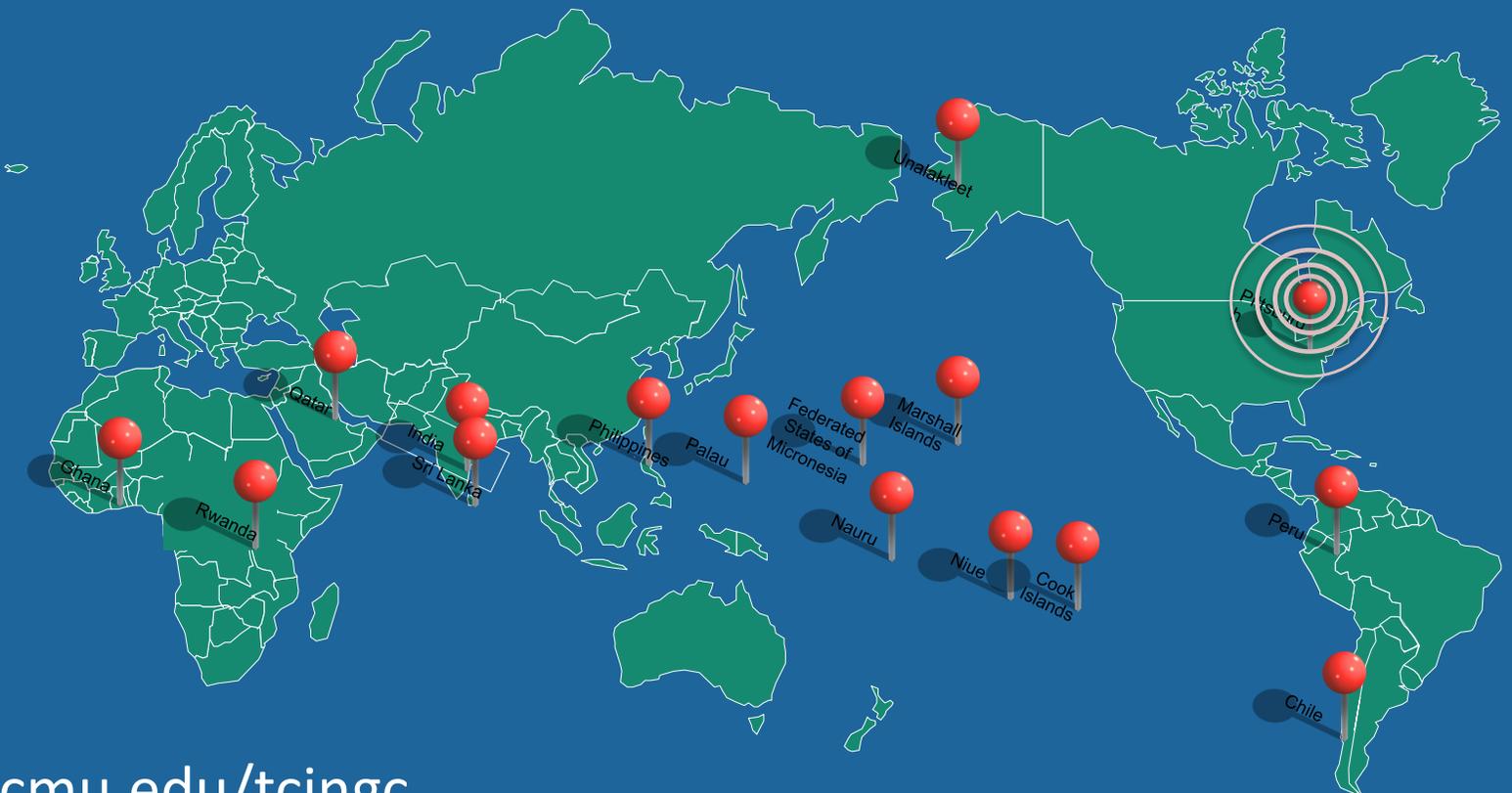


TECHNOLOGY CONSULTING

IN THE GLOBAL COMMUNITY

Final Consulting Report
Palau Community College
Cheng Ding
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Carnegie Mellon University



Palau Community College

Executive Summary

Student Consultant, Cheng Ding
Community Partner, Grace Alexander and Bruce Rimirch

I. About the Organization

Located on the main street of Koror, the biggest city of Palau, Palau Community College (PCC) is the only higher educational institution in Palau and it serves the local community as well as students from Palau, the Asia-Pacific region, and some other countries. PCC is accredited by Accrediting Commission for Community and Junior Colleges (ACCJC) of the Western Association of Schools and Colleges (WASC), and the mission of PCC is:

Palau Community College is an accessible public education institution helping to meet the technical, academic, cultural, social, and economic needs of the students and communities by promoting learning opportunities and developing personal excellence.

PCC provides four associate degrees and 23 programs in various academic disciplines. It also provides some special programs for high school students, government officers, and other members of the community.

II. Enhance Web Presence and Content Management

The current website of PCC was created about ten years ago using static html, and it looks out-of-date compared with websites of other educational institutions. There are only two staff in the Computer Services Office to support the technology system of the whole campus. The webmaster has been busy with other tasks and did not have time to search for alternatives. There is also a lack of external resources available at Palau. Because the website is hosted on a server in the Computer Services Office's server room and the internet speed at PCC is very limited, the website is also slow to access from outside.

The student consultant helped the community partner to create a new website with the following intermediate outcomes:

- CMS tool chosen
- Targeting audience defined
- Hosting service subscribed
- Domain configured and remotely hosted
- Theme selected
- Site structure and content responsibility defined
- Users trained and content uploaded
- Additional software introduced
- Design and functionality customized
- Development and production two sites model established

By the end of the project, PCC has a new website that looks clean and modern and supports some features that was not available on the old website, for instance, search course, or post individual piece of news.

The new website distributes the responsibility of content management to people who are closer to the source of the information. Users from different offices are giving the access and responsibilities to update their own content, which is a task that they are not familiar with and is outside of the functions of their own offices. As a result, the risk exists that some users might lack the incentives to update the content or keep improving the quality of the information. The student consultant recommended including website content management as a routine topic in the Technology Resources Committee meetings to make sure that the distribution of content management responsibilities is enforced.

Based on the new website, the student consultant also recommended the community partner to explore the functions and services of Google Analytics to gather traffic statistics and get a better understanding of the audience. Another recommendation is to utilize the new website as a platform for students to make transcript requests online.

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Palau Community College

Context Analysis

Student Consultant, Cheng Ding
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I. About the Organization

Organization

Palau Community College (PCC) is a community college in Palau located in downtown Koror, the main commercial center and the most populated city in Palau. Being the only school of higher education in the nation, PCC offers associate degrees in various academic disciplines for students from Palau, Micronesia, and the Asia-Pacific Region. The mission of PCC is:

Palau Community College is an accessible public education institution helping to meet the technical, academic, cultural, social, and economic needs of the students and communities by promoting learning opportunities and developing personal excellence.

PCC had its beginning as a trade school in 1927 under Japanese administration. It was then founded as a two-year vocational institution in 1969 with the name Micronesian Occupation Center. In 1993, as part of Palau becoming an independent nation, the school was officially established as a national college with its own governing board, changing its name to Palau Community College. The college was accredited by Accrediting Commission for Community and Junior Colleges (ACCJC) of the Western Association of Schools and Colleges (WASC) and has kept its accreditation status for 35 years.

Over 4000 students have graduated from the school since 1971. The number of students that PCC serves fluctuates year to year, ranging from about 600 to about 750 for the last 8 years as counted at each fall semester. During the same time period, first time students starting school at fall range from 100 to 150. Over 100 full-time employees work on the PCC campus, with about 30 teaching faculty and about 100 administrative staff members.

Funded by the Palauan government contribution, tuition and other fees collected from students, federal funds from the US, and some other sources, PCC operates with a budget of more than 7 million US dollars. The college also has its own endowment fund with a balance of over 2 million US dollars. Each office reviews itself every three years as part of the accreditation review reporting process.

Technology development in PCC is constrained by the limitation of available resources. Being a country of islands in the Pacific Ocean with about 20,000 in population, Palau has no fiber optic but only satellite network connection, which limits the internet access of all the organization and individual on the islands including PCC. Internet speed in the school is very slow but the price is high. Only two staff members work at the Computer Services office, managing all aspects of technology related services, from troubleshooting to maintenance and others. A static html website

computer room in the library is available for students only. There are some computers in the dormitory's study hall. Three additional computers are available in the student housing office.

Programs

PCC offers four kinds of Associate degrees: Associate of Applied Science, Associate of Science, Associate of Technical Studies, and Associate of Arts. There are in total 23 programs under these degrees. The most popular programs in terms of enrollment are Office Administration, Tourism and Hospitality, Education, and Liberal Arts.

Working in collaboration with other academic institution, PCC also offers some special programs delivered by a combination of classroom teaching and distance learning. One of the partners is San Diego State University, with which PCC works to offer Bachelor of Arts in Liberal Studies degree and Master of Arts degree. Students can access distance learning courses on computers at PCC's Online Lab. There is also an Adult High School program designed for adult students without high school diploma who want to earn a high school diploma. Training programs for government employees is also available at PCC under Continuing Education and Maintenance Assistance Program.

Another special program residing on the campus is the federal TRIO programs from the US Department of Education, which has their own grants and recruits their own staff. The Upward Bound program provides support for high school students in their preparation for college entrance, and the Talent Search program identifies and supports students with disadvantaged background but with potentials for higher education success.

Internal trainings for staff and faculty members are organized by the Office of Continuing Education, where they also organize summer programs for elementary or middle school students.

As part of the accreditation requirement and process, PCC goes through a review process in a cycle of every 6 years. Each office reviews itself every 3 years while each 3-year cycle is divided into 3 phases, one phase for each year. In order to improve the efficiency of evaluating performance, reporting results, and communicating with the accreditation team, PCC is trying to install TracDat, an evaluation and assessment software application. It can help PCC to keep track of student's academic performance as well as school offices' performance in terms of meeting their goals.

Staff

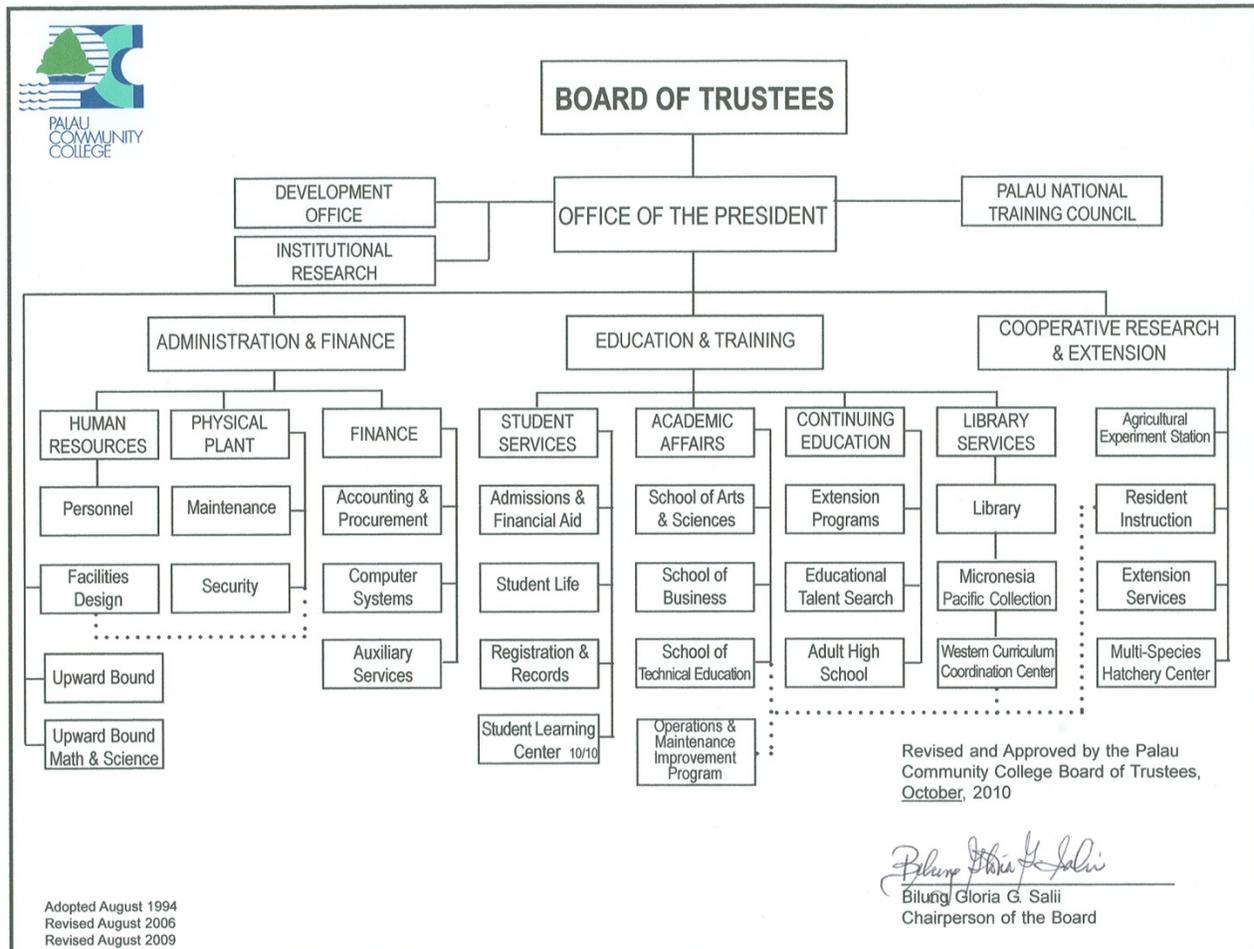
Different offices of PCC work together to support the operation of the school as a whole. A chart that shows all the departments and offices are attached below. Employees whose work involves using computers have a computer with Microsoft Office pre-installed.

The student consultant is working with the Computer Services office, where they have only two staff members, Bruce Rimirch (Director) and Grace Alexander (System Analyst). They are in charge of technology related services for the whole campus. They were not experts at the beginning of their career, but through all the years they have been working at PCC, they have learned and figured out things by themselves as there is no specific trainings available. They also have a new staff, E-van Ongrung, coming to work at Computer Services office starting this summer.

Bruce spends most of his working time dealing with complaints, troubleshooting, and managing the network while Grace focuses on paperwork, communicating with other offices, helping with their software, and running the annual survey for technology performance and services. They each have a desktop that can remotely control the servers in the Data Center room next door. Bruce is very

familiar with Linux and command line scripting and he monitors all the devices and the network traffic. Grace is the webmaster who created the current website and updates the content.

Figure 2: Organization Chart



Technology Infrastructure

The main campus of PCC at Koror has internet connections through DSL cables while the Cooperative Research and Extension (CRE) campus on the Babeldaob island does not have internet access. The main campus has 8 DSL lines listed below from Palau National Communications Corporation (PNCC), the only telecommunication services carrier in Palau.

Figure 3: DSL IP and Bandwidth

DSL IP	Name	Bandwidth
202.124.226.3	pcc-dlc.palaunet.com	192 kbps
202.124.226.12	pcc-main.palaunet.com	320 kbps
202.124.226.60	pcc-admin.palaunet.com	256 kbps
202.124.226.68	pcc-library.palaunet.com	192 kbps
202.124.227.89	pcctansiulinlibrary.palaunet.com	256 kbps
202.124.227.133	pcctalentsearch.palaunet.com	128 kbps

202.124.227.153	pccfinancialaid.palaunet.com	128 kbps
202.124.227.156	Tourism	64 kbps

The Computer Services office only manages the first 6 of the 8 lines. The last two lines are managed separately by the departments that subscribed those lines. The pcc-main and pcc-admin lines are paid by PCC's own budget while the other lines are covered by each department's own grants received from other sources and these grants can only be used within those departments but not for the entire school. Because there are 6 different lines to manage, Bruce uses static instead of dynamic IP addressing. When the traffic is heavy on one line and someone complains, Bruce manually switches that person to another DSL by changing that person's IP and default gateway.

Computers in different offices across the campus are connected through cables and switches without using any routers. Some part of the cable just hangs freely between buildings without any support or protection. Offices at the far end get unreliable and extremely slow connection because of the many hops in switches and hubs, and length of the cables that data passes through. Wireless access point is provided at the main offices area, the library, and the Online Lab classroom.

The school buys equipment through an agent on the west coast of the US who purchases equipment from other places in the US and ships everything together to Palau. When they buy computers, they buy Microsoft Office as a bundle so the computers come with Office suite installed. All computers on the campus are running with different versions of Windows and different versions of Microsoft Office depending on what was available during the time they were bought.

A list of the details of PCC's technology infrastructure is attached below. The servers are running with different systems, some on Linux and some on Windows. While each of the software used by other department runs on their own server, PCC's website and mail service are hosted on one single server, and this server share the same DSL line with all the staff and faculty's computers.

Figure 4: Technology Infrastructure

Item	Description
Desktop	Dell (all computer labs and most offices), Lenovo, HP, Mac
Laptop	Toshiba (for faculty)
Operating System	Windows (XP, Vista, 7)
Network	DSL (symmetric)
Switch	Mostly Cisco (SG, SWR) and few Netgear
Wireless hub	D-link (DWL 7100AP and DAP 5253 AP)
Anti-virus	Avira Professional and Kaspersky
Word processing	Microsoft Office suite (different version, but mostly 2007, in the process of updating to 2010)
Other software	Sage MIP Fund Accounting (for Finance office) FX Scholar (for Registrar office to keep student record and course data) Destiny (for Library to manage stock and membership)

	EDEExpress (Financial Aid)
Server	Linux and Window
Website and Mail	Fedora (with Apache)

Technology Management

Bruce and Grace in the Computer Services office are in charge of technology management for almost the whole campus. They set up the network infrastructure and manage the servers. They take care of the daily complaints, questions, and troubleshooting requests. E-van, who recently joined the Computer Services office but is still in the transition stage, started to take some troubleshooting work so Bruce can be more focused managing the network and servers.

When the school changes locations of different offices and departments, or relocate some staff and faculty from one place to another, these decisions are made without taking into account the technology infrastructure on the campus. When these changes happen and people want to use the internet at their new office, Bruce is responsible to connect people into the network. He needs to get new cables to new places and this is the reason why some cables do not go inside the wall or ceiling but hangs freely without protection.

Technology Planning

Technology planning is done by the school's Technology Resources Committee, where they have at least one staff representative from each office to attend the monthly meeting. PCC has a 15-Year Institutional Master Plan from 2009 to 2024, and technology plan is part of the Master Plan, in which the objectives of technology development for the school are defined. The 15-year master plan is divided into 3 chapters of 5 years each to accommodate easier assessment and management. Each year, progress is evaluated against strategies and is adjusted according to new problems or opportunities arose.

Internal and External Communication

Staff and faculty communicate with each other mostly by phone calls as they only need to dial the extension of the destination. They can also visit other offices if they want to have a face-to-face conversation or to pass some files. Email is also one mean of communication. The Computer Services office host the mail service on their own mail server and staff, faculty, offices can have a @palau.edu address, but many chose to use their own personal addresses instead because currently @palau.edu emails can only be accessed on campus through the intranet. Also it is sometimes slow to receive emails from the server.

In terms of external communication, PCC has a weekly newsletter and a website. Part of the Development Office's responsibility is public relation management, and they release the weekly newsletter of PCC (Mesekiu's News) that is also available for the public with free copies provided in some local stores. The electronic version of the newsletter is also posted on PCC's website.

The static-html website was created about 10 years ago and the design is not very up-to-date. (A screenshot of the home page of the current website is attached below) Among the 139 community colleges that receive accreditation from the same organization, PCC's site is 139th in terms of accessing speed (from off the island), which is mainly caused by PCC's small bandwidth and the fact that all data goes through satellite communication. The website displays information regarding

the school's history, policy, accreditation, and programs, however, not in a very audience-targeting manner. There is also an inward-facing website (see below) that can only be accessed from the intranet where documents related to accreditation, annual review, department policies can be found.

Grace has realized the shortcomings of the current website, but because of the lack of resources and other work she holds responsible, it was hard for her to find time to search for alternatives.

Figure 5: PCC's Current Website



Figure 6: PCC Intranet Site



The instructor of IT classes at PCC, Johvanna, started helping Grace on the website one year ago. Per her request, two license of the software Artisteer was purchased. Artisteer is a website theme tool that is compatible with the main content management systems (Joomla, Blogger, Wordpress, and Drupal) and allows users to create their own themes. However, due to time constraints as Johvanna teaches classes and helps the Computer Services office with other tasks, the website was never redesigned or rebuilt.

Information Management

The school uses FX Scholar database to manage student's records in terms of personal information, registration, courses, and grades. They pay a yearly maintenance fee ever since the software was installed so they can contact the provider for help if there is any problem.

The library uses software called Destiny to manage its catalog and membership and has its own server located inside the library building. It combines the catalog from smaller local libraries (for example, Palau Public Library and elementary school libraries) and store the data in PCC's server so users can search those catalogs as well. All books, DVDs, and journals in PCC's library have bar codes and the staff just needs to scan them when someone checks out something from the library.

Faculty and staff's information is kept by the Human Resources office in Access and Excel. Other offices also manage their own data, either on paper or in their computers.

For the servers in the Data Center room (server room), Bruce backs-up the data daily and does tape back-ups monthly. For the offices that run their own software on their own servers, they back-up the data themselves.

II. Task: Enhance Web Presence and Content Management

Motivation

A website provides accessible information for audience who has internet connections, and sometimes it is also where the audience gets the first impression on the organization. The current website of PCC was built about 10 years ago by Grace using software called Namo WebEditor. The designer view is the same as the audience view: what you get in the design window is what the audience will see when they browse the page. Pages created by Namo WebEditor are static html pages, and there are only a few themes available in the software. As a result, the current website is not very appealing and looks outdated in terms of design and structure compared to other academic institution's websites. For any audience, especially those who are familiar with internet browsing, the front page might drive them away instead of let them stay and keep browsing.

Besides the look and design, the current website does not provide a pleasant browsing experience because it is hard for users to find what they are looking for. For example, there is no link from other pages of the site that leads to the application form. The only way to access the form is to go through the "Form Repository" link on the front page, which can be easily missed by users who are not familiar with the site. The site map is also missing. A lot of information on the current website, like the master plan and the annual report, is more related with PCC's accreditation. It is stating its accreditation status more than promoting the academic programs and the life experience a student can get at PCC while students should be one of the main targeting audience groups of the website. Many academic institutions' websites group the content by the targeting audience. For example, many of them have tabs like "Current Students," "Prospective Students," "Alumni," on the home page that help the users to find targeted content according to the group they belong to. From the current website of PCC, it is hard to tell their defined targeting audience for each piece of content, and in hence causing difficulties in navigation.

Functions are very limited as well since there is no plug-in or extensions available in Namo WebEditor. One important feature that helps users to quickly find what they are looking for is the search function, which is not supported in the current website. There is also no responsibility distribution in the current content management process. Whenever there is new information or changes in existing content, the office that has those content (for example, the Development office has all the news, and the Academic Affairs office has all the course details) provides the material to Grace, then she updates the website. This put Grace in a responsible position for the content while she has no procession of the material. A content management system (CMS) with access control capability can easily enable staff member who is closer to the information to post content.

Because of the small bandwidth and the fact that the web server, mail server and almost all employees using the same DSL line, the content on the website is also limited in order for the accessing speed and loading experience to be smoother. Content is mostly paragraphs of texts, and the only few pictures are very small in pixel size.

The consulting task is to assist the PCC webmaster, who has no time to search and switch to alternative approach, with first redefining the audience group of their website content and reorganize the information. Based on that, the student consultant will help PCC to create a new website based on one CMS, which is more targeting, appealing, and easier to navigate and hence redefines PCC's web presence toward the targeted audience. The solution will also make the content management an easier process.

Outcomes

CMS Tool Chosen

In the beginning of the consulting project, the student consultant researched several CMS options, focused mainly on the three major CMS (WordPress, Joomla, Drupal) because of the large user base and therefore more reliable service and easier access to support from user forums. All of these three CMS is based on PHP. Research showed that WordPress is easy to pick up and is for people with little programming experience, Drupal takes longer to pick up and requires some programming skills, and Joomla is in the middle ground between WordPress and Drupal.

The student consultant recommended Grace to use WordPress and the recommendation was accepted. The main consideration factors are the level of programming skills required and the time taken to learn how to use the platform. Both the student consultant and the community partner had no experience with PHP before. Also community partner was looking to distribute the responsibility of content management to people who owns the information, and many of these people are not very familiar with technology other than Microsoft Office. Given the time frame of the project, a platform that is easier to pick up is the optimal solution; especially when the expected functionalities of the new website can be achieved equally well by the three options. After the student consultant presented the information found about the three CMS to Grace, she agreed with the reasoning and the recommendation of using WordPress as the CMS platform.

Targeting Audience Defined

Both the student consultant and the community partner agreed that the two main targeting audience of the website are students and their parents, and the accreditation team. The website serves as a media to attract prospective students and inform current students by providing information that relates to students' interests and needs. It also plays an important role in helping the college to keep its accreditation status from the accreditation team.

Since PCC is the only higher education school in Palau, all Palauan students and their parents are aware of the school and its programs. Located by the main street of the main city, Koror, PCC is easily accessible by any Palauan. Local people can also easily call any office for any information inquiry. Because of this, the targeting audience of the website should reflect a bigger emphasis on off-island audience since the easiest way for them to get PCC's information is by checking the website.

An official website for the school is required in order to maintain the school's accreditation status, and accreditation reports and documents should be presented on the website within one-click from the home page. It is important for the website to include information that the accreditation team is looking for.

In the earlier stage of this project, meetings were held with at least one representative from each division that is going to update their own content on the website. Separate meetings with each office were held instead of a group meeting in order to allow for in-depth communication (instead of informative one-way communication). Discussions with each office reshaped their idea of the website's targeting audience and got them involved in the project from an early stage.

People who will be using the CMS platform to maintain and update their office's information were defined by Grace according to their role in the office and their technical skills. Meetings were held with representatives from the following offices:

Figure 7: Initial Meeting Office and Personnel

Office	Representative
Academic Affairs	E-van Ongrung
Admission & Financial Aid	Dahlia Katosang, Leona Tkel
Student Services	Teongel Ngirkelau
Continuing Education	Hugler Imetengel
Educational Talent Search	
Adult High School	
Development (school news)	Tchuzie Tadao
Human Resources (job vacancies)	Omdasu Ueki
Library	Pioria Asito, Kendra Ise
Corporative Research and Extension	Dannies Uehara
Accreditation Liaison Office	Dei Olikong
Upward Bound Program	Akiko Beketaut
Maintenance Assistance Program	Don Hanser

Hosting Service Subscribed

After several discussions, the student consultant and the community partner decided to host the website using an external web hosting service providers. The old website was hosted locally on a Fedora server. The community partners, both Grace and Bruce, were not aware of web hosting service as an alternative before. The website was very slow to access because of the college’s bandwidth limitation on both incoming and outgoing traffic. It is especially slow to access from outside of Palau because all the traffic goes through the satellite. As previously defined, the main targeting audience is outside of Palau, and it is easier for them to access if the website is hosted closer to them.

The student consultant researched some hosting service options, focused mainly on WordPress hosting. WordPress’s two official hosting partners, Bluehost and DreamHost, were recommended because of the reliability and expertise of WordPress support. After looking through both hosting service providers’ websites, services, terms and conditions, Grace decided to subscribe to DreamHost’s Educational Discount program, which costs about \$30 per year.

The hosting plan came with one free domain registration so one domain www.belaupcctest.net was registered for testing purposes.

Domain Configured and Remotely Hosted

PCC already owns the domain www.palau.edu and was using it for the old website. In order for DreamHost to host a domain that is registered elsewhere, the nameserver configuration has to be changed at the current domain name registrar. For PCC’s domain name registrar EDUCAUSE.edu, it is not allowed to put in any nameserver that does not end with palau.edu. Also DreamHost cannot host any .edu domains. As a solution, the subdomain pcc.palau.edu was chosen to be hosted by DreamHost for the new website. The student consultant found this solution at http://wiki.dreamhost.com/Host_a_subdomain_on_DreamHost_when_DNS_is_controlled_elsewhere and followed this instruction to set up DNS configurations with Bruce, who is in charge of all the

network related settings. Then DreamHost's one-click install feature was used to install WordPress at the address pcc.palau.edu.

Theme Selected

Grace is not familiar with HTML or CSS, and has no previous experience with PHP. Although there is one faculty, Johvanna, the instructor for IT courses, knows PHP programming, she is busy with teaching classes and has no time to work on the website. She purchased Artisteer, software for website theme design using the school's funding for technology, but the tool only customize the color scheme, navigation bar style, button style, and some other simple style formatting. Features like slider or gallery is not supported by the software. Therefore Artisteer was considered as a sunk cost and was not used in this project.

The student consultant researched extensively for WordPress education theme available online, compiled the information into one Excel file and presented to Grace with some recommendations. The compiled list of WordPress themes for education that are frequently recommended in various blogs can be found in the appendix of this report. The student consultant looked at screenshots and demo sites for each theme on the list and excluded those that have advertisements, unreliable support, too simple functions, too few design features, and too small user base. Three themes (Grand College, WordPress University, and WP Education) were recommended to be looked at by all the members of the Computer Services Office, including Grace, Bruce, and E-van, and Grand College was picked as the theme for the new website.

Originally, the student consultant had the idea of running survey in the offices and among some students to pick a theme with the highest votes. But after discussion with Grace, the survey idea was dropped, considering that criteria like support, user base, and reliabilities will not be considered in the survey but is the most important factor that makes sure the new website will be running smoothly and will be easy for Grace to maintain.

The theme selected, Grand College, is sold at themeforest.com, being one the most purchased education theme. The theme itself has a clean look with features like picture slider, anything slider, gallery, personnel, testimonial, course table, price table and page builder that makes it easier to manage content of different type on each page. The developer of Grand College, Goodlayers, had a record of developing several most popular themes on themeforest.com and all of them have high ratings from the users (above 4 out of 5). Questions or requests made on themeforest.com's comment section were answered with helpful support in a timely manner.

The theme was purchased and downloaded from themeforest.com.

Site Structure and Content Responsibility Defined

A list of official websites of schools that receive the same accreditation and have similar limited resources was looked at by both the student consultant and the community partner. Then a top-level site structure was created with the responsibility of each WordPress user defined.

- Guam Community College
- College of Marshall Islands
- American Samoa Community College
- College of Micronesia

10 users were created by admin inside WordPress. Grace assigned the people who will be using each user account. They are the people who have easier access and know better about the content that should be displayed on their responsible pages and they are the people who have sufficient

computer skills to use WordPress. Responsibilities were assigned according to the functions of their offices. For example, the page for scholarship is listed under financial aid for website viewer's ease of access, but is managed by the Development Office because currently all the scholarship opportunities are managed by the Development Office. E-van, a former member of the Academic Affairs Office who just joined the Computer Services Office this summer, was chosen to put in information for Academics pages, because the Academic Affairs Office had many vacancy positions this summer.

WordPress itself has the function to set different roles for users, which are writer, editor, contributor, and subscriber. These roles define each user's level of access permission to all the pages but not to some particular pages. The student consultant researched for plugin that can control user access to particular pages and found the plugin Role Scoper that works well with the theme. It allows the WordPress admin to set user permission to each single page, categories, or each custom post type provided by the theme (for example, price table, course table, and personnel). Then when the users log in into WordPress, they can only see and edit the pages that were assigned to them but not any other pages. So no one can change other's pages.

The list below shows the pages or subpages that each user is responsible for.

Figure 8: Website Responsibility Distribution

Responsibility	WordPress User	Person (Office)
- Home	admin	Grace (Computer Services)
- About PCC	admin	Grace (Computer Services)
- Jobs @ PCC	hr	Omdasu (Human Resources)
- PCC News	development	Tchuzie (Development)
- Academics	academics	E-van (previous staff at Academic Affairs)
- Admissions	finaid	Leona (Admissions and Financial Aid)
- Financial Aid	finaid	Leona (Admissions and Financial Aid)
- Scholarship	development	Tchuzie (Development)
- Student Services	registrar	Teongel (Student Services – Registrar)
- Community	admin	Grace (Computer Services)
- Continuing Education	community	Hugler (Talent Search)
- Educational Talent Search		
- Adult High School		
- Maintenance Assistance Program	map	Don (Maintenance Assistance Program)
- Corporative Research and Extension (CRE)	cre	Dannies (CRE)
- Library	library	Kendra (Library)

Users Trained and Content Uploaded

The student consultant, together with Grace, provided individual trainings to the WordPress users because each of the users has different level of technical skills and some users need to use some custom post type that comes with the theme (for example, user academics need to know how to add and edit courses).

Before each training session, each user was asked to have the content for their pages ready. During the training, users were taught step by step how to put in content to their pages. So by the end of each training session, users' pages were completed with all the information and were ready to be viewed.

With office that has more information that are more complex, for example, the Admissions and Financial Aid Office, meetings were scheduled before the training session to discuss how much information they want to put on the website, how they want to organize the content into subpages, and what information will be displayed on each page. This process helps them to think through again about their targeting audience and how to provide content in a manner that is relevant and easy to navigate, instead of copying information directly from the old website.

The meeting and training process did not run as expected toward the later phase of the project as some office were getting really busy with the start of the new semester and some other office experiencing unexpected schedule or personnel change. Training that went as expected was with user development, community, library, and map. The users who participated in the meeting process but not the training session were financial aid, registrar and registrar. They provided content for their pages, but the student consultant and the community partner created and edited their pages. For the rest of users, who experienced difficulties participating in the project, the student consultant and community partner can only use information from the old website or from other sources (the college's General Catalog contains very comprehensive information regarding all the programs and offices).

Although a manual on how to edit content in WordPress was created by the student consultant and distributed to the users, due to the fact that some users were unable to get trained on using WordPress, there is a risk that some users will not update their content or pass the responsibilities back to Grace in the future. In the last meeting with the school's president where the student consultant reported on the project, the idea of responsibility distribution and ownership of content management was emphasized to make sure that in the future Grace will not be held responsible for the content, as the president serves as an effective enforcement of all the policies on campus. Grace also decided to raise the topic of website content management in future meetings of Technology Resource Committee to enforce the distribution of responsibility for website content.

Additional Software Introduced

Two additional software were introduced during this project, FileZilla and Picasa.

FileZilla, an open-source software, was introduced to the administrator of the new website, Grace, to FTP access all the website files hosted in Dreamhost's server.

Picasa, Google's picture editing software, was introduced to users who will upload pictures for their pages. With each user, the student consultant went through the process of making picture banner from 3 to 4 pictures and exporting the picture collage in a smaller size for uploading to website later. Flat banner image size was used. So on each page, one image does not take too much vertical space from the rest of the text content and therefore viewers can see more text without scrolling down. The same settings and configurations were taught to the staff in order to set a standard on design and size of the pictures across all the users and all the pages. The only office that was given different picture formatting and size was the Development Office as they upload picture for the news posts. Before this introduction to Picasa, most staff did not know that images need to be

modified to fit web display. After this training, they started to understand the idea, especially why images need to be compressed before uploading to a webpage and how this can be done.

Design and Functionality Customized

The theme Grand College comes with the ability to change some of the design settings to fit the need of customization, for instance, logo, color scheme, and sidebar (left, right, or both). The student consultant changed the color scheme of all the theme elements to fit PCC's green color that is painted on all the buildings. When the school logo was asked for the website, it turned out that since there is no designer on campus and there is no official design requirement for all the printing material, the original file of the logo was lost and the logo appears with slightly different color and dimension ratio on different printing material. So the student consultant, based on a non-vector logo image, traced a vector version of the logo using Adobe Illustrator and passed the file to Grace so the logo can be used in any size in the future (vector image does not have blurry edges when the image is sized up or down).

Two plugins, My Custom CSS and Easy Table, were used to further customize the layout of the website. Any CSS codes put in My Custom CSS overrides CSS formatting from all the other CSS files. Font size, line height, list spacing, navigation bar spacing and some other formatting were put in the plugin by the student consultant. The plugin was used instead of changing the original CSS files so in the future when the theme or other plugins have updated versions, Grace can just simply replace the old version files with the new version files without losing the formatting customization because formatting in the plugin will override theme formatting again. Otherwise, she would need to manually find the changes made in old files and copy them into the new files.

Easy Table was installed to easily create tables without typing html table tags. Together with My Custom CSS, tables of formatting styles that are different from the theme style can be created. Easy Table allows table to be created by using the tag `[table][table]`. Each line is a separate row in the table, and each cell is identified by a user-defined symbol (the student consultant configured this to be “|” to avoid conflict with content that contains “,” or “;”). The plugin is mostly utilized by the academic calendar on the new website. The student consultant searched for calendar or events plugins as an alternative, and tested 10 different plugins, but none of them fit the need of academic calendar exactly. They were having too complex steps, taking too much space to display one semester, too hard to manage from back-end, or not supporting multiple-day events. As a result, the idea of using calendar/events plugin was abandoned. Table created using Each Table satisfies sufficiently the need of displaying academic calendars by semester in a clean and tight manner.

The student consultant made some other customizations by changing some of the PHP files in the theme. For example, the news widget on the front page were added “view all” link at the bottom so viewers can easily follow the link to find all the news if they want to read more. All these customizations are documented in the Customization Manual created by the student consultant, so Grace can refer to the document to learn how each customized feature was accomplished. The document is attached in the appendix so details of these customizations are omitted here.

Development and Production Two Sites Model Established

During the initial stage of website content uploading, all the users including the admin, were updating the site at pcc.palau.edu. It was slow to access and sometimes http requests fail because they timed out. Although it takes some waiting, all the content were uploaded successfully. The DSL line's speed and condition varies from day to day. During one training session with one of the

offices, it got to the point that nothing can be loaded on the remote hosted website. The user could not even login because the page did not load after all the waiting.

To avoid that the users will not be able to access and manage content on the website due to extremely slow connection in the future, the student consultant researched into the alternative of hosting the website at two places, both locally and remotely, with the same content. One WordPress plugin, Duplicator, was found that can accomplish the task and the “two sites model” was established.

Duplicator can take a snapshot of the website including all the files and database record and compress everything into a .zip package with a .php installer file. After the .zip package and the .php installer file are copied into the directory of the website, the .php installer can be accessed using a browser. It takes in some database information (such as database name, user name, password) to access the database, and when the installer runs, the .zip package is decompressed to replace the files in the website directory with files in the package and all the database record is updated to comply with the website URL. The process of creating a snapshot of a locally hosted WordPress site and then sync and update a remotely hosted WordPress site takes less than 5 minutes excluding the time to upload the package into the remote site’s server.

WordPress was installed on the server that was used to host the old website with the URL local.palau.edu. The remote hosted website was successfully copied to local server using Duplicator. The student consultant then used the testing domain registered earlier, www.belaupcctest.net, to test copying local WordPress site to DreamHost hosted WordPress site. After the testing was successfully done, the model was implemented on the real site pcc.palau.edu.

The plugin allows Grace to easily manage the website in two environments. The local site is the development site where everything is tested there first. If anything was not working, for instance, conflicts between plugins or between the plugin and the theme, the website can be easily restored using a backup snapshot from earlier. The actual site that is accessible for external audience, the production site, will not be affected by any testing errors. The development site was also configured to be accessible only by internal users who are using the DSL lines that are managed by the Computer Services Office. So only internal user can make changes to the website, and it is much faster to update any content on the local site than on the remote site.

The student consultant showed the community partner how to use Duplicator and explained what each step is doing. During the last week of the project, Grace used the plugin to create a snapshot of the local site daily to sync to the remote site. She will carry on this process and make it one of her daily routine as the webmaster.

Final Result

2 daily synced sites

 pcc.palau.edu hosted with DreamHost for external audience

 local.palau.edu hosted locally for fast local access and testing

4 plugins – Role Scoper, Duplicator, My Custom CSS, and Easy Table

4 menus – Main Navigation, Top Navigation, Quick Access, Academic Degrees and Programs

11 WordPress user accounts (including admin)

17 sidebars

82 pages

Home

About PCC (1 main + 4 subpage)

Accreditation; PCC News (1 subpage for newsletter); Jobs @ PCC; Campus Map

Academics (1 main + 9 subpage)

4 pages for 4 degrees; Academic Programs; Special Programs; Certificates; Course Catalog (40 subpages for 40 course categories); Academic Calendar

Admissions (1 main + 1 subpage)

How to Apply for PCC

Financial Aid (1 main + 2 subpage)

Financial Aid Programs and Requirements; Scholarship

Student Services (1 main + 6 subpage)

Registration & Records; Counseling & Academic Advising; Student Housing; Recreation; Learning Resource Center; Student Organizations

Community (1 main + 8 subpage)

Continuing Education; Adult High School; Educational Talent Search; Upward Bound; Corporative Research and Extension; Maintenance Assistance Program; Workforce Investment Act; Child Care Center

Library

Email Webmaster

Forms for Students

Site Map

342 course items

Recommendations

Google Analytics

For the old website, the webmaster could not know how many visitors come to the site, how long they stayed, and where are the traffic coming from. With the new website, Google Analytics can be implemented to track all the traffic coming to the site. It can be implemented either from within DreamHost, through Google's official WordPress plugin, or from inside the theme Grand College's admin panel.

The student consultant asked the community partner to register with Google Analytics service before the end of this project. As a continuing effort to better understand the audience of the website, it is recommended for Grace to utilized features provided by Google Analytics to get meaningful statistics regarding the website traffic.

The community partner can either slowly research and explore Google Analytics functionalities as she uses the services, or seek for help from additional resources. It can be part of a future project between PCC and TCinGC. An alternative is to introduce the project to the students who are taking IT courses so the students can do the research and present findings to Grace. In this way, the task can also enrich the student's knowledge.

Online Transcript Request

Currently, if a student wants to have a copy of his/her transcript, a form needs to be filled and a hard copy needs to be sent to the Registrar Office. It would be convenient for the students, especially

those who are off-island if they can just fill the transcript request form online and then the transcript can either be sent as an electronic version or mailed as a hard copy with a fee.

This task needs a combined effort of the Computer Services Office and the Registrar Office to implement. If hard copy transcript will be provided as an option and fee will be charged, it also needs the Business Office's effort to make sure that all incoming transactions can be processed. The transcript requesting system can be either built on top of the new website or as a separate system that extends the website.

This task can be part of a future project with TCinGC.

About the Consultant

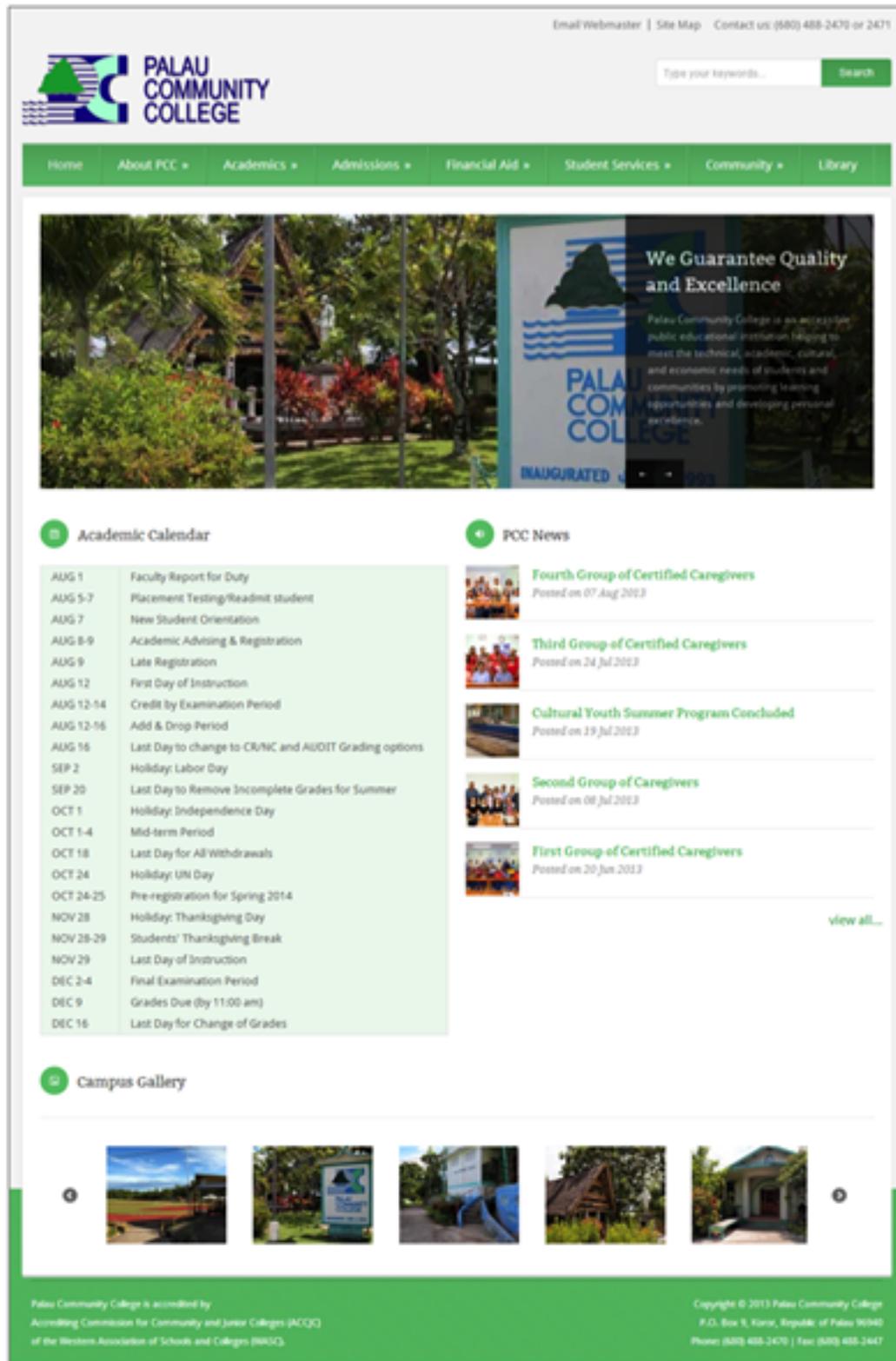
Cheng Ding is an Information Systems Management major student in Heinz College at Carnegie Mellon University. She is looking for job opportunities in the city of New York, probably in a field related to website design.

Appendix A. Theme research result

	10 Best Education WordPress Themes for School and College Website	30+ Beautiful Education WordPress Themes	45+ Education University WordPress Themes	Best Education WordPress Themes for Education Websites	27 Best Education WordPress Themes Free and Premium Version	20 Best Education WordPress Theme For Schools College And Universities	Where to find
1	Academica	Academica	Academica	Academica		Academica	wpzoom
2			Academica Pro	Academica Pro		Academica Pro	wpzoom
3	Academy	Academy	Academy		Academy	Academy	themeforest
4			Anchor				templatic
5	EduBlog	EduBlog			EduBlog		wpsam
6		Education		Education		Education	studiopress
7	Education Academy	Education Academy	Education Academy	Education Academy			templatic
8					EducationSite		themepix
9	EduPress	EduPress	EduPress	EduPress		EduPress	wpzoom
10		Erudito	Erudito	Erudito		Erudito	wpzoom
11	Graduate	Graduate	Graduate	Graduate		Graduate	gabfirethemes
12	Grand College	Grand College	Grand College	Grand College	Grand College	Grand College	themeforest
13			Jasper		Jasper		themeforest
14			King Power		King Power	King Power	themeforest
15		Lotus	Lotus		Lotus	Lotus	themeforest
16			Modernize		Modernize	Modernize	themeforest
17			My College		My College		themeforest
18			ParkCollege				themeforest
19					proEducation		newwpthemes
20		Universidad	Universidad	Universidad			vivathemes
21	WordPress University	WordPress University	WordPress University			WordPress University	themeforest
22			WP Education		WP Education		themeforest

	Source	Price	Ratings	#of Reviews	Purchase	Comment
King Power	themeforest	\$45	4.71	80	867	217
Modernize	themeforest	\$50	4.68	1242	12327	2123
Lotus	themeforest	\$45	4.65	144	1587	607
Academy	themeforest	\$55	4.62	85	864	705
Grand College	themeforest	\$45	4.49	291	2777	407
WordPress University	themeforest	\$40	4.17	148	882	204
My College	themeforest	\$45	4.14	7	116	65
WP Education	themeforest	\$45	4	5	65	28
Jasper	themeforest	\$50	3.33	3	53	12
ParkCollege	themeforest	\$45			48	13
Academica	wpzoom	free				
Academica Pro	wpzoom	\$69				
Erudito	wpzoom	\$69				
EduPress	wpzoom	\$69				
Anchor	templatic	\$65 or \$99			59	316
Education Academy	templatic	\$29 or \$49				
Education	studiopress	\$79.95				
EducationSite	themepix	free				
Graduate	gabfirethemes	\$59				40
Universidad	vivathemes	\$45				
proEducation	newwpthemes	free				
EduBlog	wpsam	free				

Appendix B. Screenshots of the website (front-end)
 a. Website front page



b. Standard picture banner

Email Webmaster | Site Map | Contact us: (680) 488-2470 or 2471



Type your keywords... Search

Home About PCC » Academics » Admissions » Financial Aid » Student Services » Community » Library

Maintenance Assistance Program



Contact

Don Hanser
Map training coordinator
488-2471, ext. 254

The Maintenance Assistance Program at PCC is a short-term training program for state and national government employees, as well as utility employees, in the area of infrastructure operation and maintenance. It is funded by the United States Department of the Interior, office of Insular Affairs, through its Technical Assistance Program. MAP means training programs to up-grade infrastructure related government and utility employees' competencies and up-grading PCC facilities related to O&M training.

Much of the MAP training is specially developed to meet specific needs of the government and utility offices requesting the classes. The program allows the college to continue developing Palau's

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Type your keywords... Search

Home About PCC » Academics » Admissions » Financial Aid » Student Services » Community » Library

Library



PCC Tan Sita Lin Library

The library's public access catalog is available online by clicking the button below, or at one computer station in the library.
[Library Catalog](#)

Take a look at our [Micronesia-Pacific Collection](#)

For questions and concerns, library staff may be contacted at palauclib@gmail.com.

Library Operating Hours
Fall Semester (August 14- December 05, 2013)

Monday- Friday: 7:30 am- 7:00 pm
Saturday: 9:00am – 6:00pm
Sunday: Closed

Holidays:
Labor Day (9/02/13) – 10:00 am – 7:00 pm

c. PCC News page

Email Webmaster | Site Map | Contact us: (680) 488-2470 or 2471



Palau Community College

Take your keywords... Search

Home | About PCC | Academics | Admissions | Financial Aid | Student Services | Community | Library

PCC News

07
AUG
2013



Fourth Group of Certified Caregivers

A fourth group of ten new caregivers was certified on August 07, 2013 at the Continuing Education (CE) Training Room of Palau Community College (PCC). Senator Rukebal Inabo and Minister of Health Gregorio Ngimang were present to commend the caregivers alongside PCC President Patrick

[Continue Reading](#)

24
JUL
2013



Third Group of Certified Caregivers

The Care-Giving Program offered by the Continuing Education (CE) Department of Palau Community College (PCC) certified a third group of caregivers on July 24, 2013. A total of 11 new caregivers were awarded: Husna Nestor, Melinda Wasal, Marivic K. Damian, Lizzie C. Delos Santos, Morris

[Continue Reading](#)

19
JUL
2013



Cultural Youth Summer Program Concluded

A ceremony was held for the participants of the Koror State Summer Youth Program on Friday, July 19, 2013. Held at the Koror State Government (KSG) Assembly Hall, the ceremony commemorated each young Palauan for learning an aspect of their culture. Young Palauans who participated in

[Continue Reading](#)

Melekis News

You can access the PDF files of PCC's weekly newsletter archive here.

[Melekis News](#)

News Archive

- [August 2013 \(1\)](#)
- [July 2013 \(3\)](#)
- [June 2013 \(2\)](#)
- [May 2013 \(1\)](#)

News Categories

- [News \(7\)](#)

d. Search Course page and one single course item

Palau Community College Course Catalog search page. The page features a navigation menu with links for Home, About PCC, Academics, Admissions, Financial Aid, Student Services, Community, and Library. A search bar is located at the top right. The main content area is titled "Course Catalog" and includes a "Search Course" section with a search bar and a "View Courses by Category" button. The search bar is currently empty, and the category list is visible on the right side of the page.

Search By Attribute: Course Name

Fill Your Keywords: Type your keywords...

View Courses by Category:

- AB: Auto body Repair
- AC: Air Conditioning & Refrigeration
- AD: Architectural Drafting
- AG: Agricultural Science
- AM: Automotive Mechanics
- BA: Business Accounting
- BP: Blueprint Reading
- BU: Business Administration
- CH: Chinese
- CJ: Criminal Justice
- CO: Communication
- CPH: Community and Public Health
- CS: Computer Science

Palau Community College Course Catalog page for course AB 110. The page features a navigation menu with links for Home, About PCC, Academics, Admissions, Financial Aid, Student Services, Community, and Library. A search bar is located at the top right. The main content area is titled "AUTO BODY REPAIR FOR NON-MAJORS" and includes a table with course information and a "View Courses by Category" button. The table shows the course ID, name, prerequisites, total credits, and lab credits. A description of the course is provided below the table.

Course ID	Course Name	Prerequisite	Total Credits	Lab Credits
AB 110	AUTO BODY REPAIR FOR NON-MAJORS		3	1

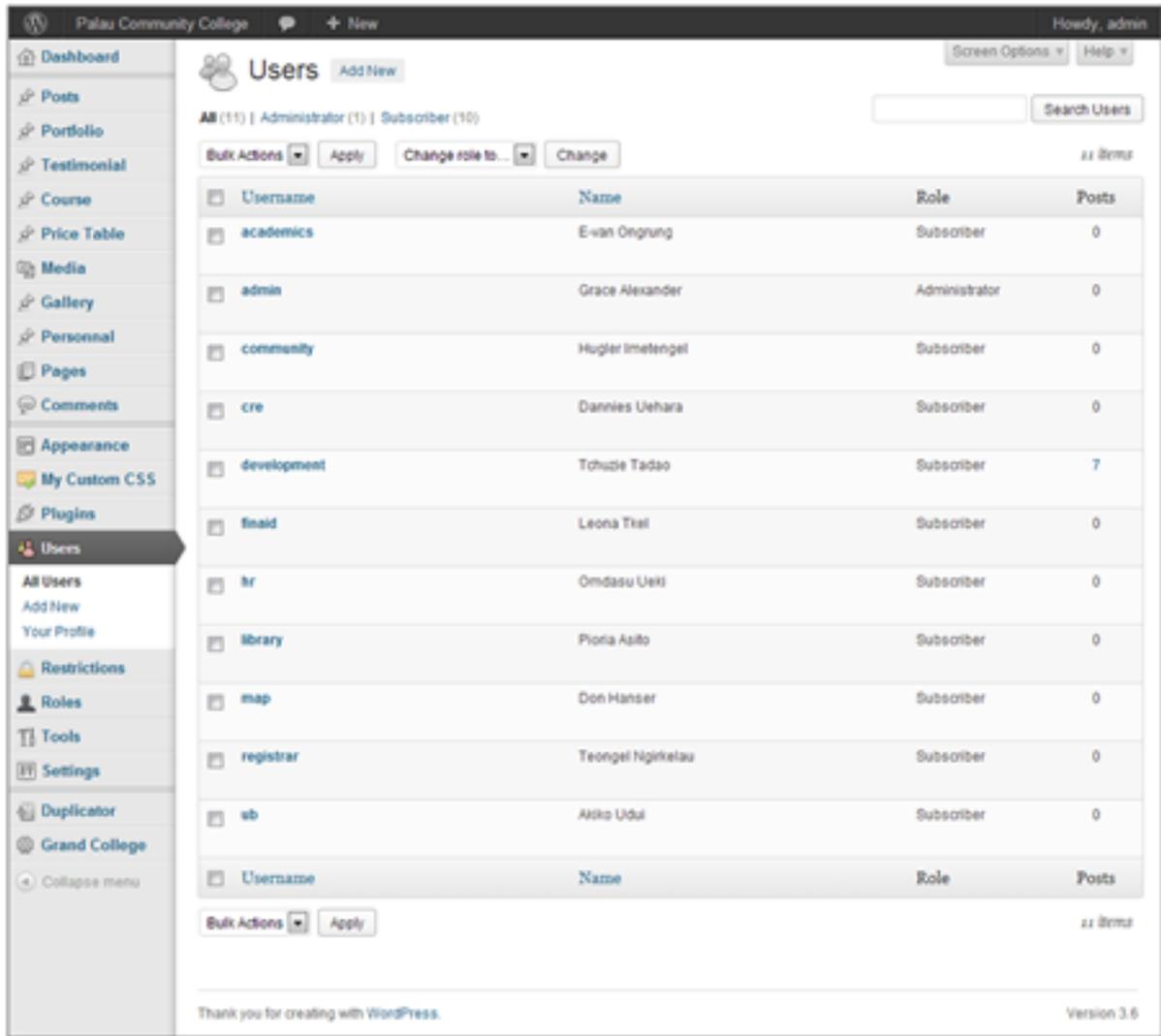
This is a course on the principles and practice of roughing out, digging, picking, filling, disc sanding, soldering, shrinking, and welding. Safe operations of the sander and welding equipment are also stressed.

View Courses by Category:

- AB: Auto body Repair
- AC: Air Conditioning & Refrigeration
- AD: Architectural Drafting
- AG: Agricultural Science
- AM: Automotive Mechanics
- BA: Business Accounting
- BP: Blueprint Reading
- BU: Business Administration
- CH: Chinese
- CJ: Criminal Justice
- CO: Communication
- CPH: Community and Public Health

Appendix C. Screenshots of the website (back-end)

a. WordPress users



b. Plugin – My Custom CSS

Palau Community College

Howdy, admin

My Custom CSS Options

Save

Custom CSS Code:

```
1 /* Theme formatting (override style.css)
2 ----- */
3 body {
4     font-size: 14px;
5     line-height: 21.5px;
6 }
7 tr th, tr td {
8     padding: 5px 12px;
9     border-right: 1px solid;
10 }
11 p { margin: 0 0 10px 0; }
12 ol, ul { padding: 0 0 10px 0; } /* Space formatting of a list */
13 ul ul, ul ol, ol ol, ol ul { margin: 4px 0 -10px 30px; } /* Space formatting of a list inside a list */
14 li { line-height: 19.5px; }
15 ul.large li { line-height: 20px; }
16 li p { line-height: 20px; }
17 input[type="button"] { height: 30px; line-height: 30px; }
18 a.gdl-button { height: 20px; line-height: 20px; } /* button height */
19 ul.tabs li a { padding: 0px 10px; } /* before 0px 20px; changed to make the tabs tighter to each other */
20
21 div.top-navigation.container { font-size: 13px; } /* Top menu font size */
22 div.navigation-wrapper { font-size: 14px; } /* Main menu navigation bar font size */
23 .sf-menu li a { padding: 11px 10px 11px 10px; } /* Space formatting of the main menu navigation bar */
24 .sf-menu li li a { line-height: 14px; } /* Line height of subpages of the main menu navigation bar */
25
26 div.custom-sidebar ul li { line-height: 14px; } /* Sidebar line height */
27
28 /* To now show dates on the "Search Result" page */
29 body.search .blog-date-wrapper, body.search .blog-thumbnail-info {
30     display: none;
31 }
32
33 /* Academic Calendar table formatting
34 ----- */
35 .calendar {
36     font-size: 13px;
37     line-height: 14px;
38     padding: none;
39     border-collapse: collapse;
40     background-color: #edf1ee;
41 }
42 .custom_table {
43     font-size: 13px;
44     line-height: 13px;
45     padding: none;
46     border-collapse: collapse;
47 }
```

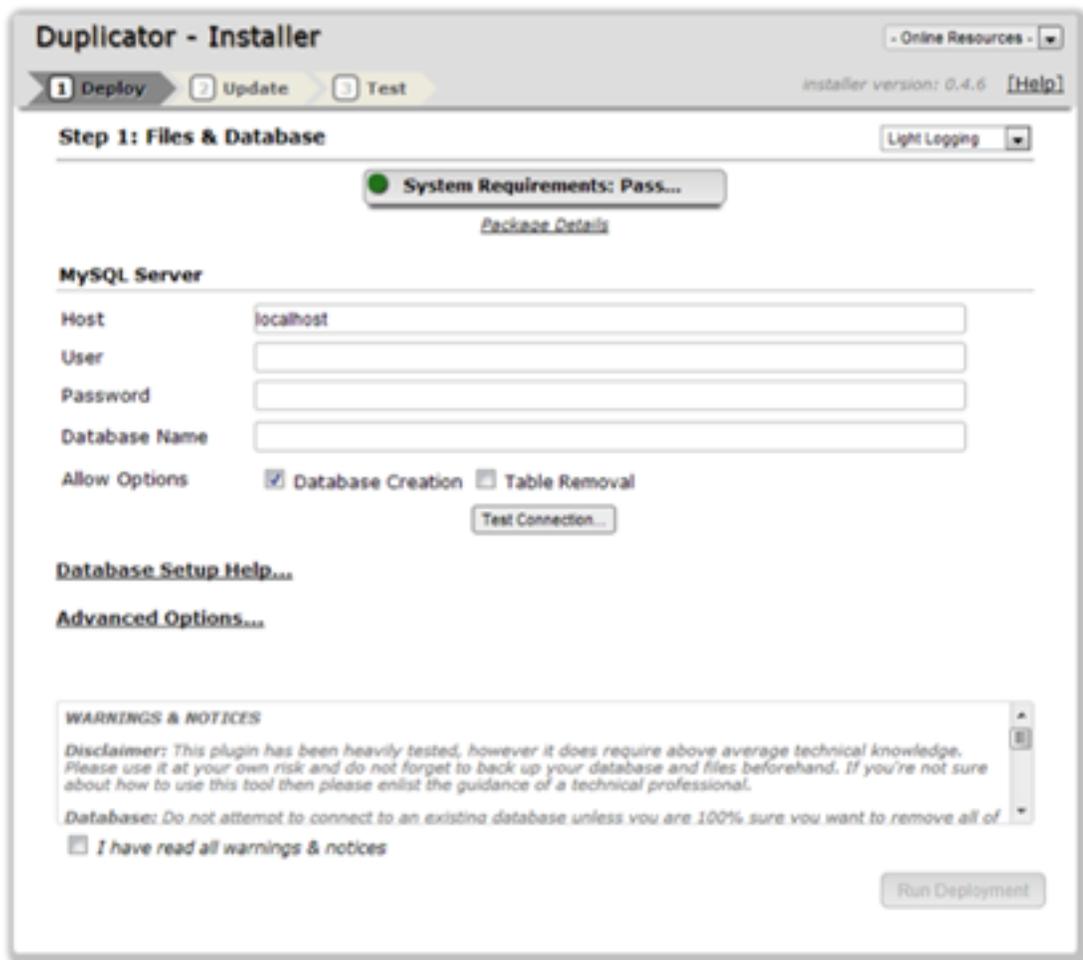
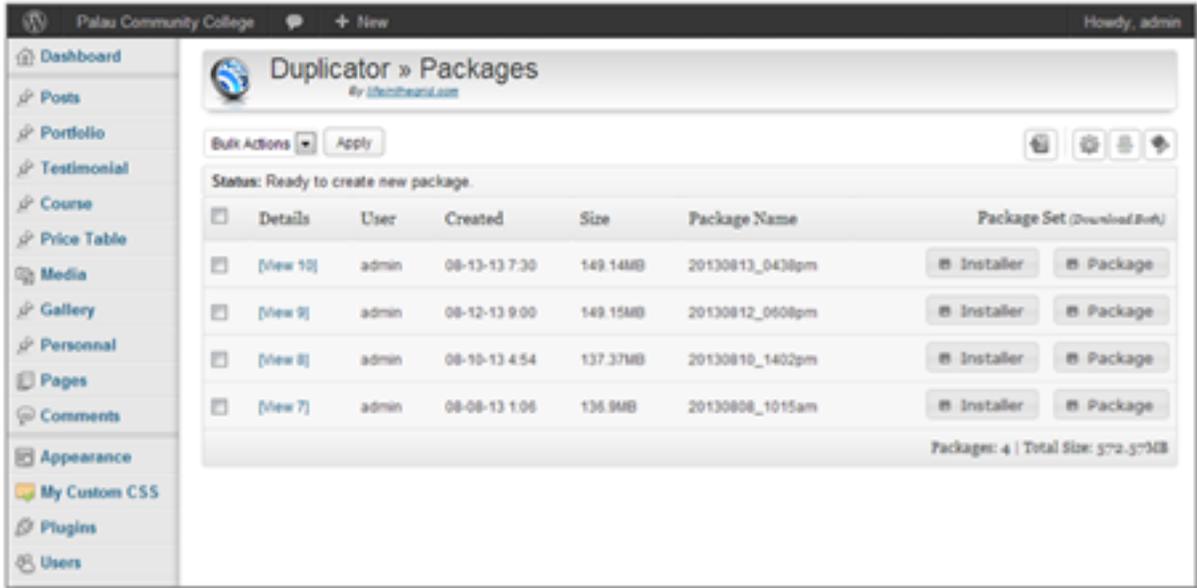
Save

Top

Thank you for creating with WordPress.

Version 3.6

c. Plugin – Duplicator (all packages and installer page)



Appendix D. FileZilla and Picasa

