

How enterprise can be  
introduced with ease into the  
computing curriculum  
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# Introduction

- What is employability?
- How can we embed employability?
- Is enterprise solution?
- What are Stakeholders reflections?
- What are Short and Long term benefits for courses?

## Task: What do employers want?

- 9 mins
- Split into groups with 3 or 4 members
- Look at and discuss the (employability) key skill cards
- As group identify and agree the top ten key skills
- As group organise these top ten key skills into list 1 to 10.

**Answer:**

# Top Ten –UK

Source:: Targetjobs, The top 10 skills that'll get you a job when you graduate, [http://targetjobs.co.uk/work-experience/articleview-1a\\_388.aspx](http://targetjobs.co.uk/work-experience/articleview-1a_388.aspx) , 2009

- **Commercial Awareness** (or business acumen) - Knowing the commercial imperatives that make companies tick
- **Communication** - Including presentations and written and verbal communication skills
- **Teamwork** - Proving you're a team player but with the ability to manage others
- **Negotiation and Persuasion** - Being able to 'get your way' but also understanding where the other person is coming from
- **Problem Solving** - Including analysis and logical thinking
- **Leadership** - Motivating a team and assigning tasks and deadlines
- **Organisation** - Prioritising your workload and time
- **Ability to meet deadlines** - Proving your efficiency and time management skills
- **Ability to work under pressure** - Keeping calm in a crisis and not becoming too overwhelmed or stressed
- **Confidence** - In yourself, your colleagues and the company

# Top Ten –USA

Source: National Association of Colleges and Employers: Job Outlook 2005-Student Version,  
<http://bapp.cba.ksu.edu/skills.html>

1. Communication Skills (Verbal and Written)
2. Honesty / Integrity
3. Interpersonal Skills (relate well to others)
4. Strong Work Ethic
5. Teamwork Skills (work well with others)
6. Analytical Skills
7. Motivation / Initiative
8. Flexibility / Adaptability
9. Computer Skills
10. Detail Oriented

# PBL Module

5 mins

## In your groups match Employers Top Ten Skills to the Module Learning Outcomes

- analyse an outline problem brief and determine a specification and programme of work for a project
- negotiate to determine; scope, required support and implementation details for project work
- apply appropriate theoretical, technical, organisational, group and personal skills for practical problem solving
- use written and communication skills to describe, analyse and manage small scale projects
- plan and undertake appropriate technical project work, taking into account and be aware of moral, legal, social, ethical and professional issues relevant to their course of study.
- demonstrate personal, group and project management skills by setting goals and action plans to develop, monitor and review progress.
- reflect on the key skills specifically identified with this module and apply to future employability.
- evaluate your academic, group, personal and professional development in relation to the placement process via the mechanism of PDP.

**Answer:**



# Answer

- analyse an outline problem brief and determine a specification and programme of work for a project –**Organisation & Analytical Skills, Detail Oriented**
- negotiate to determine; scope, required support and implementation details for project work –**Negotiation and Persuasion, Detail Oriented, Ability to meet deadlines & Strong Work Ethic**
- apply appropriate theoretical, technical, organisational, group and personal skills for practical problem solving - **Problem Solving, Ability to work under pressure, Flexibility / Adaptability & Interpersonal Skills**
- use written and communication skills to describe, analyse and manage small scale projects - **Communication**
- plan and undertake appropriate technical project work, taking into account and be aware of moral, legal, social, ethical and professional issues relevant to their course of study. **Organisation & Honesty / Integrity**
- demonstrate personal, group and project management skills by setting goals and action plans **to develop, monitor and review progress. Teamwork, Motivation / Initiative, Flexibility / Adaptability & Organisation**
- reflect on the key skills specifically identified with this module and apply to future employability. - **Computer Skills, Confidence & Commercial Awareness**
- evaluate your academic, group, personal and professional development in relation to the placement process via the mechanism of PDP. **Confidence & Commercial Awareness**

# Why embed enterprise in Computing Course?

- Schelfhout et al(2002) allows knowledge into practice and meaning into to their learning.
- Develop and apply key and technical skills in Practice
- Increase Employability and Commercial Awareness
- Experience of psychometric analysis understand appointment of right person Wolf (2002).
- *“..people who have been involved with self-employment in the past are more likely to enter self-employment in the future.”* Robinson et al (2006)

# Implementation

- Belbin through drama formulate groups 6 to 8 members
- Legal documents
- Long and thin delivery over academic year
- Lecture/workshops semester 1 and tutorial semester 2
- Lecture/workshops are student driven/identified
- Tutorial group business meeting with academic
- Assessment
  - Group
  - Individual
- Supported by Blackboard
- Inform students emotional journey of the module

# Risk Minimised

- No over draft/Partnership with HSBC
- University insures the businesses
- Commercial or Social Enterprise
- Micro-business failure not necessarily failure of module
- Group Partnership Agreement
  - Unite, protect group and individual
  - Valid at the end of module
- Module Rules and Engagement Agreement
  - Unite, protect group and individual
  - University honour monies
  - Protect University

# Assessment for Learning

PEEU PBL 20%

Group Assessment 60%

- 10%: Business plan and pitch to local CEOs and Millionaires week 16
- 10%: Progress pitch to module tutors and peers week 28
- 40%: Final Submission group assessment, week 41
  - Company documentation, accounts, web site, marketing materials, policies, etc.
  - Company annual report
  - Standalone Group Presentation played to module tutors and peers
  - Group time sheets/minutes

Individual mark derived from group grade and self/peer assessment:-

$$\text{Ind} = \text{Grp} * (1 - ((\text{AveGrpPeer} - \text{IndAvePeer}) / \text{MaxPeer}))$$

Individual Assessment 20%

- Reflective Professional Personal Development (PPD) , skills analysis and Individual Weekly Activities Sheets
- Professional conduct

Sacked Members 80%

- Hard and Onerous Individual Assessment

# Placement Provider

*“We regularly reject otherwise bright candidates, because they do not have the business savvy to succeed in a role with us. Understanding how business works is a key skill, and heads-down nerds with little interest in the business aren't really welcome here.”*

# Dragons Feedback

*"I was really impressed with the students, and really hope that they do well in their projects. This experience will be invaluable to them in the future."*

# External Examiner Feedback

*"I would like to highlight how much I enjoyed reading the material of the Project Based Learning Module.*

*The tutors obviously spend a lot of time in preparing and delivering the material..."*



# Student Reflections

Survey 81% mean response rate, 1st year operation

<b>Question</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neither Disagree or Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>I have enjoyed the Project Based Learning Module?</b>	10	26	10	11	0
<b>I have enjoyed creating enterprise business in the module?</b>	9	28	13	7	0
<b>I have developed a commercial awareness?</b>	10	32	11	1	1
<b>I have developed my employability skills?</b>	11	26	13	4	0

# Student Feedback

"Get organised, list deadlines, work for them early"

"Enjoyed this module, put a good spin on group-work allowing for the development of a number of skills."

"Thank you Anne for your readiness to advice and direct"

"Don't make a group with your friends, keep making progress over Christmas and January."

"... IT courses can be so involved with IT work, it's a good chance to do something different that actually helps with finding a job"

"Overall, an excellent module, and one of the most important cross-course modules... even more important to those aiming for a placement."

"An interesting module, with good support"

"Great to have audio feedback, really helps!"

"Academic weekly meeting with groups for 15 minutes in class, discuss their business progress, record it using an audio recorder"

"If someone's not doing work, pull them up on it, don't sit on the problem."

"Make sure you run this again next year. A real benefit to all participants and the effort and time you have invested into this module really shows."

"My work at the moment has a lot of problem solving ... this module has helped me"

"I would say this is the one module that can make you future and give you more confidence plus employability skills."

"If you have problems or feel the workload is too much... speak to your tutor ...Remember that this if for a module for university...There's probably more to be learnt ...being involved in a failed business than a successful one!"

"Looks good on CV....A break from nerdy subjects"

"The assessment is very challenging"

# Opportunity

- Learning real world in fail safe environment
- Business failure? Doesn't mean module failure
- Develop your commercial awareness, small-scale amplifies the effects, i.e. professional development
- Apply professional, technical and key skills
- Experience to draw upon for employability
- Last Year approx' +80% PBL students gained a Placement
- DHLE Computing Students 73% Graduates in Employment






# Student Feedback for Next Year's Students

*“I believe that the PBL module is worthwhile, it will improve your commercial awareness which you will need when you work in business.*

*There is a downside of having to work hard but grab the opportunity with both hands and you can make a lot of money.*

*Don't lose the faith halfway through the year see it through to the end.”*

# Conclusion

	 <b>Students</b>	 <b>University</b>	 <b>Academics</b>	 <b>HSBC</b>	 <b>Employers</b>
<b>Benefits</b>	Key Skills Learning to application Business Knowledge Professional skills professionally applied Confidence Networking Make money	More employable graduates More exciting course Student motivation and engagement Publicity Future employers of SHU students Reputation	Novel approach Effective method of learning application Student motivation Student partnership	Work Closer with SHU Engage local community HSBC Staff Development Valuable customers now and future	Key Skills Development Business Knowledge Bigger picture of business Learnt/Respect of roles and colleagues Employee confidence
<b>Risks</b>	Distraction Time consuming Increase debt Lack business accrument Workload Poor group formulation Health and safety	Bad reputation Damage to customers/property Student retention Health and safety	Student disengagement Student retention Extra support Time-consuming Group fragmentation	Fraud Money laundry Student debt	Employer not employee Own business along-sided employed
<b>Resolution</b>	Micro business Regular tutorial Large groups share workload No overdraft Business, Legal, Tax, H&S lectures partnership Agreement Groups formed by psychometric testing	Rigorous Pre-course Planning H&S Training Legal Module Agreement Micro business Large groups share workload Minimum investment Money & phone to be returned University insures businesses	Rigorous Pre-course planning Group-work and Individual Assessment Legal Module Agreement Groups formed by psychometric testing	Rigorous Pre-course Planning No overdraft Minimum investment Module Agreement Partnership Agreement Student identification and verification	Micro-businesses Taste hard-work of business

# References

- Robinson, C., O'Leary, B., & Rincon, A. (2006). Business start-ups, closures and economic churn. A review of the literature. Enterprise Directorate, BERR, UK.
- Schelfhout, W., Dochy, F., Janssens, S. and Struyven, K. "The use of self-, peer and teacher assessment as feedback system in a learning environment aimed at fostering skills of co-operation, organizing and putting entrepreneurial knowledge into practice." Learning Communities and Assessment Cultures Conference organised by the EARLI Special Interest Group on Assessment and Evaluation, University of Northumbria, 28-30 August 2002
- Wolf, A., (2002) "The growth of psychometric testing" British Educational Research Association Annual, UK