Helping engineering students develop employment-oriented online presences

A pedagogical application of Conscious-Competence model

Dr. Yang Yang and Dr. Michael Okereke
University of Greenwich
1. How to teach *something implicit* explicitly to engineering students?

- **Explicit technical** (doing)
- **Explicit meaning** (interpreting)
- **Implicit meaning** (living)

How to use LinkedIn  Know What is my DI  Know when, how and why

2. How to assess an innovative form of teaching and learning?
A journey of an Action Research: Cycle 1

How to improve online presence and promote critical reflection?

What is my question?

PLAN

REFLECT

ACT

OBSERVE

Action Research Cycle (Carr & Kemmis, 1986)
The Problem
How can they make the transition from ‘unemployed student’ to a hired employee in their dream job at graduation?
**Key Question:**
How can we help students **assemble** all these information into a **central ‘living’ platform** where **prospective employers** can access them **anytime**?

**Answer:**
Create an **Online Presence** which becomes the student’s **Digital Identity**?
What is Digital Identity or Online Presence?

A digital identity is a **digital media branding tool for an individual**, group or organization.

Di can take different forms ranging from:
- personal web pages, social media platforms,
- videos, images, project reports or
- a combination of these different forms.

**Purpose:** Curated for the sole purpose of self-branding and creating interests in ones work.

**Source:** This is Me Digital Identity page ([http://blogs.reading.ac.uk/this-is-me/](http://blogs.reading.ac.uk/this-is-me/))
Online Presence versus Getting hired

80% of recruiters have been influenced by the candidates professional social network profile

92% of recruiters use social media in the hiring process

78% of recruiters have been negatively influenced by the candidates negative use of social media

89% of recruiters have made a hire through LinkedIn, 26% through Facebook and 15% through Twitter

30 million students and recent graduates are now on LinkedIn: it is the fastest growing demographics

Source: Lisa Harris, Digital Identity and Employability (http://www.slideshare.net/lisaharris/digital-identity-and-employability)
How can I help my students to create Employment-Oriented Online Presences?

Embed this requirement in the curriculum by using different assessment points.
How to improve online presence and promote critical reflection?

Apply a conscious competence model (Howell, 1982)

A journey of a Pedagogical Action Research: Cycle 1

Action Research Cycle (Carr & Kemmis, 1986)
Conscious Competence model (Howell, 1982)

1. Unconscious Competence
   Pedagogical activity- Introducing students to the concepts of online professional identity and general digital identities.

2. Conscious Competence
   Pedagogical activity- Students used different search engines to find out their online presences and discuss how to shape it and construct an employment-oriented online presence.

3. Conscious Competence
   Pedagogical activities- Build profiles and networks on LinkedIn
   Transform academic writing into writing for an online network of professionals

4. Unconscious Competence
   Continuous development of LinkedIn Profiles and embedding this practices into their post-graduation lifestyle.
Creating Employability-oriented Online Presence

- Know your Current Digital Identity (DI)
- Take Ownership of Digital Identity
- Enhance Employability content of DI
- Create Generic DI using Social Media
- Create Specialized DI
- Integrate University life with DI

Concerning Online Presence

- Active participative in Online Groups
- Write Blogs
- Recommendations
- Presentations
- Publications

LinkedIn Profile
- Professional Blog
- Your Website
- Twitter
- Facebook

Happy professional digital identity
Formative Assessment Options

Formative Assessment 1
Use search engines like Google, Bing, Baidu, Yahoo, etc to search about yourself.
Document the positive and negative contents that is freely available about you.
Write a one-page essay reflecting on what you have learned from your research.

Formative Assessment 2
Using at least 5 social media platforms, create professional (employability-oriented) digital identity of yourself:
Create a 5-slide PowerPoint presentation showing snapshots of these social media pages.
Do another search about yourself and show the results on page 5 of the PowerPoint.
How to improve online presence and promote critical reflection?

- Make the concept of ‘digital identity’ explicit
- Equip students with vocabularies to discuss their subject-specific employability skills
- Engage students with reflective writing to evaluate their online presences
- Students didn’t know how to join the online dialogues.
  - Psychological barriers
  - Cultural barriers
- Students didn’t make meaning of their experience in relation to the employability skills.
- Video recording the student discussions
- Students’ writings on their self-perceived online presences

Action Research Cycle (Carr & Kemmis, 1986)

Apply a conscious competence model (Howell, 1982)

What is my question?
A journey of a Pedagogical Action Research: Cycle 2

How to reconstruct students' comfort zone to participate online professional communities?

Apply a conscious competence model (Howell, 1982)

Action Research Cycle (Carr & Kemmis, 1986)
Now integrate employability enhancing outputs into ‘central digital platform for prospective employers.’
Class Discussion: Matching skills to existing jobs

Identity the skills required for these jobs?

How will you show evidence of these skills on your Digital Identity?

1. Mechanical Design Engineer - Automotive / Motorsport
2. FEA Engineer / Stress Engineer / Structures Engineer
3. Project Manager / Project Planner / Project Scheduler (Mid / Senior)
4. Mechanical Engineer (Cambridgeshire)
An Example

**Project Topic:** Effective Helmet Designs: Numerical Considerations

**Post Title:** Harnessing computational power in design of crash helmets

**Post content:**

The main function of a helmet is to provide protection against direct impact with the ground following a crash. For combat helmets, protection is against shrapnel or ballistic threats. The impact resistance of a helmet material is a measure of its ability to withstand the impact loads applied to it. The material used in the manufacture of crash helmets must be such that it can withstand the impact event whether they are crash at low, medium or high velocity or impact from shrapnel.

Helmets these days are no more designed for those traditional purposes above but can become a fashion statement. F1 driver – Sabastien Vettel – is a major proponent of this and you see this in the many designs of helmets that he wears regularly. The video below highlights this fact beautifully.

[video 1 goes here]

Typical helmets are made of a hybrid composite material, most of which can be sandwich core materials with a foam central structure. Understanding of the mechanical response of helmets at impact loading conditions is crucial to their design and achieving the expected protection of the wearers. Experimental and analytical approaches have been used to investigate the behaviour of helmets. However, advances in computational powers and mathematics have led to use of computational methods in the design of crash and combat helmets. This study is built around this area i.e. using computational methods to design next generation helmets.

[video 2 goes here]
LinkedIn Activity: **Post Project Poster Online**

- Include this poster in your LinkedIn Profile probably best as a Post

- It may help if you convert the file into an image
How to reconstruct students’ comfort zone to participate online professional communities?

- Address to students what we know about their concerns
- Present Levels of participation model and digital sociability of different online platforms
- Create LinkedIn account
- Discuss about typical job descriptions and how to shape their LinkedIn profiles for it.
- Convert their academic essays to plain language for web audience

Apply a conscious competence model (Howell, 1982)

- Video recording the student discussions
- Students’ LinkedIn profiles
- Short feedback survey

Action Research Cycle (Carr & Kemmis, 1986)

- Students’ opinions on assessments
- Can this form of teaching be replicated online? If so, how?

What is my question?
Beyond Linkedin and employment-oriented online presences, our feedbacks from students reveal that:

1. Their self-perceived online presences are improved.
2. Awareness of sociability within digital media is improved.
3. Confidence in joining dialogues in professional networks is improved.

**YET** Can this form of teaching be replicated online? If so, how?
How to assess a new form of learning?

1. How to assess what students are not expected to learn?

2. How to assess something implicit? Was it essential?

3. What is the relationship between the academic formal assessment and real-world/authentic informal assessment?
Try your own action research with EDU?

Email: y.yang@gre.ac.uk

For further info about the Digital Identity Coursework

Email: m.i.okereke@gre.ac.uk