

Dear Designers and Producers of RACHEL,

The State of Chuuk, one of the four Federated States of Micronesia, is working to increase the use of Information and Communication Technology (ICT) in their primary and secondary schools. The Illinois Institute of Technology (IIT) course “Fieldwork Methods” was initially connected to this project through their instructor, Dr. Laura Hosman. She has had previous experience working with the Department of Education on other education-focused ICT projects in the area. The IIT project team has identified their primary project goal as creating an open source supplemental educational system. This will be accomplished by designing an offline server that contains a database of educational material utilized by students through tablet-based, solar powered computer lab.

Overall, the main project goal is to provide basic tools to incorporate into the curriculum at schools in the State of Chuuk of the Federal States of Micronesia. We plan to set up a main server, which will hold all the relevant information. We know it cannot be all-inclusive due to space/storage issues, but hope to make it as comprehensive as possible for the purposes of education. On the server itself, we will be including content for students from 3rd grade to 8th grade, instructions on how to use the technology in general, and a teacher training plan for how to incorporate the technology into the classroom. We have set up a web-based user interface connected to the server, which can be accessed by students and teachers in order to reach the information and coursework they need.

To function as an educationally focused server in the developing world, obtaining relevant and useful content is one of the most important design objectives. When doing basic research for the server, our team came across the existing server RACHEL. RACHEL is an initiative whose intentions are similar to our project’s: to develop a server for improving the quality of education in the developing world. After analyzing the RACHEL server itself, both at a technical and content level, we found many positive aspects of RACHEL as well as many areas for improvement. By sharing these, we hope to help the RACHEL team, or similar projects in the future, to understand how we expanded upon their model to serve our project’s needs as well as how they can improve upon their own system moving forward. In addition, this will be the foundation for future iterations of similar projects, and we wish to elucidate why certain content was chosen and where there is room for growth in regards to content in the future.

Pertaining to the realm of mathematics, RACHEL contained a variety of textbooks as well as educational videos from Khan Academy. In terms of academic standards put forth by the Department of Education of the United States of America and the Department of Education of Micronesia, the RACHEL server content had no specific areas that were found lacking in terms of mathematical materials. However, a reasonable portion of the materials gathered for the RACHEL server were not included on our server, at least at this stage of the project. Of the Khan Academy videos, all material that was above a college preparatory level were discarded since the material was beyond the scope of our project. Of the textbooks, all were discarded for one or more of the following three reasons: the text provided an insufficient quantity of examples within particular topics, the text did not provide sufficient visualization of content and examples, or the text required an understanding of the English language that was incongruent with

the level of mathematics being learned due to the pace in which students are taught English and the frequency in which classes are taught in Chuukese (the local language).

In regards to the science content, one of the main tasks was to discriminate between the information that can actually be useful and available for the students of Chuuk and the material that is beyond the scope of our project. Most of the information presented by RACHEL for the science department was in the format of video content with an accompaniment of pdf books. The content of science was categorized into the following fields: Physics, Chemistry, Biology, Organic Chemistry, Cosmology & Astronomy, Earth Science and Life Science. Some of disadvantages encountered when trying to formulate and re-categorize the information for the schools in Chuuk for the science department was to try to obtain the correct level of information that is equal to the level of science that is expected of a regular student in Chuuk. For example, some material found in the Biology, Physics and the Organic Chemistry department were too advanced for a high school student. This information was therefore not included. Another item for our wishlist would be more written examples in pdf format, or booklets, which would benefit the student if this type of examples were to be accompanied with the vast selection of videos from Khan Academy.

On the other hand, RACHEL does provide plenty of videos in the science department that will definitely benefit the students. Though it is beyond the scope of this project would be beneficial if the videos contained captions for different languages. In regards to the format in which the information in RACHEL was categorized with respect to the order and organization; it was neat and the subjects followed each other. Therefore, there were no problems with having to organize the actual information in RACHEL. Lastly, the final information added to the content was selected for special requests made by a teacher that requested more information on environmental sciences for the middle school students. In regards to environmental science, we added supplemental material. As a whole, RACHEL is a very useful tool to start from with the material it contains.

The language section of content from the RACHEL server included a list of World Literature Ebooks. These books were not retained for our project due to the tiny font of the letters as well as the lack of any pictures, especially within the section named "Children's Fiction". We also wanted to add grammar instructions necessary for students to learn the English language. Therefore, additional content from online websites were used. This content comprised online pdf's documents of English books that are easy for children to read due to the following: large font and colorful pictures that assist in reading comprehension in addition to colorful lessons and pdf grammar worksheets that help children learn how to better write the English language.

Beyond the subjects of Math, Science, and English, there was additional material that the project team felt was important to include. The specific material we included on our server from RACHEL were the Wikipedia articles and several health guides by Hesperian. Our in-country partners expressed that health guides could be of use to educate children beyond the typical classroom topics and expand the health knowledge of both students and the community.

Not surprisingly, we found the need to add culturally relevant material that was pertinent to our project/location/server. On our server, we included Micronesian videos about cultural figures, local history, and more. We felt that incorporating such material would increase the usability of the server itself because people in the country would feel

a strong attraction to material relevant to their culture and nation specifically. We also included some digital graphic organizers to provide a means for teaching more creatively to teachers who lack the same physical amenities that many people are accustomed to. Overall, this section has the most room to grow. We will continually be looking for additional areas to expand into in order to provide the best overall product for the communities we are working with.

In the future, expanding our system for schools in other regions of the world to use is a hopeful goal. We had specific content relevant to the site we were working at, but this may not be true for different regions. Understanding the culture and education system of the regions in which one works is the first step in making this project a global reality as well as something we really focused on when finding content for our project.

With best regards,

The Fieldwork Methods Chuuk Server Content Team at IIT

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