



# PEER ASSESSED PROBLEM BASED CASE STUDIES

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# BACKGROUND

## Students

- Undergraduates
- BSc Food And Agriculture

## Student learning route

- 1<sup>st</sup> year -disciplines
- 2<sup>nd</sup> year -application
- 3<sup>rd</sup> year –practicum
- Module -interdisciplinary

## Industrial Link

- Knowledge Transfer Partnership Associate

## Staff

- Academic tutors- multidiscipline
- Technical support

# Key Elements

1. Problem Solving Exercise  
Case study based on a bakery
2. Peer Assessment  
Develops the role of reflection and evaluation
3. Presentation and Peer Assessment of Solutions
4. Debrief

# Problem Solving Exercise

## PREPARATION

### Academic tutor/KTP Associate

- Identify a potential source of case study material  
Pre packed sandwiches
- Create a working brief  
Improve shelf life of bakeries own brand sandwiches
- Provide a theoretical structure  
Factors in bread quality, determination of crop quality etc

### Technical

- Problem solve in preparation to support students
- Provide resources

# Preparation for the practical task

Students put in the role of consultants to the industrial partner

KTP Associate Presentation:

- Transfer relevant knowledge  
Analysis of UK production, Company position in market place, potential customer base, consumer preferences  
Basic principles of sandwich manufacture
- Identify problem  
Discuss role of raw materials in production  
Identify issues with fillings and bread type

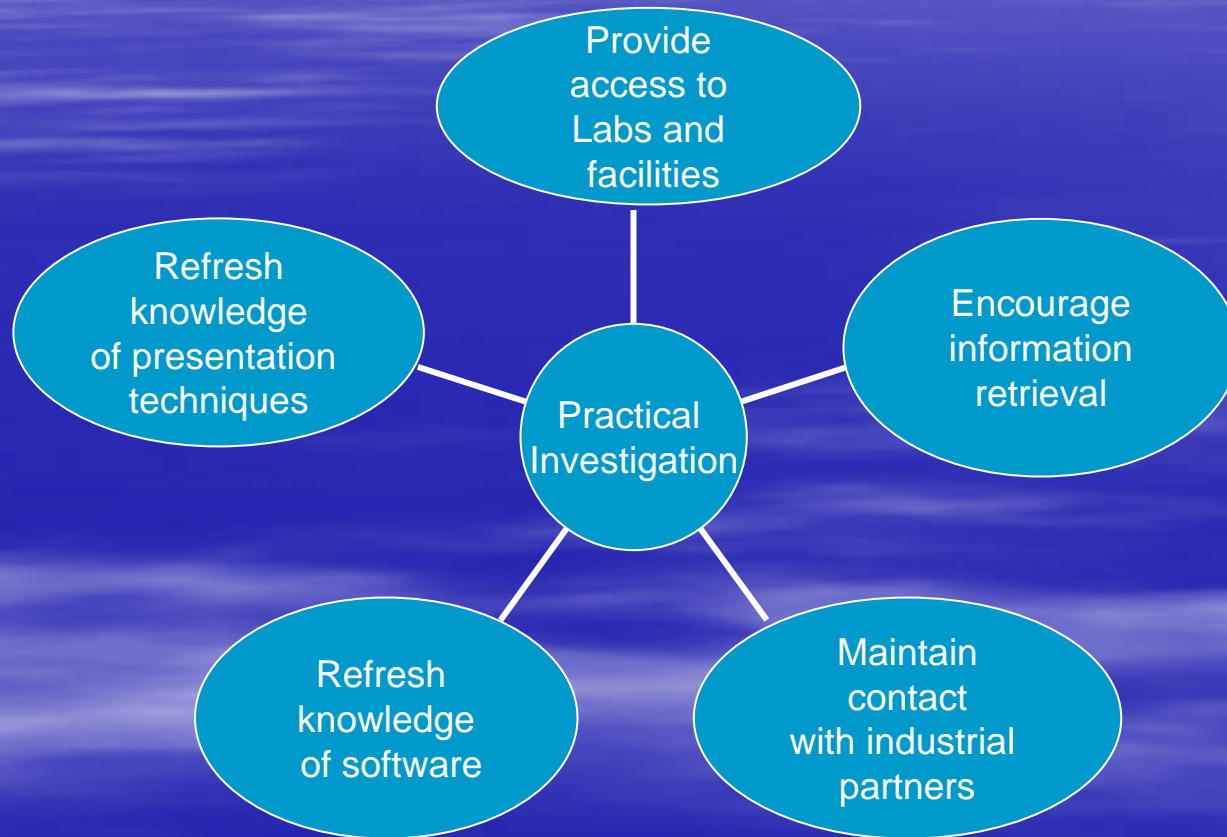
# Preparation for the Practical Task

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Academic and technical team:

- Encourage reflection on knowledge
  - Qualitative and quantitative analysis
  - Analytical knowledge of food composition
  - Chemical/instrumental analysis
- Creation of 'consultant' groups and working plans
  - Brainstorming
  - Project Plan
  - Set time scales

# Practical Investigation



# PEER ASSESSMENT TASK

- Introduction
  - Definition
  - Student/tutor understanding
  - Anonymous procedure
  - Objectivity
- Selection of general elements for presentation
  - e.g. Communication, Structure, Content
- Selection of criteria matrix for each element
  - Engagement with audience/Readability of slides
  - Introduction/Rationale, Flow of information
  - Relevance, scientific basis, fitness for purpose
- Devise Marking Strategy
  - Mark Allocation/Balance for each element
  - Marking Scale
    - Numeric
    - Linear
    - Categories



# Presentation/mini conference

## Before Presentation

- Examples of Benchmark presentations
- Rehearsal facilities
- Peer assessment process reinforced

## During presentation

- Students evaluate each group's performance

## After presentation

- Scrutiny of evaluation sheets
- Allocation of marks

# DEBRIEF

## Academic moderation

- Industrial partner

  - Respond to presentations

  - Reinforces value of solutions to industry

- Dissemination of good practice

  - Easy and difficult aspects of practical and assessment tasks

  - Supportive, constructive criticism

- Reflection on Practice

  - Encourage student thoughts on personal strengths and weaknesses in learning experience.

# RECOMMENDATIONS

## Case Study

Ensure size and scope of case study is manageable and at the right intellectual level

Provide guidelines to drive the learning process

Provide sound theoretical base

Encourage student autonomy

Encourage close links between staff, students and industrial partner

## Peer Assessment

Honesty and openness

Reassurance

Encourage ownership

# Advantages of using problem based peer assessed learning

## For the students

- Introduction to commercial consultancy
- Application of theoretical knowledge to real life problems
- Develops teamwork skills
- Encourages student centred learning
- Enhances student IT skills
- Encourages reflection on peers work
- Encourages critical evaluation of own work

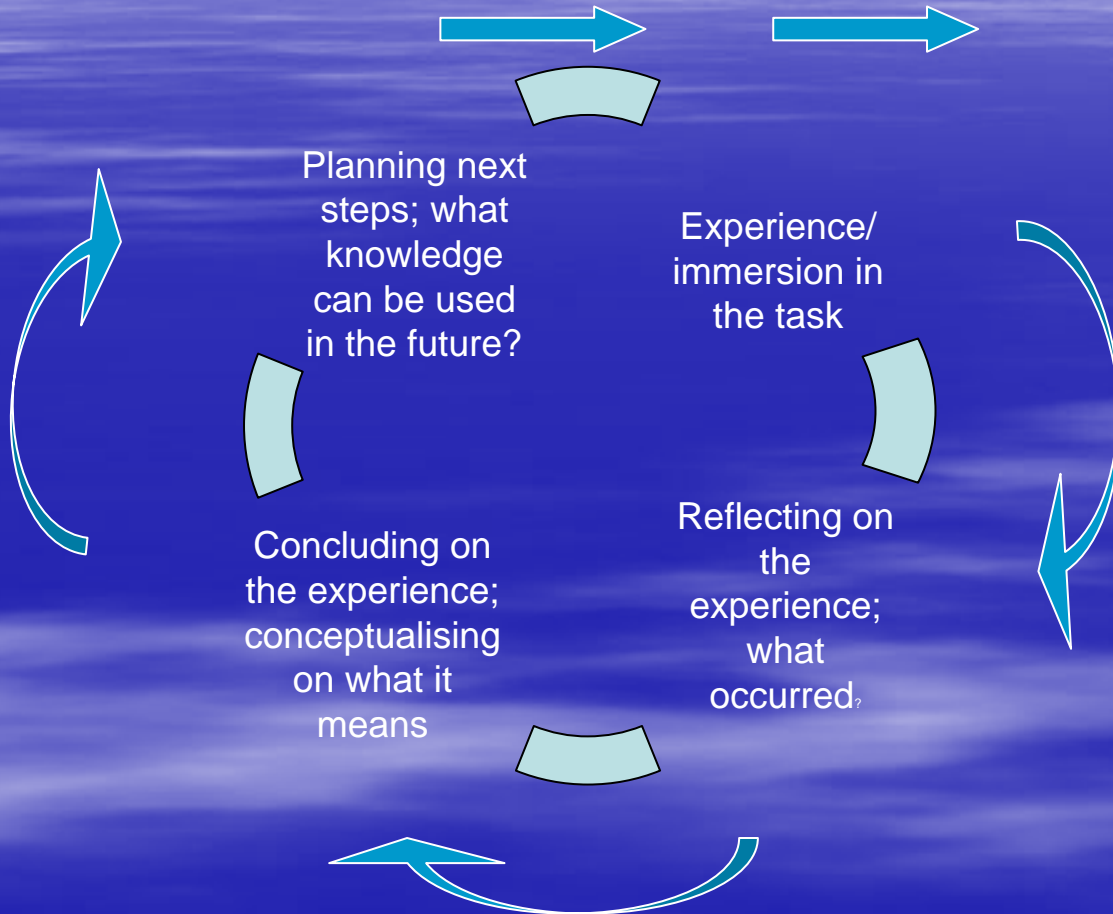
# Advantages of using problem based peer assessed learning assessment

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For staff

- Ensures relevancy of theoretical and practical teaching
- Facilitates the link between teaching and research
- Highlights potential areas for research and development
- Strengthens the links between industry and academia,  
Promotes collaboration between industry and the University
- Promotes deeper understanding of industry problems

# Kolb's Experiential Learning Cycle



# Summary

*‘ First teach them the relevant basic science, then teach them the relevant applied science, then give them a practicum in which to practice applying that science to the problems of everyday life’*

*(Donald A Schön 1987)*