The Open Networking Lab: an open online course for experiential learning of computer networking

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oro.open.ac.uk
Open Networking Lab!

Karen Kear
Andrew Smith
@OpenNetLab
Background
The Basics of Networking

Who are we?

We work in the School of Computing and Communication at the Open University.
The Basics of Networking

Why do we need a zero to hero course?

- Solving the challenge of taking students through the first ‘threshold’ concepts of Network Engineering
- By creating a open BOC
The Basics of Networking

Funded by UFI

Their passion for creating scalable tools with impact, longevity and reach.
The Basics of Networking

Netacad?

- Based on our community leadership role … supporting 115 affiliated educational organisations?
- Ongoing support from Cisco
- Opportunity to reach wider national Post 16 education community
- Supported by a global ‘vendor’ CSR programme designed to help ‘computing’ and ‘networking’ engagement.
The Basics of Networking

Using an integrated network simulator.

1. HTML5 integration of Cisco Packet Tracer desktop based network simulator.
2. Devices include
   Router, Switch, Server, PC, Wireless
3. All configurable
The Basics of Networking

Offering a free BOC.

- Offering minor award
- Open to anyone anywhere
- Hosting on OpenLearn
Structure
Home Networking

Introducing concepts and practices in a form most students will have some ‘familiarity’.
Dipping an intellectual and experiential toe into the wider field of networking.
Structure

The simulator ...

![Diagram of network structure](image-url)
Structure

The simulator, continued ...

- Experiential learning, practice based
- HTML5 - Web browser integration
- A simplified version of the Cisco Packet Tracer network simulator.
Experiential learning?

Kolb’esque!

Learn it!
Discover it!
Do it!
Get tested on it!
REPEAT
Phase 1 - Testing
Phase 1 - Testing

FE Colleges

1. During Spring 18, in-class testing with age 16+ & 18+ students
2. Reached 180+ during Phase 1
3. In class sessions based around college timetables
Phase 1 - Testing

Teaching practitioners

- Also engaged with OU Cisco teachers community.
- Having a practitioners perspective and mass testing group.
- Mass testing two weeks during August 18
- Over 500 signed up around 200 engaged (115 gave feedback)
Data
Data

Ok, not that Data!

- 150 survey responses from students
- We also tested this later in the year when ‘some’ networking was already delivered
- BTEC, Cambridge Tech, AQA, Apprenticeship students
- We can see that engagement equates to understanding
Perceived interest and value of the ONL content

'ONL was interesting to me' by previous experience

Number of responses

<table>
<thead>
<tr>
<th>Previous experience of networking</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tbody>
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<td>nothing</td>
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Data
Perceived change in knowledge acquisition based on study commitment

'I know more about home networking now I have done the ONL classes' by previous experience

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“Quotations” selected by ...

- "I liked the open University video as they went through a lot of things in depth"
- "I understood what was being taught to me and it was a fresh way of learning"
- "I found it very welcoming for someone of my experience" (<4 hrs previous study of networking)
- "The included Packet Tracer activities were really useful"
- "I prefer the combination of short videos and more practical activities in this session."
Whats Next?
Whats Next

And finally

- Creating a series of short simulated challenges
- Adding future content
- Continue testing and development
- Deploy to Open Learn
- Deploy to the Cisco Netacad global community - allowing other Cisco Academies to use content

This is the last slide!