Week 5 Workshop

COS10025 – Technology in an Indigenous context project

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Acknowledgement of Country

We respectfully acknowledge the Wurundjeri People of the Kulin Nation, who are the Traditional Owners of the land on which Swinburne's Australian campuses are located in Melbourne's east and outer-east, and pay our respect to their Elders past, present and emerging.

We are honoured to recognise our connection to Wurundjeri Country, history, culture, and spirituality through these locations, and strive to ensure that we operate in a manner that respects and honours the Elders and Ancestors of these lands.

We also respectfully acknowledge Swinburne's Aboriginal and Torres Strait Islander staff, students, alumni, partners and visitors.

We also acknowledge and respect the Traditional Owners of lands across Australia, their Elders, Ancestors, cultures, and heritage, and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

Workshop 5

The aim of today's class is to focus on evaluating research findings performed in week 3 & 4, the team decides and selects the most appropriate concept/research ideas to be used in order to develop 4-5 design ideas.

Activity 1: Define your individual learning issue

Activity 2: Developing a design idea for an individual learning issue

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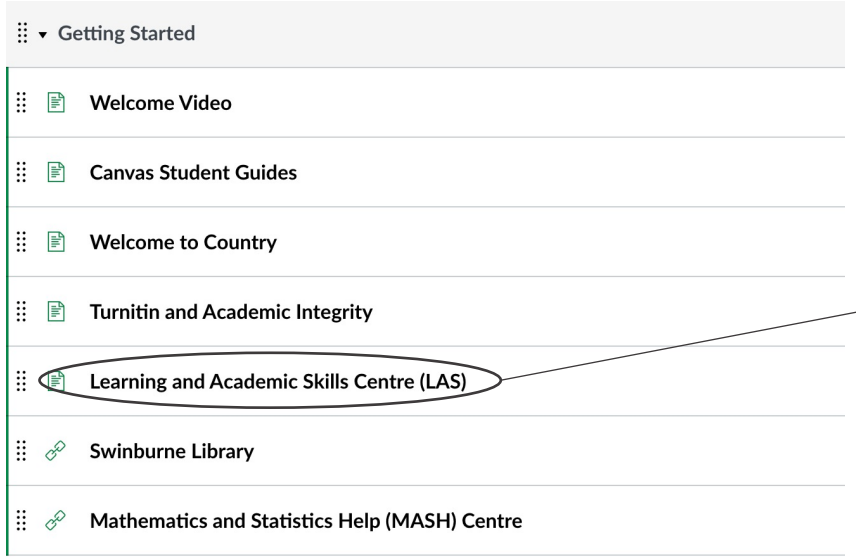
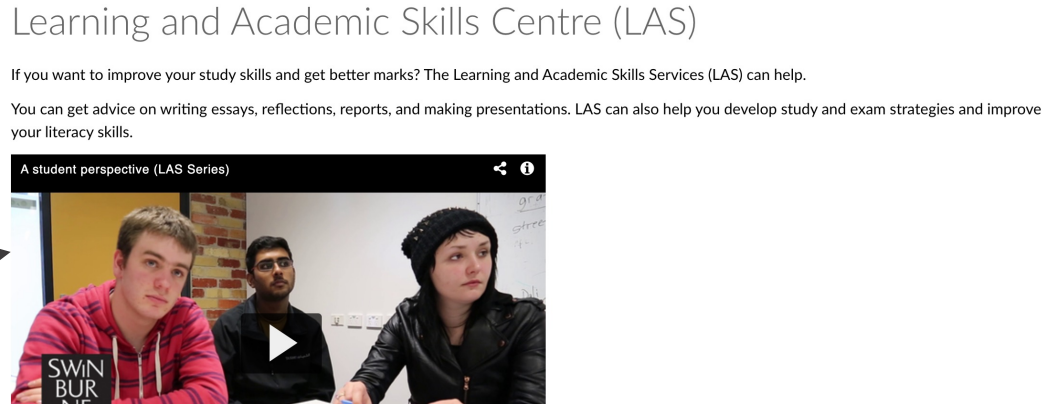
Learning and Academic Skills Centre (LAS)

LAS Drop-in Advice – Higher Education Sem 1 2022, Week 1 – Week 15; no need to book.
On campus:
Hawthorn Monday – Thursday 11.30am - 1.30pm, **desk J2**
Online: Tuesday-Thursday 1.30pm - 5.30pm

Go to **swi.nu/ssonline** to access **Online Drop-ins**, self-enrol and click on the link under the heading **LAS Drop-in Advice**.

LAS appointments – face-to-face/Teams/phone/Zoom. Book here: swi.nu/las-booking
LAS email: las@swin.edu.au
LAS Webpage – for more information on LAS activities: **swi.nu/las**





Case Study 1 - Connecting a Community to Each Other and the World

Wingellina or Irrunytju Community is a small Indigenous community located in remote part of Western Australia.

Our client, NG Media, is an indigenous-owned media organisation empowering remote communities of Western Australia through use of multimedia.

NG Media needed a wireless network system that they can utilize to broadcast digital radio services and deliver WiFi access to Wingellina community.

The team built a system that provides connectivity to the entire community and allows them manage portal content and internet connectivity.

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Ref: easy web digital

Case Study 1 - Connecting a Community to Each Other and the World

Large coverage area – small pricetag

Backhauled with a community provided satellite system connected to the NBN, the team designed and built a mesh network covering the whole Wingellina community.

Cambium point to multipoint wireless equipment was installed on a centrally located communications tower connecting with WiFi Access Points throughout the community.

Use of Cambium equipment throughout means the entire network can be managed through a single interface and the equipment's low pricepoint made for cost effective coverage of the community.

Network Design and implementation managed service

Ref: easy web digital

Delivering Local Content

NG Media was looking for a multifunctional platform to deliver and manage internet access to Wingellina community as well as broadcast local digital content straight to a user's device. The team integrated NG Media's broadcasting equipment with Encapto's management platform to manage connectivity and enable community access to NG's programmes, all from a single location.

Enabling Community Control

NG Media is able to control its internet usage by setting time and download limits, as well as filter content to ensure appropriate use. Encapto WiFi's OpenDNS-based content filtering blocks key content categories and sites and redirects users away from inappropriate material.

Relevant Dynamic Portal Content

NG Media's captive portal displays NG Media branding and important information for users in the community such as links to internet banking, weather forecasts and councils sites. The splash page is fully mobile responsive to cater for the range of devices used throughout the community. The intuitive portal builder enables authorised NG Media staff to update content at any time with minimal technical knowledge.

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Rapid Installation

Before any installation takes place, project management HQ plans and coordinates access requirements including site induction and permits to enable quick network deployment. This careful planning and preparation facilitated rapid installation at 9 different buildings in under a week.

Reporting and Analytics

The WiFi Control Panel enables NG Media to access network monitoring data and to present it in graph and table format. Upload, download, device type and location are just a few of the key data that are accessible via the Control Panel's user-friendly interface.

Case Study 2 - WiFi Connectivity at iconic Uluru

Uluru-Kata Tjuta National Park is internationally recognised as a World Heritage Area, attracting more than 250,000 visitors each year to Australia's iconic red rock.

Situated in a remote area where cellular coverage is both limited and costly, Satellite WiFi system keeps visitors connected and engaged.

The Encapto WiFi management platform provides management control over messaging and network usage while robust Ruckus hardware weathers the sometimes extreme natural elements. The system was deployed rapidly and is fully managed by the team support engineers for a seamless WiFi experience at an affordable price point.

Network Design and implementation managed service

Ref: easy web digital

Satellite Connectivity

To overcome connectivity issues in this remote location, Orion satellite service and a 3G backup provide an unlimited internet connection to the Uluru WiFi system. Satellite dishes were shipped to Alice Springs where the team configured WiFi equipment for the journey to site.

Engineers mounted the equipment, carrying out alignment and fine-tuning to ensure maximum throughput. The equipment connects to discreetly located custom housings built to withstand the elements and minimise environmental impact.

The Encapto WiFi management system ensures fair usage for each connected user.

Branded Login Portal

Uluru's splash page shows handy visitor information, is easily configured by the parks' staff and can be updated at any time. This multipage portal also acts as the first point of contact when visitors login to the network and its user friendly interface ensures ease of use and maximum exposure for Uluru's branding, images and messaging.

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Seamless Network Deployment

One of the main concerns expressed was how the installation process would affect the aesthetics of the area and the possibility of causing any damage onsite. Installation had to be carefully timed so as to not obstruct access for members of the public and to be executed following park rules and guidelines. Installation was managed from project management HQ.

Access requirements, such as night work, site induction and permits were co-ordinated in advance to enable the quick deployment of Access Points and controllers onsite. Deployment of the network took less than 4 days.

Comprehensive Reporting

The Encapto control panel enables Uluru National Park to monitor network performance from anywhere. Encapto reporting recorded more than 1,500 users in the first two months of operation and usage has continued to grow since. Statistics on the control panel show valuable insights such as download and uploads, device types, total number of sessions and session times.

Activity 1

Define your individual learning issue

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Digital Connectivity Infrastructure for Remote Indigenous Communications

- Analyse current challenges and needs of communication technologies and services for remote Indigenous communications in particular regions
  - Analysing Indigenous communities for remote communication coverage against the population of communities (major cities, regional, remote, very remote).
  - Estimating total communications infrastructure expenditure
- Explore user access, affordability, digital literacy, and Indigenous education rates in relation to the communication infrastructure
  - Analyse user access based on the Indigenous communities' need for day-to-day activities in remote areas
  - Ensure the affordability, digital literacy of typical applications used in an indigenous remote communities
- Telecommunication guiding principles - Access and equity, health and safety, environmental health, appropriateness, affordability, sustainable livelihoods

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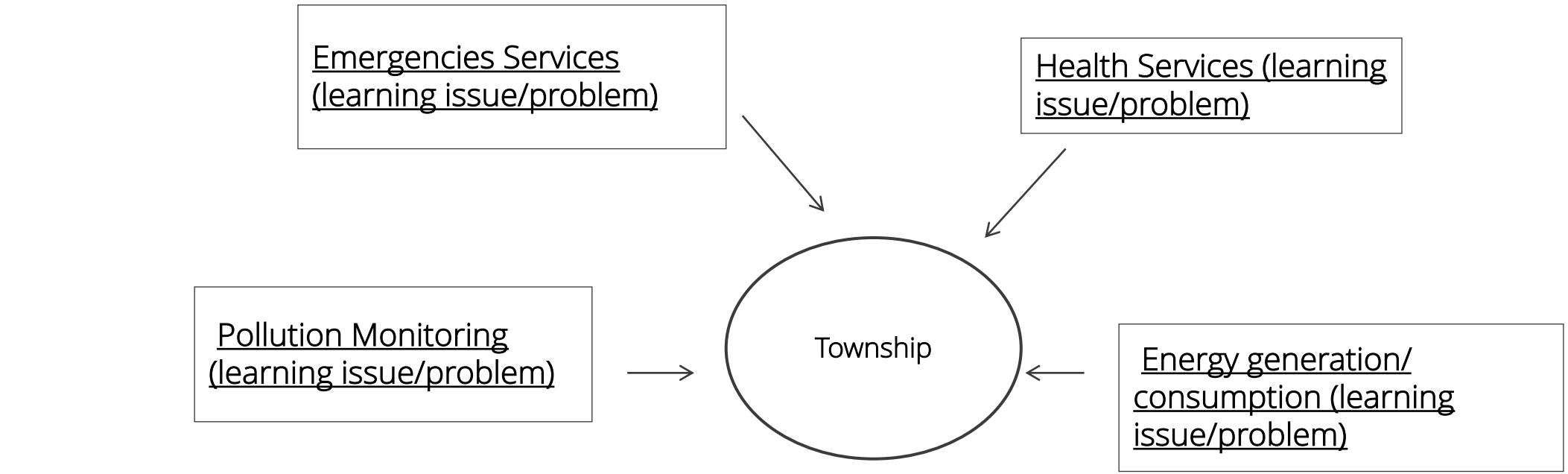
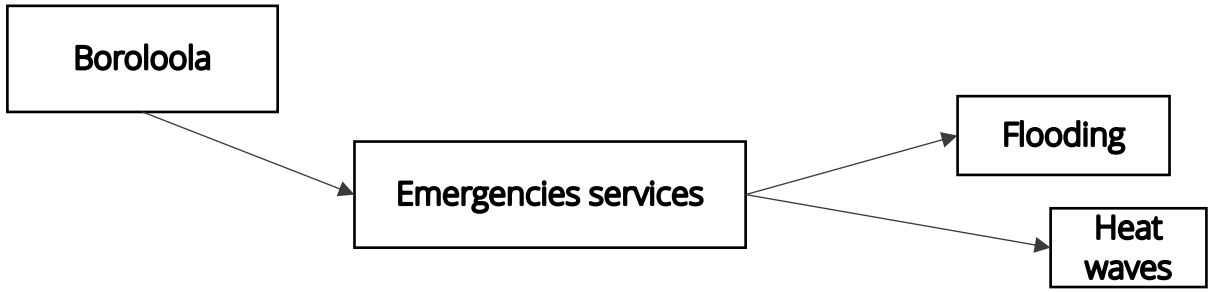
Learning issue/problem within your Township

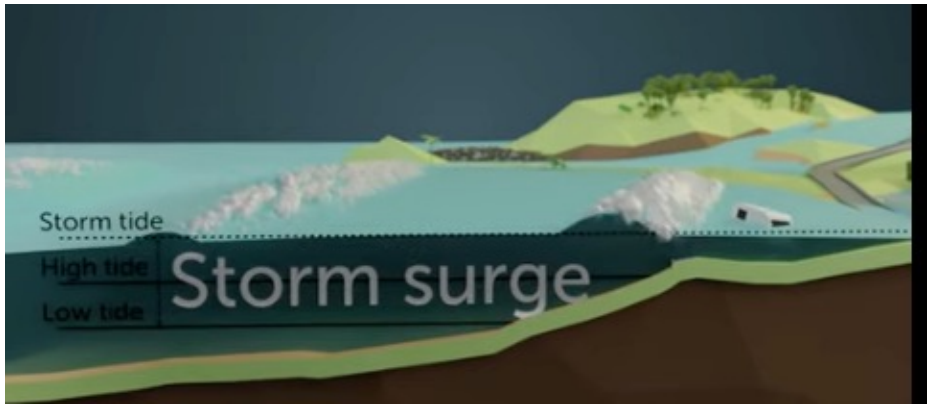


Your focus is

Digital Connectivity Infrastructure/ Communication services

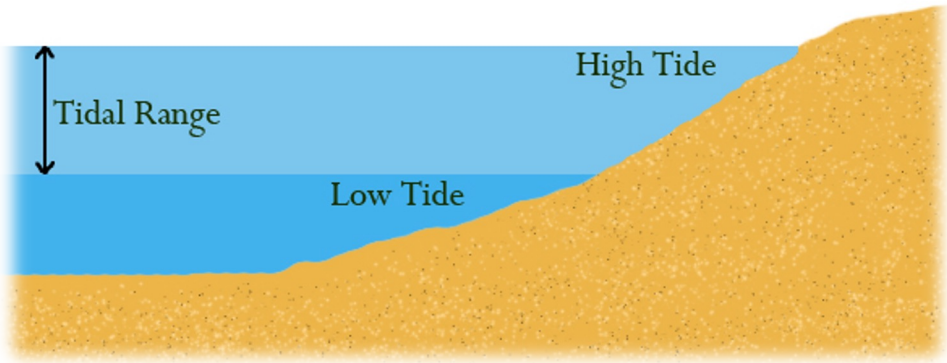
Learning issue/problem (An example)





Problem: Water level (flooding)

Riverine flooding can affect thousands of square kilometres for weeks or even months at a time



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1st Activity

Aim : Define your learning issue/problem (individual)

Instructions :

1. Analyse and discuss your learning issue/problem with the allocated Township?
2. Explore the relevant issue, challenge or need that relates to your learning issue (found in your township research)?
3. Define the problem clearly?
4. As a team - Summarise your individual problem to other team members?

Teamwork: **10-20 minutes**

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Activity 2

Developing a design idea for an individual learning issue

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Develop a design idea

Problem: Water level (flooding)

Riverine flooding can affect thousands of square kilometres for weeks or even months at a time

Design Idea

Digital Connectivity Infrastructure/ Communication services

When you think of a design idea/solution you have to consider

- User Access and equity
- Affordability
- Appropriateness
- Environmental health
- Sustainable livelihoods

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2nd Activity

Aim : Develop a design idea for an individual learning issue

Instructions :

1. Revisit case studies above
2. Try to develop your design ideas based on the problem.
3. Consider the telecommunications guidelines when you develop a design idea
4. Lastly, consider the cultural appropriateness of your design idea

Teamwork: 20-25 minutes

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Next week

- Continue working on design ideas (design concepts) and get feedback from your facilitator
- Explore on Assessment 2 Innovation concept