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University of Hawai'i Manoa (Example 1): Submitted by Monica Stitt-Bergh,
Assessment Office, July 25, 2017

University of Hawai'i at Mānoa Quantitative Reasoning Assignment Design Workshops

In 2015-16, the Assessment Office, in collaboration with other stakeholders on campus, undertook a quantitative reasoning assessment project in order to set a performance baseline for quantitative reasoning competency at the undergraduate senior level. This project was part of the Multi-state Collaborative to Advance Learning Outcomes Assessment (MSC) and our campus [project's report is available](#). The student performance results indicated the need for discussion about learning opportunities and better alignment of course assignments with the rubric (AAC&U's [Quantitative Literacy VALUE rubric](#)). For example, the results suggested that the assignments did not ask students to address *assumptions*. Thus, in 2017, the Assessment Office invited faculty to assignment design workshops for quantitative reasoning. Sarah Post, a professor of mathematics, volunteered to be the workshop co-facilitator because quantitative reasoning expertise was needed. We offered two types of assignment design workshops.

In 2017, the Assessment Office collected student work related to quantitative reasoning—from faculty who participated in the workshops and faculty who were not able to attend. The results are forthcoming and the interpretation will include a comparison of the 2015-16 to the 2017 student performance results to determine if students were able to demonstrate quantitative reasoning competency in each of the rubric's dimensions.

(1) In these small, informal, one-hour workshops with 2-4 participants, the Assessment Office facilitator (Monica Stitt-Bergh) explained the performance assessment results, highlighting areas in which the most attention was needed. She also described the evaluation process in which faculty applied the Quantitative Literacy (QL) VALUE rubric. Sarah Post, the mathematics professor described her assignment and in-class activities (you can see her assignment on page 7). Attendees received a copy of the QL rubric and [2015-16 performance results](#). Faculty participants brought their assignment or assignment ideas to the workshop: the facilitators and other attendees provided feedback in terms of how well the assignment explicitly asked students to demonstrate characteristics described in the highest level of quality on the QL rubric.

(2) In this longer and larger workshop, the facilitators guided faculty through several activities. First, faculty applied the QL rubric to a piece of student work and then discussed how a well-crafted assignment could help students achieve the highest level of quality described on the rubric. Second, they critiqued a quantitative reasoning assignment in terms of its direct and

explicit alignment with the rubric. Finally, the faculty turned to their own assignments. In this workshop, faculty received the [Quantitative Literacy VALUE rubric](#), the [2015-16 performance results](#), a sample piece of student work, and a sample assignment.

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Agendas

One-hour workshops: *Quantitative Reasoning Faculty Share Sessions*

10:00-10:10 Welcome, purpose (“share ideas about assignments that can improve students’ quantitative reasoning skills”), presentation of results and how evaluation occurred by Monica Stitt-Bergh, facilitator from the Assessment Office.

10:10-10:15 Description of a sample quantitative reasoning assignment by Sarah Post, mathematics professor.

10:15-11:00 Open discussion with the 2-4 attendees on their (planned) assignments: concerns and issues, suggestions, in-class activities, clarity, explicit alignment to the learning outcome and rubric.

Two and a half hour workshop: *Quantitative Reasoning Assignments and Activities*

10:00-11:00 Backward design principles and assignment design activity by guest speaker, Stephen Carroll, and an introduction to the campus’s quantitative reasoning requirement by Mike Nassir, General Education Committee member and physics professor.

11:00-11:30 Faculty applied the rubric to a piece of student work (short, less than 3 pages) and Monica Stitt-Bergh facilitated a discussion on rubric effectiveness and how assignment design could improve student performance.

11:30-11:50 Faculty critiqued a quantitative reasoning assignment in terms of its direct and explicit assignment with the rubric (led by Monica Stitt-Bergh).

11:50-12:30 A working lunch in which faculty turned to their own assignments and enjoyed a meal with colleagues while talking about quantitative reasoning teaching and learning.

University of Hawai'i Manoa (Example 2): Submitted by Yao Zhang Hill, Assessment Office

University of Hawai'i at Mānoa (UHM) – Assignment Design for Powerful Learning: A Workshop for Faculty in College of Tropical Agriculture and Human Resources (CTAHR)

Assignments are powerful learning tools. Well-designed assignments that align with learning outcomes and evaluation criteria also make assessment more effective. As part of the efforts to help faculty improve assignments and increase the quality of learning evidence for assessment, the Assessment Office at the University of Hawai'i at Mānoa led several collaborative workshops on assignment design. One of them is the **Assignment Design for Powerful Learning: A Workshop for CTAHR Faculty**. The 3-hour workshop was designed for faculty interested in improving student learning in: written communication, critical thinking, and quantitative reasoning. Faculty members were asked to bring 4 copies of their assignments to share.

This workshop is a collaborative effort between the Assessment Office, the Center for Teaching Excellence (CTE), the CTAHR Dean's Office. The CTE and CTAHR's Dean's Office played a crucial role in advertising for the event and recruiting participants. The Assessment Office facilitated the workshop in March 2016. The intended outcomes of the workshop are for the participants to:

- Apply excellent assignment design strategies to empower learning;
- Provide and receive constructive feedback on assignment design with peer colleagues;
- Explore scholarship and funding opportunities related to assessment for learning improvement; and,
- Efficiently assess student learning using effective assignments.

The workshop's agenda is as follows:

11:30-12:00 Lunch (Sponsored by Multi-State Collaborative Campus Funding)
12:00-12:30 Welcome from the Dean's Office and past participants sharing their experience
12:30-1:00 Yao Hill from the Assessment Office introduces assignment design principles
1:00-1:10 Break
1:10-2:10 Assignments sharing and discussion
2:10-2:30 Share-out, scholarship and travel funds opportunities, and workshop evaluation

Ten faculty members participated, including the Associate Dean of CTAHR. One CTAHR faculty member shared her learning at the [January 2016 Assignment Charrette](#) (facilitated by Natasha Jankowski and David Marshall on campus). Yao Hill from the Assessment Office presented learning theories and their implications for assignment design and assessment. The participants then shared their assignments and received peer feedback.

Eight participants completed the workshop evaluation. 100% of them considered the workshop useful and effective. Peer-sharing and learning theories were most valued. 88% of the respondents planned to try out the assignment design strategies after the workshop. Frequently mentioned strategies are: using rubrics with specific evaluation criteria, engaging students in self- and peer assessment; and cultivating meta-cognitive skills; Three participants joined a follow-up support group meeting in May 2016 and shared their assignment implementation experiences.

Sample Materials:

- [Workshop flyer](#)
- [Workshop PowerPoint slides and handouts](#)
- Workshop evaluation form (see page 12)

University of Hawai'i Manoa (Example 3): Submitted by Yao Zhang Hill, Assessment Office

University of Hawai'i at Mānoa (UHM) – Assignment Design for Powerful Learning in Oral Communication Workshop

The Assessment Office led the event in collaboration with the General Education Office, the Oral Communication Focus Board, and the Institutional Learning Objectives Implementation Committee. Yao Hill, Hoku Aikau, Jennifer Matayoshi, and Jenifer Winter represented each of the offices/groups. The workshop was designed for faculty interested in developing students' oral communication skills. The goal is for participants to apply assignment design strategies to improve students' oral communication skills in context awareness, content development, and skillful delivery. The learning outcomes are that the participants are able to use and reflect on strategies to:

- Develop student learning outcomes for oral communication tasks
- Scaffold learning for successful performance on the assignment
- Engage students in reflection and self-assessment
- Use rubric for both learning and assessment purposes

The workshop is one and a half hours. The format is a presentation of assignment strategies for half an hour followed by participants sharing their assignments and receiving peer feedback in small groups for one hour. The workshop was offered in two sessions in October 2016.

Nine faculty from different academic disciplines participated and eight completed the workshop evaluation. All respondents reported learning of assignment design strategies. Most frequently mentioned were: setting learning outcomes for context, content, and delivery; using rubrics; identifying audience; and giving more in-class practice time. 100% of the respondents considered the workshop useful or very useful. Participants considered the peer discussion on assignments and rubric examples as most valuable.

Sample Materials:

- [Flyer](#)
- [Workshop PowerPoint slides](#)
- Evaluation form (see page 13)

Assignment Example submitted by Dr. Sarah Post, University of Hawai'i at Manoa—Math 244

Math 244

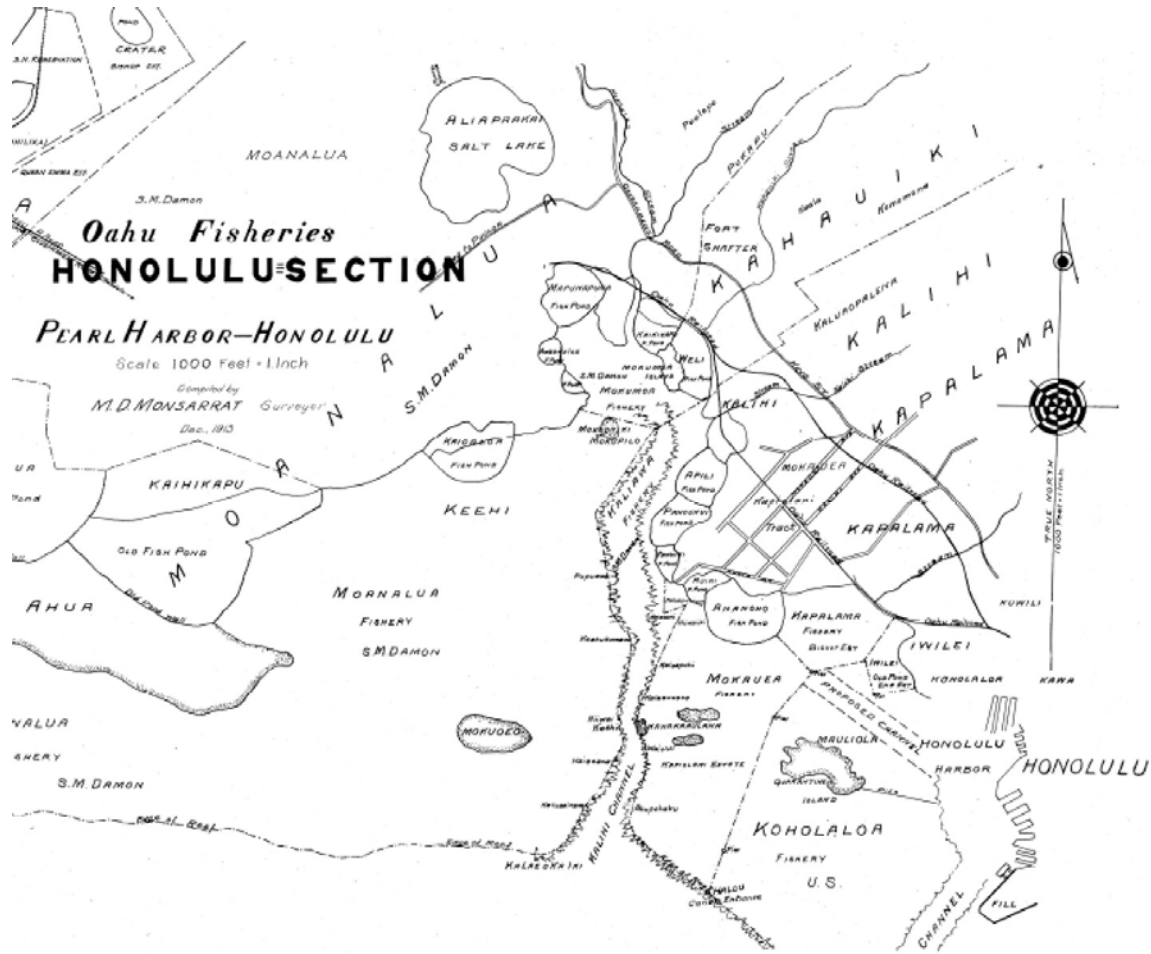
Estimating Fish Yield

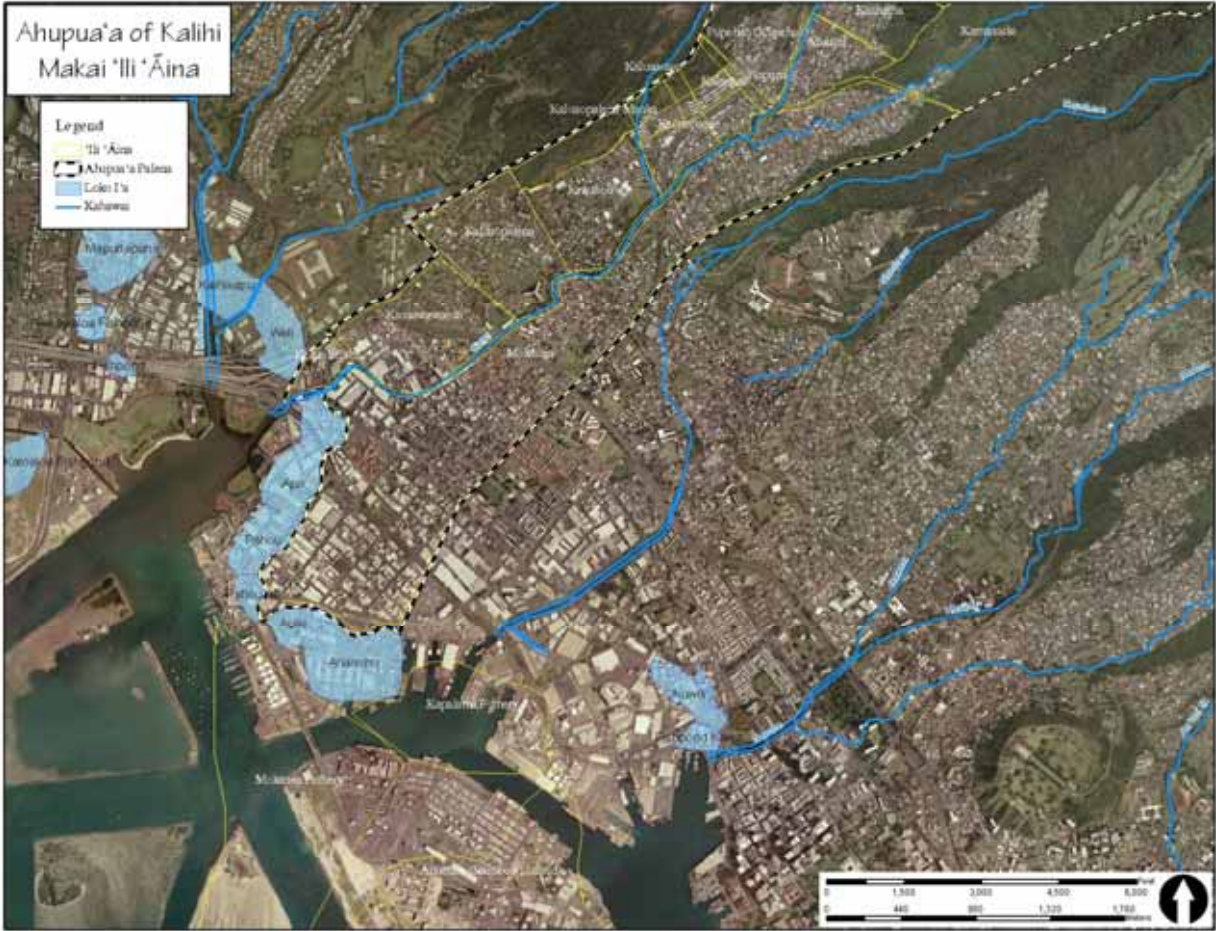
Spring 2017

Names in Group:

Attached you have a map of the loko i'a surrounding Ke'ehi Lagoon, in the ahupua'a of Moanalua, Kahauiki, Kalihi and Kapalama. Answer each of the questions below including a clear explanation of the method you used to obtain the estimates and the calculations that you made. Please turn in the sheets on Friday for discussion.

If anyone is interested in joining Sat. January 28th for a visit to Mokauea island to learn about the island and help restore the loko i'a just let me know. Much mahalo to Aunty Kehaulani Kupihea for the maps and expertise!





The following is an excerpt from “Loko I‘a: A Manual on Hawaiian Fishpond Resortation and Management” by Graydon “Buddy” Keala with James R. Hollyer and Luisa Castro, published 2007 by UHCTAHR.

Loko I‘a

Introduction

Over a thousand years ago, utilizing an advanced system of celestial navigation and double-hulled sailing canoes, people of the South Pacific journeyed far to the north to discover a chain of islands. Those early explorers, in many arrivals over many years, became settlers and created a unique, complex society with a population estimated to have been from six hundred thousand to almost a million people—an amazingly large number. It is logical to ask, “How did this large population sustain itself?”

Almost every culture in the world has practiced aquaculture in some fashion. The ancient Egyptians stocked artificial ponds with fish, the Greeks and Romans raised eels, the Taiwanese walled in tidal areas, and people in the Tuamotou, Society Islands, Australia, Cook Islands, Samoa, and New Zealand entrapped fish by various means. Despite such wide-ranging, ancient aquaculture activities, as W.K. Kikuchi stated in *Pre-historic Hawaiian Fishponds*, only a few cultures used permanent ponds for raising fish.

With the early settlers of the Hawaiian archipelago came the tangible necessities of long-term existence—medicinal and food plants, animals, tools—all carefully packaged on the canoes for the long voyage. Specialists, who taught and shared their knowledge through a system of generational apprenticeships, were among the settlers to ensure proper use of things, although it was not uncommon for one generation to develop practical improvements over the methods of previous generations.

Hawai‘i is the only known place in Oceania where the people practiced a “pure” form of fishpond aquaculture. In contrast to the rest of the Pacific, Hawaiian fishponds evolved into a unique and sophisticated aquacultural practice. Nowhere else is found either the variety of fishpond types or the quantity of fishpond remains that are found in Hawai‘i. Hawaiians attempted to utilize practically every body of water for either irrigated agriculture, mostly for their staple kalo (taro, *Colocasia esculenta*), or for fishponds.

The transition from explorers to settlers to a permanent population took place over many generations as a unique culture developed. Inherent in the culture

was a social structure of religion, rules, and discipline that provided cohesion for the entire system. All activity included ceremony and ritual, presided over by kahuna, or masters. Religious and spiritual convictions evolved from a deep and profound observation and understanding of and respect for all things natural. In addition to ordinary daily life, the entire natural environment—from the clouds in the highest atmosphere, to the currents of the deepest ocean—was acknowledged to be under the protection of the gods.

Such a large population required vast quantities of food, and the culture demanded this be accomplished in a sustainable harmony, without waste or extensive harm to the environment, which were believed to anger the gods. The production of food included cultivating kalo, which could be processed into poi, and gathering seafood from the ocean and shoreline. Some type of seafood, along with poi or kalo, was part of the staple diet.

Production plots for kalo were extensive, as evidenced by the remnants of terraced contours in many valleys, remains of sophisticated irrigation systems, and large rock-lined enclosures at stream deltas leading into the ocean. Consistent with the rock-enclosed, flooded farming of kalo was the extension of rock enclosures at the point where streams entered the sea. In this brackish-water environment, silver fish were observed to congregate, and the idea of confining them within rock walls led to systems of farming them.

The full-scale development of loko i‘a (fishponds) from mauka (the mountains) to makai (the ocean) dates back over half a millennium. Cultivation and propagation centered on many different fresh and salt-water plants and animals, with the primary species being the prized ‘ama‘ama (mullet) and ‘awa (milkfish). An inventory in the early 1900s found 360 loko i‘a in the islands and identified 99 active ponds with an estimated annual production total of about 680,000 pounds, including 486,000 pounds of ‘ama‘ama and 194,000 pounds of ‘awa. Loko i‘a were extensive operating systems that produced an average of 400–600 pounds per acre per year, a significant amount considering the minimal amount of fishpond “input” and maintenance effort apparent by that time.

1. Using the map (p.2) and the information from the attached hand-out (p.3), estimate the yearly fish production (in pounds) from the area covered by this map.
2. What percentage of total fish production is accounted for in this map? Is your answers reasonable? Surprising? Give justification.
3. According a 1903 report, Loko Auiki had already been partially filled in. Give a new estimate taking this into account.
4. In US Army maps from 1943 and 1953 (next page), some of these ponds have been filled in. Estimate the total drop in fish production stemming from the loss of these ponds.

Below are two maps from the “Final Archaeological Inventory Survey Report for the City Center (Section 4) of the Honolulu High-Capacity Transit Corridor Project,”<http://66.192.214.182/media/200474/20132608-CC-AISR-Vol-4D-Sec-1.pdf>

5. What are possible sources of error in your estimates? Specify at least 3 ways that your estimates could be improved.
6. Give 3 questions that you could either ask a kupuna, cultural practitioner or scientist or that could be a source of further investigation on fishponds and their production.

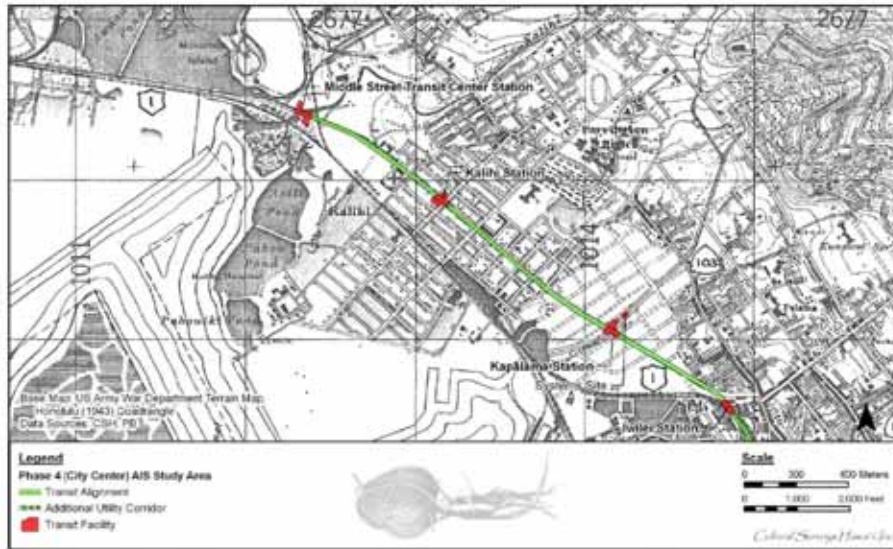


Figure 19. 1943 U.S. Army War Department Terrain map, Honolulu Quadrangle, showing the Kalili-Kapalama portion of the study corridor

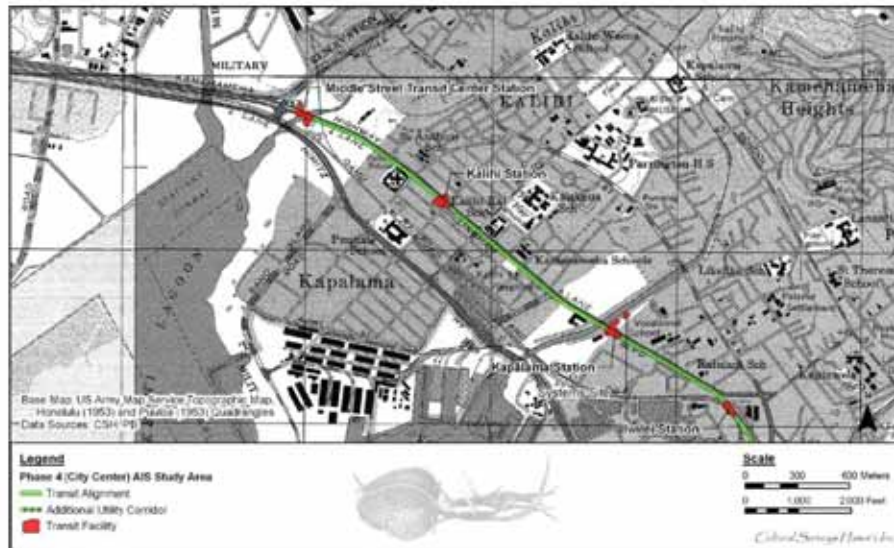


Figure 20. 1953 U.S. Army Mapping Service topographic map, Honolulu and Punloa Quadrangles, showing the Kalili-Kapalama portion of the study corridor

Evaluation & Feedback Form submitted by Dr. Yao Hill, University of Hawai'i at Manoa



Assignment Design for Powerful Learning
Workshop Evaluation & Feedback Form
03/15/2016

1. Write two assignment design strategies that you want to try out after the workshop.

2. Please rate the overall usefulness of this workshop.

- Very Useful Useful Of Little Use Not Useful At All No Opinion

3. To what extent was this workshop effective in increasing your understanding of the topic?

- Very Effective Effective Somewhat Effective Not Very Effective Not Sure

4. Rate the following aspects of the workshop

	Very helpful	Helpful	Somewhat Helpful	Not really helpful
a) Assignment refinement example given by Jinan Banna	○	○	○	○
b) Yao's presentation	○	○	○	○
c) Handouts	○	○	○	○
d) Peer sharing & feedback	○	○	○	○

5. What was the most valuable aspect of this workshop? Why?

6. What was the least valuable aspect of this workshop? Why?

7. What other assessment workshops would you like us to offer in the further?

8. Other comments:

Mahalo nui!



Assignment Design for Powerful Learning in Oral Communication Workshop
Workshop Evaluation & Feedback Form

Session Outcome Questions

1. List two strategies that you learned about assignment design in this workshop:

Overall Evaluation Questions

3. Please rate the overall usefulness of this workshop.

Very Useful Useful Of Little Use Not Useful At All No Opinion

4. To what extent was this workshop effective in increasing your understanding of the topic?

Very Effective Effective Somewhat Effective Not Very Effective Not Sure

5. What was the most valuable aspect of this workshop? Why?

6. What was the least valuable aspect of this workshop? Why?

7. Other constructive comments?

Mahalo nui!