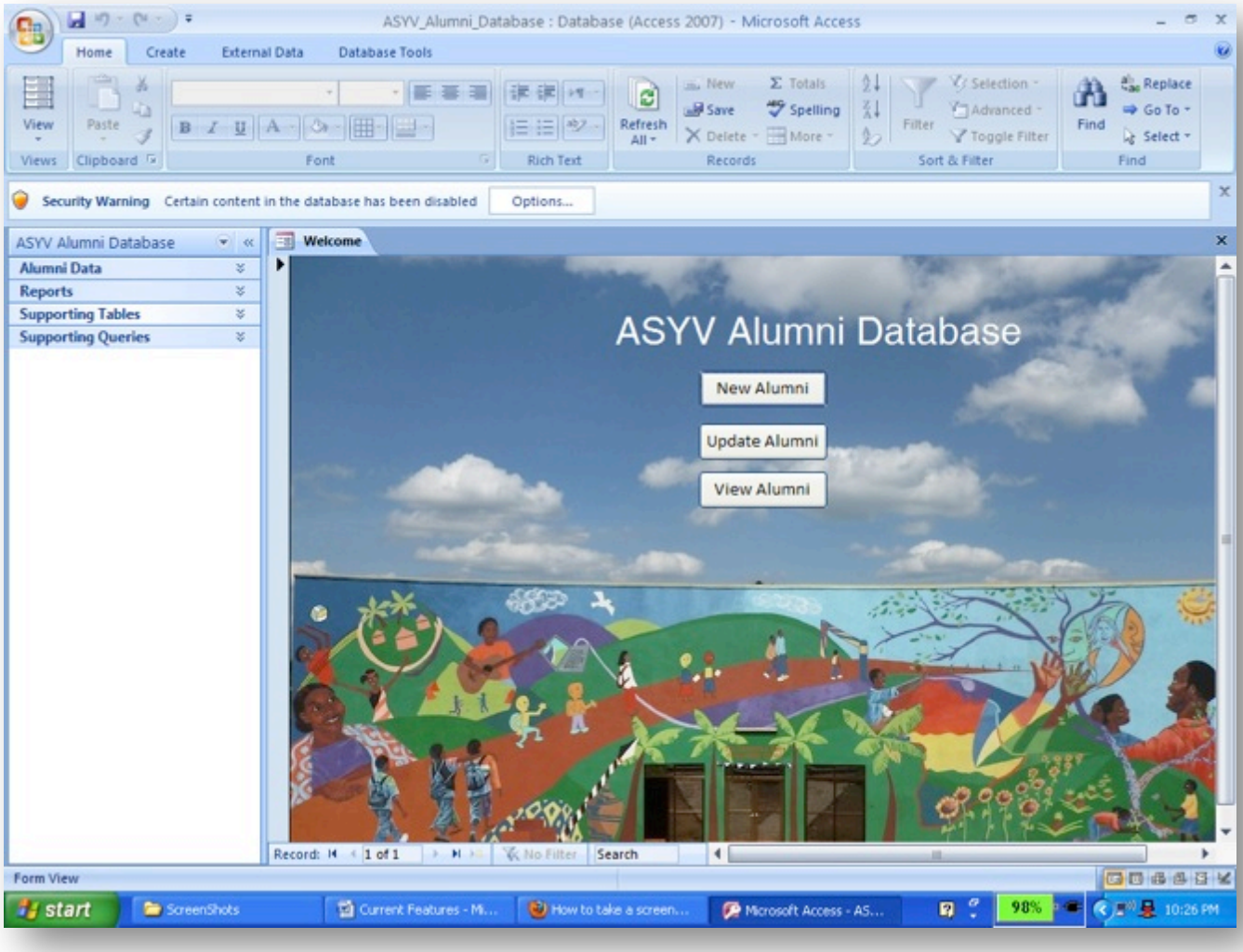
In Diagram 2.3 it shows the error. We believe that there is an issue with the way that Administrator Plus is currently configured.

Diagram 2.3

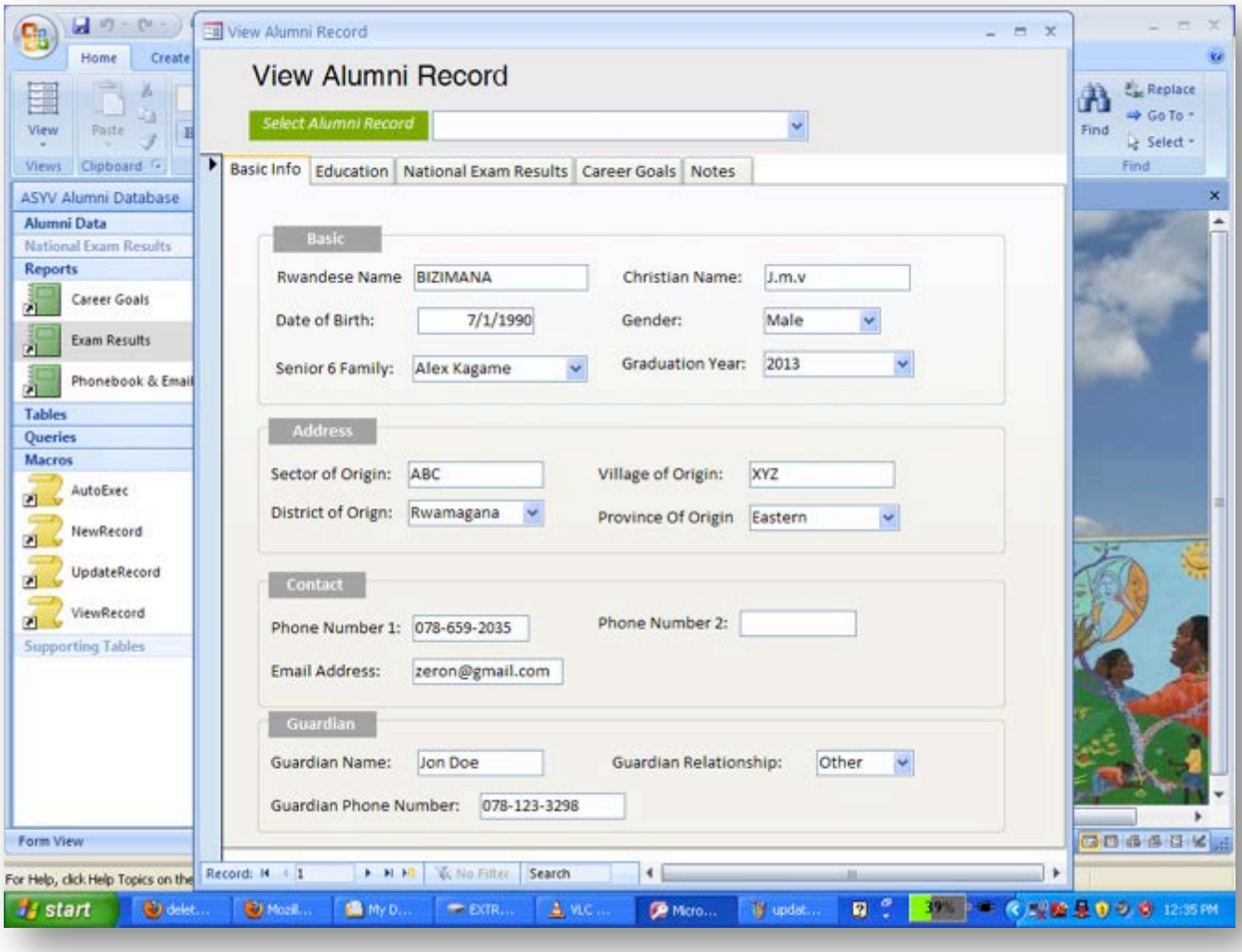


Appendix B: Documentation for Alumni Database

B 1.0 Welcome Interface for the Alumni Database

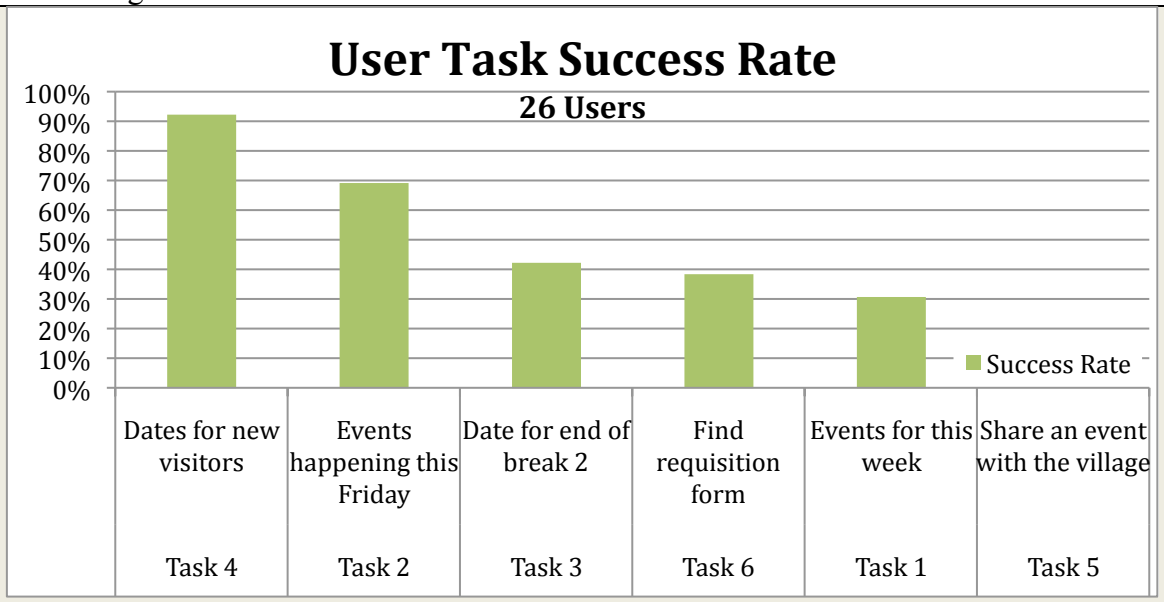


B 1.1 Interface for updating a student record



Appendix C: Documentation for the Intranet

C 1.0 User testing Observation and Results



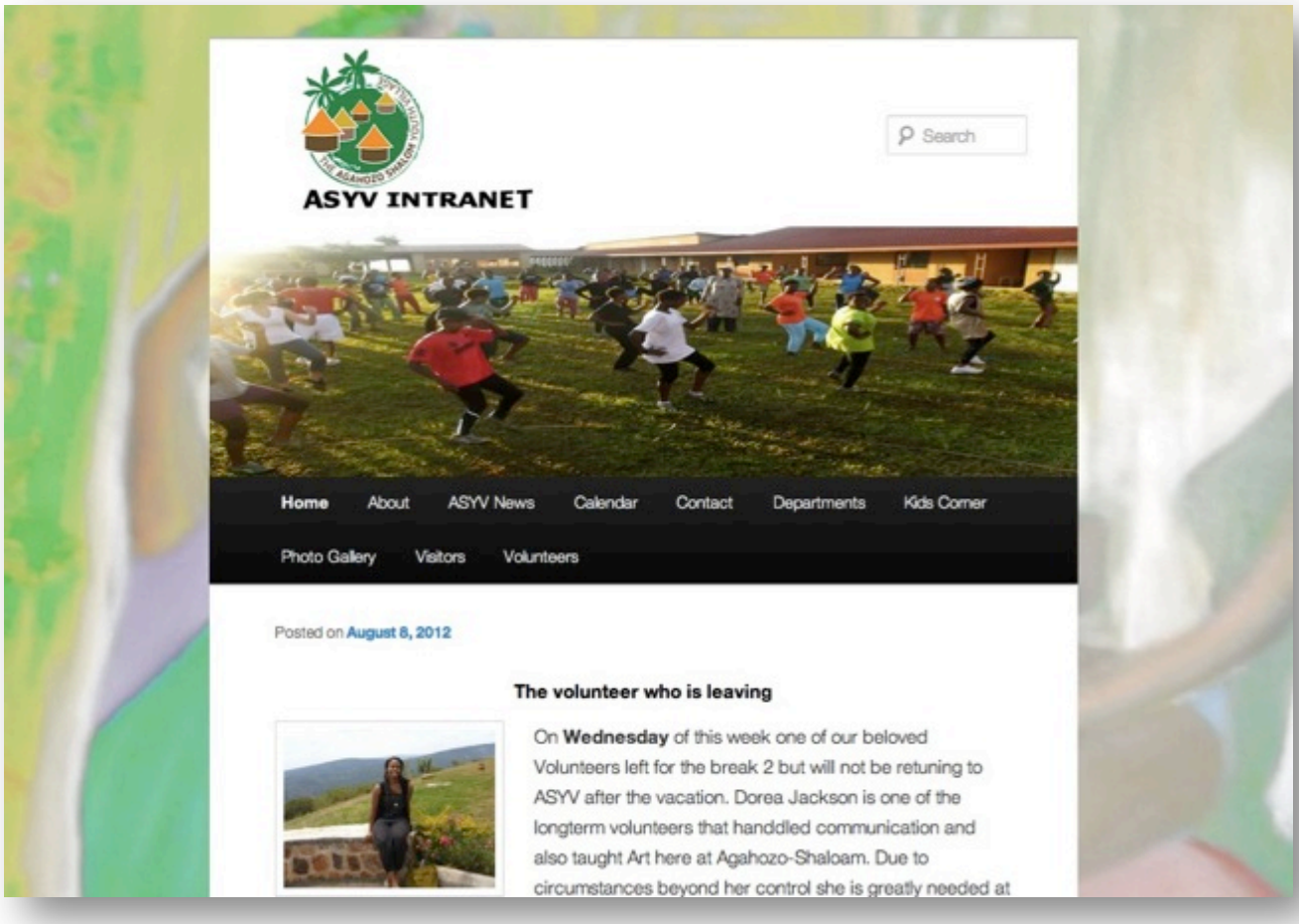
Task	Description	Success Rate
Task 4	Dates for new visitors	92%
Task 2	Events happening this Friday	69%
Task 3	Date for end of break 2	42%
Task 6	Find requisition form	38%
Task 1	Events for this week	31%
Task 5	Share an event with the village	0%

Positive Feedback & Observations
Users liked the photos and were drawn to them
The easiest thing to find was the visitors section
Most users enjoyed the Activity

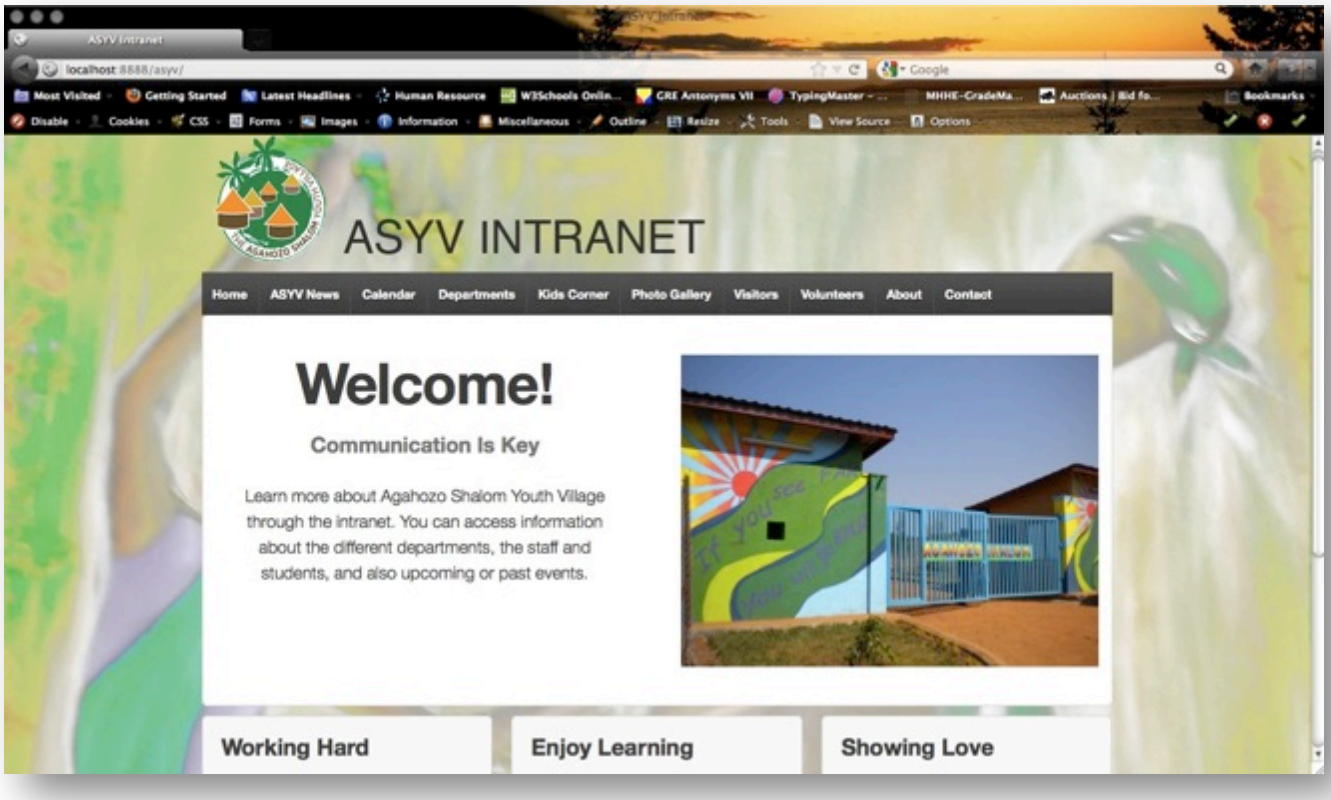
Negative Feedback & Observations
Navigation was very problematic (not instantly noticeable)
Most users did not notice the navigation bar unless they accidentally highlighted it
Users did not know where the news/announcement were (large variability in responses)
Users who used the site previously could not remember where to find the calendar/other items
No one was able to find the link to share and event (most Users opted to send a suggestion)
Many gave up because of frustration
May Students had the logic that anything for the children is in Kids Corner
Some links did not work
There are pages that were blank so users assume what information should be there

C 1.1 Recommendation of Major changes to be made to the old Intranet

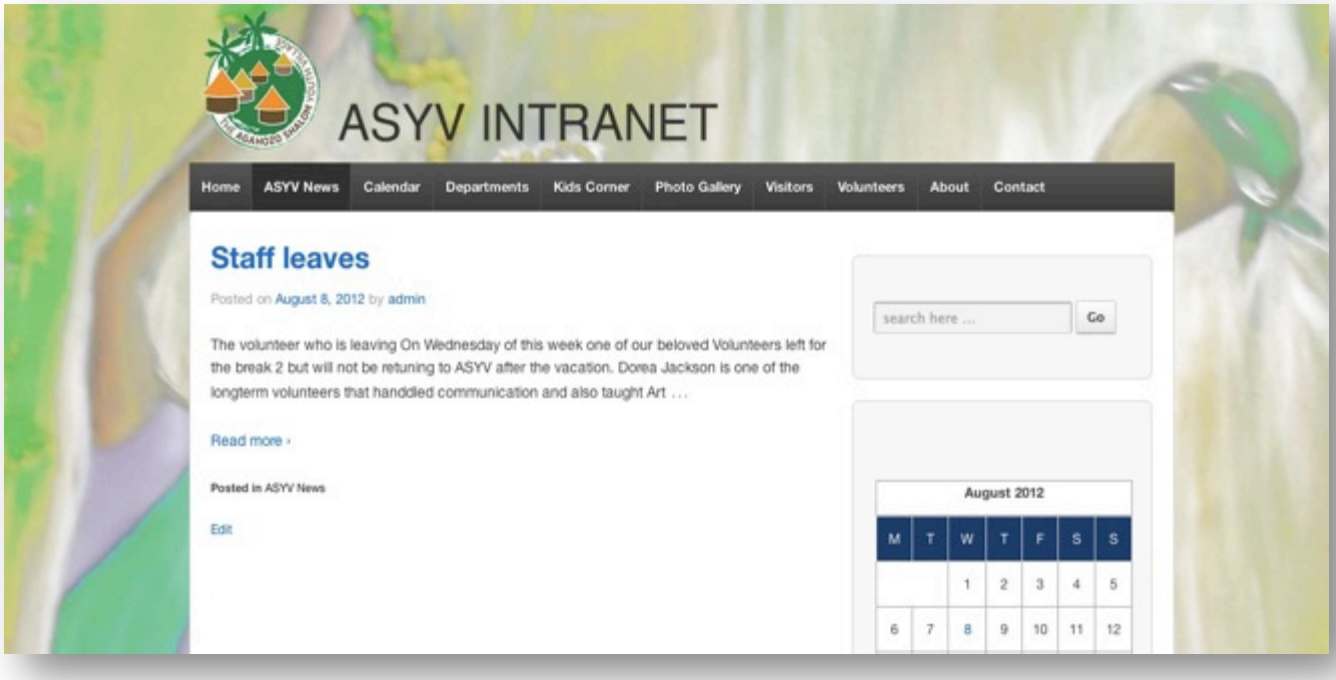
C 1.2 WordPress Prototype to showcase the functionality of a Content Management System



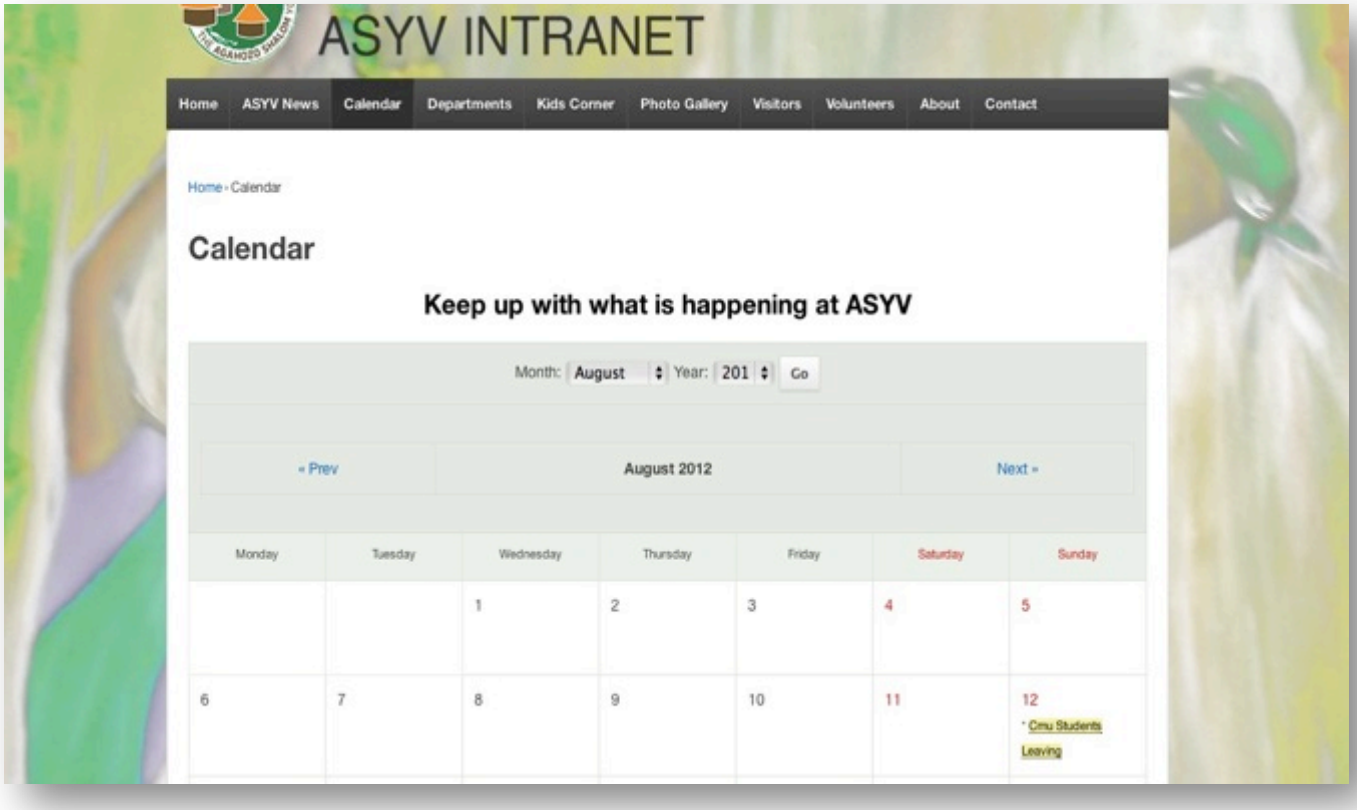
C 1.3 Home Page of the New Intranet Site



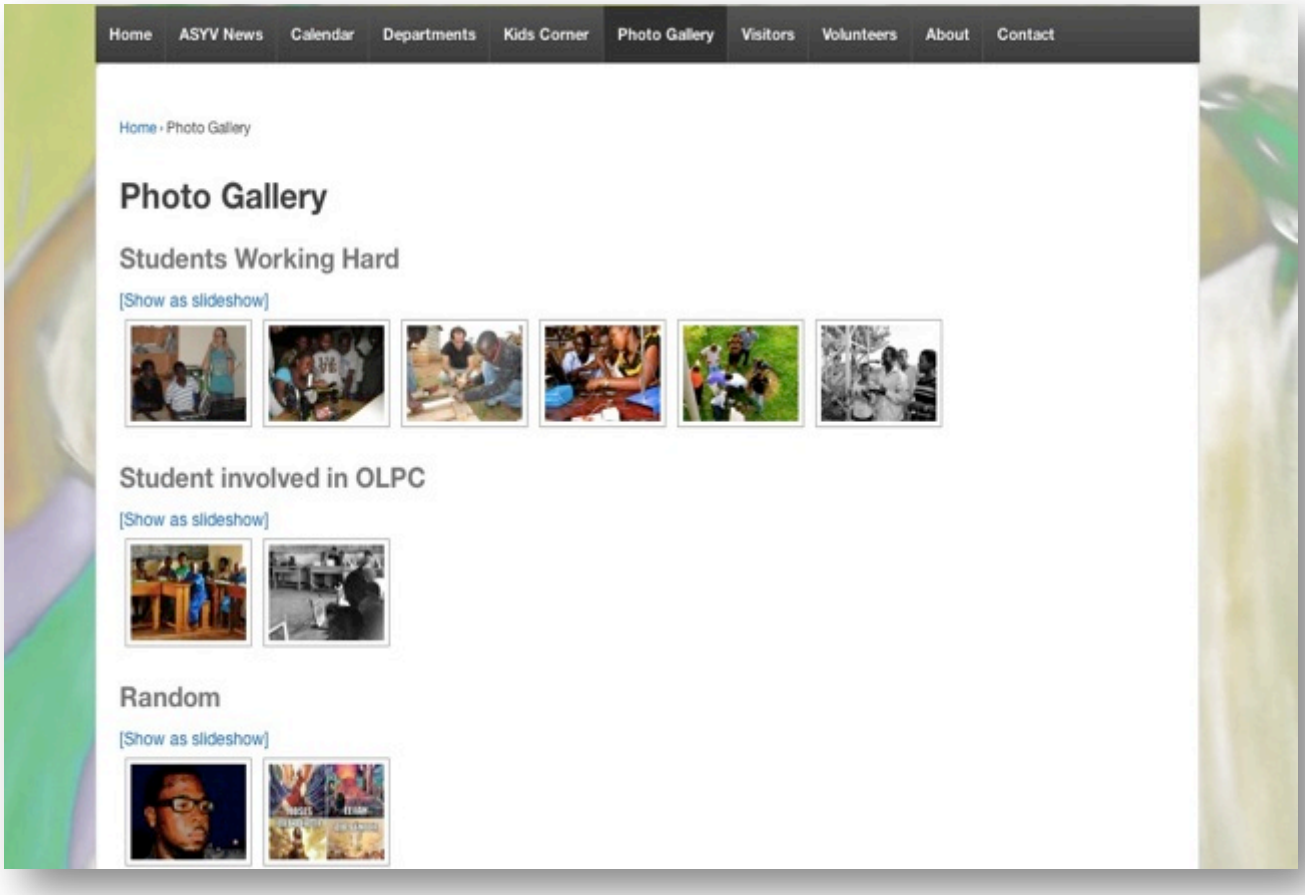
C 1.4 ASYV News Page added to the Intranet



C 1.5 New Calendar page added for event management

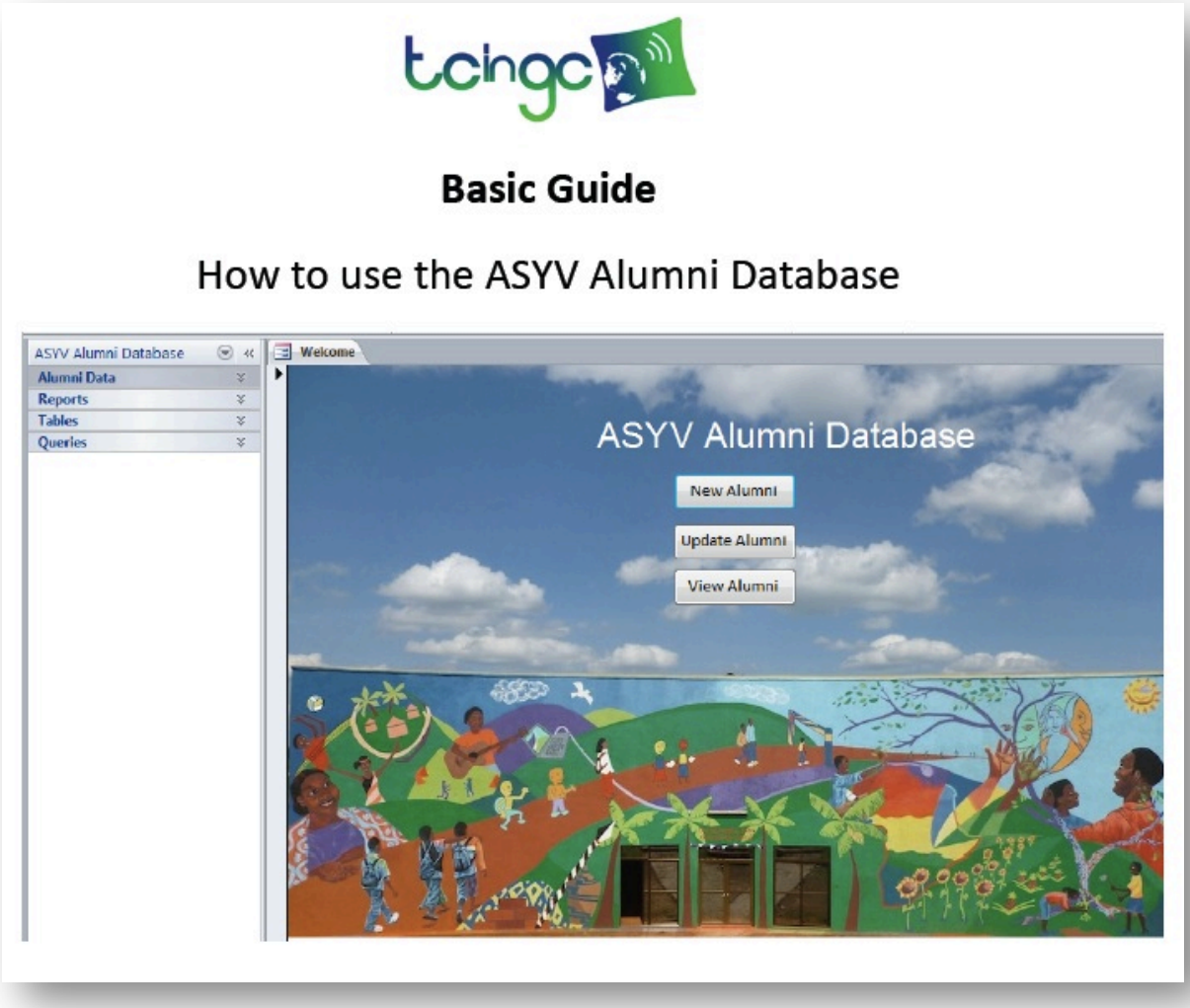


C 1.6 New Photo Gallery page for displaying Photos

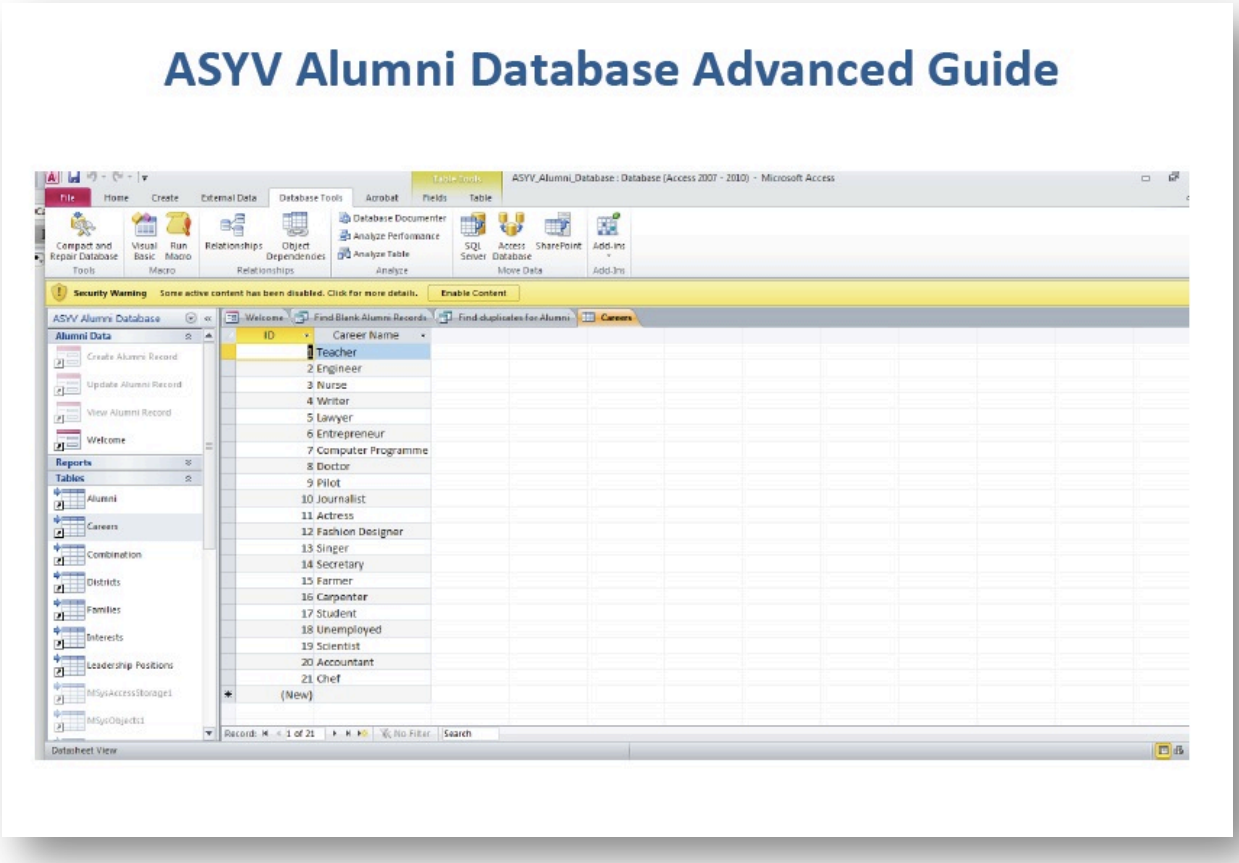

Home
ASYV News
Calendar
Departments
Kids Corner
Photo Gallery
Visitors
Volunteers
About
Contact
Home › Photo Gallery
Photo Gallery
Students Working Hard
[Show as slideshow]
Student involved in OLPC
[Show as slideshow]
Random
[Show as slideshow]

Appendix D: Screen Shots of Manuals

D 1.0 Basic Operation Guide for the Alumni Database

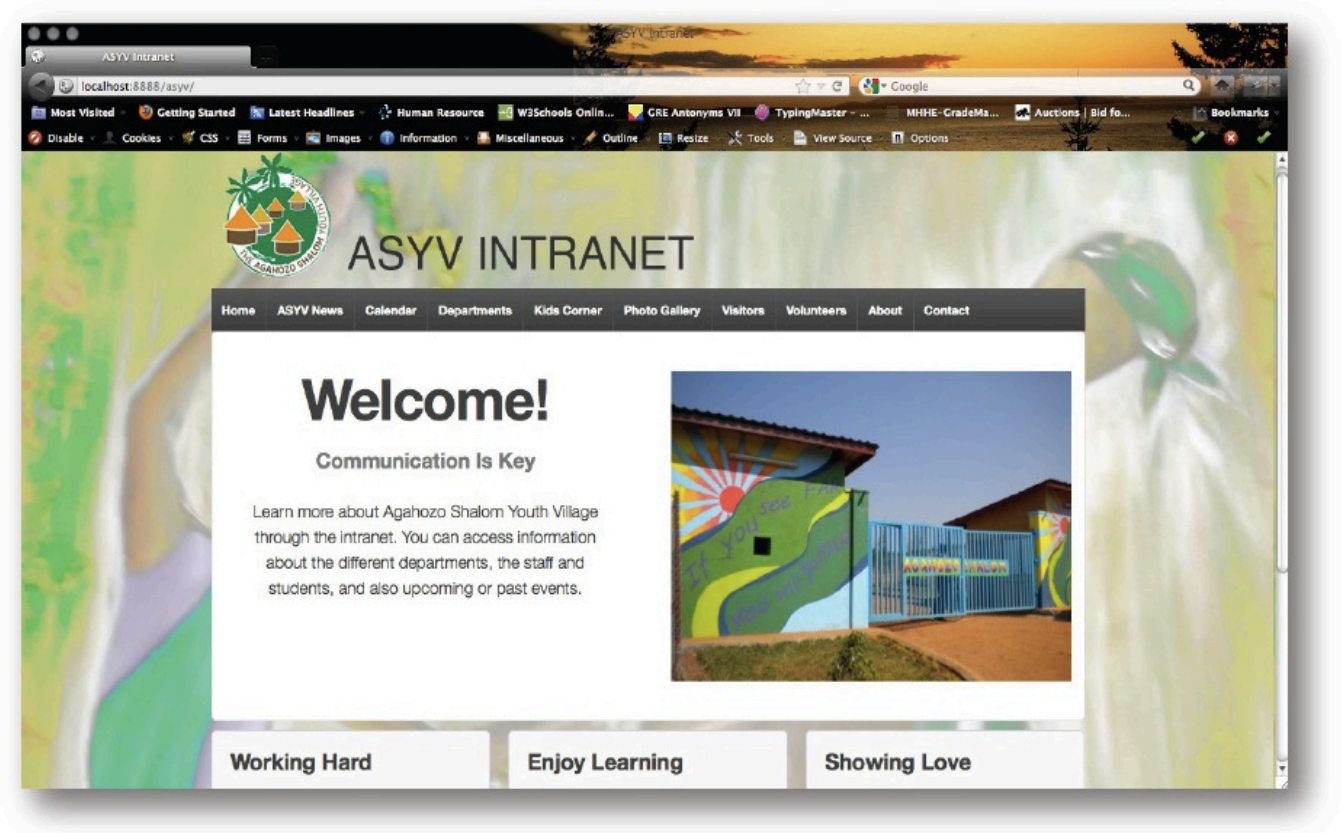


D 1.1 Advance Operation Guide for the Alumni Database



D 1.2 Basic Updating Guide for the Intranet

Basic Guide for Intranet



D 1.3 Advance Maintenance Guide for the Intranet

Advance WordPress Guide