

## EXPLORING AN UNDERGRADUATE PUBLIC HEALTH LEARNING ENVIRONMENT THROUGH THE TEACHING FOR UNDERSTANDING (TFU) FRAMEWORK

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### Biographical Note

Fiona qualified in medicine at Saint George's Hospital Medical School, London, and completed postgraduate training in hospital medicine and general practice in the United Kingdom. In 1995 she obtained a Master's degree in Health Services Management from the London School of Hygiene and Tropical Medicine. She has worked in developing and transitional countries including Peru, Angola and Macedonia, in her clinical capacity as well as in health service development, health promotion and research. Fiona is currently a lecturer in the Department of Epidemiology and Public Health in University College Cork (UCC), and works in General Practice in Cork City. She is director of the new undergraduate degree in Public Health and Health Promotion in UCC, involved in the programme's development as well as teaching. Her current research interests include population health and undergraduate education and learning in Public Health.



### KEYWORDS

TfU; public health; learning.

### ABSTRACT

**Background:** The BSc Public Health and Health Promotion at University College Cork (UCC) aims to produce graduates who are passionate about their discipline. Teachers need to communicate this 'passion' to students, but it can be difficult to know whether this has been achieved. The TFU framework makes such an outcome explicit, through demonstrating student understanding and identifying students' active engagement in learning.

**Aim:** To examine the learning environment of a first year undergraduate module in public health

**Method:** The TFU framework provided four dimensions for analysing module EH1005: Population Health:

1. Generative Topic
2. Understanding Goals
3. Performances of Understanding
4. Ongoing Assessment.

**Results:** The identifiable Generative Topic of EH1005 is "the wider determinants of health". Five Understanding Goals clarify what students need to understand from the module: (1) factors determining health (2) health issues in the public domain (3) poverty as a health determinant (4) major population health issues and (5) the role of health interventions. Although Ongoing Assessment was mainly 'teacher led', it comprised different formats including informal class and group discussion, as well as formal oral and written assignments. Students could therefore Perform their Understanding across different contexts. The results of the Ongoing Assessments showed that most students reached the Understanding Goals for the module.

**Conclusion:** Applying the TFU framework to articulate the Generative Topic for EH1005, as well as identifying clear Understanding Goals, provides a means of making explicit what students need to understand in order to recognise what factors determine the health of populations. The different formats for Ongoing Assessment and contexts for Performing Understanding, show that EH1005

can accommodate a range of learning styles. The TFU analysis also provides information to improve delivery of the module by identifying less emphasis on 'self' assessment as a means of deepening student understanding.

**INTRODUCTION**

The aim of this paper is to examine the learning environment of a first year undergraduate module in population health on the BSc Public Health and Health Promotion (BSc PPHP) in University College Cork (UCC), using the Teaching for Understanding Framework (TfU) (Wiske, 1999) to analyse the extent of student engagement and understanding. Public Health is by nature a dynamic discipline, seeking to address new challenges to the public's health as they emerge over time. Practitioners of public health and health promotion require an increasingly broader array of knowledge and skills, cutting across disciplinary boundaries. In recent years an increasing number of institutions internationally have implemented undergraduate programmes in public health and health promotion (Bennett et al, 2010) in what is traditionally a postgraduate pursuit, but there is a paucity of literature comparing postgraduate and undergraduate learning in the field (Fleming et al, 2009). This deficiency also probably reflects a need for research into the learning requirements for undergraduate students in dedicated public health and health promotion programmes, as distinct from such content included in the training for the various health professions.

The BSc PPHP in UCC attempts to address the needs of future public health and health promotion specialists by offering a dedicated programme for third level entry students. The programme offers students an integrated learning experience in an interdisciplinary environment, to produce graduates who are *passionate* about public health and health promotion. Teachers need to communicate such 'passion' for their discipline to students, but it can be difficult to know whether this has been achieved. *The* challenge is often not in what factual material to include in the teaching, but in how to capture the imagination of the students so that they become curious to know and understand more. The TfU framework can go some way to making such an outcome explicit by identifying students' active engagement in and passion for learning, and ultimately demonstrating their understanding.

A 'learning environment' in the context of this paper refers to all elements influencing a student's learning. These might include the physical environment of the classroom, the academic content, the methodology of teaching, the quality of interaction with peers and/or teachers, as well as formal and informal feedback. The module EH1005: Population Health (EH1005) comprises a relevant learning environment for the current research for a number of reasons. Firstly, it is one of the underpinning modules in the BSc PPHP and is a compulsory course for first year students in the programme. Secondly, it comprises a significant proportion of the total learning environment in the First Year. Finally, it is the foundation for a 'stream' of learning within the programme which focuses on understanding health issues at a population level.

**METHODOLOGY**

The TfU framework provides a useful template for analysing the design and development of a learning environment by focusing attention on four distinct elements of the teaching and learning dynamic: the Generative Topic(s), Understanding Goals, Performances of Understanding and Ongoing Assessment. The TfU framework focuses on the active engagement of students, demonstrating their increasing understanding of the course material as they are asked not only to make explicit 'what' they know, but also to apply their knowledge in different contexts – in group work or oral presentations for example. Wiske (1999) proposed

four questions which describe the nature of each element and facilitate analysis through the framework, as summarised in Table 1.

**Table 1: Summary of Wiske's underlying question areas and the TfU framework**

Question areas	TfU elements
<i>What topic(s) are worth understanding?</i>	Identify <u>Generative Topic(s)</u> to organise the curriculum around
<i>What about these topics needs to be understood?</i>	Articulate clear goals of what students need to understand – <u>Understanding Goals</u>
<i>How can we foster understanding?</i>	Engage students in 'performing' their understanding across differing contexts – <u>Performances of Understanding</u>
<i>How can we tell what students understand?</i>	<u>Ongoing Assessment</u> directed towards the <u>understanding goals</u> using a variety of measures and inputs

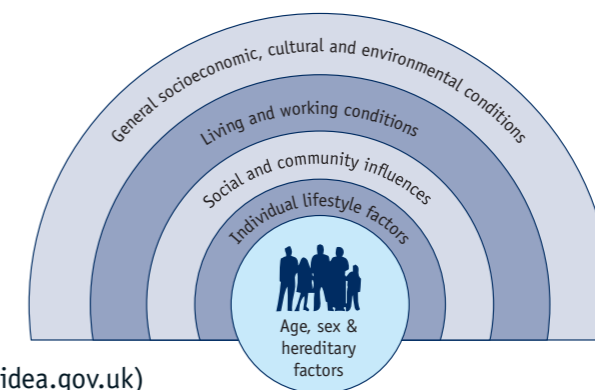
EH1005 was analysed through the TfU framework, using Wiske's four questions to guide analysis across each domain of the framework.

**ANALYSIS**

**Generative Topic**

The *topic worth understanding* that emerged at the heart of module EH1005 was: 'the wider determinants of health'. The course through line is the return to the question: what factors determine the health of populations? This is demonstrated by the repeated reference to the Dalghren and Whitehead (1991) model of determinants of health as a 'must know' concept (Figure 1).

**Figure 1: Dalghren and Whitehead model of the Determinants of Health**



(Image source: www.idea.gov.uk)

**UNDERSTANDING GOALS**

There are five identifiable Understanding Goals (UGs) in EH1005 that make explicit how the learner will progress towards a consolidated understanding of what determines health. The student should:

1. Discuss factors determining population health;
2. Explore the perception of health issues in the public domain;

3. Explain the role of poverty in determining health;
4. Examine major population health issues locally, nationally and globally;
5. Critically appraise the role of health interventions in determining health.

Throughout the module students build and extend their knowledge each week to make increasing connections across the complexity of the subject matter. They are thus facilitated to reach the above Understanding Goals and develop their understanding of a wider concept of health and its determinants.

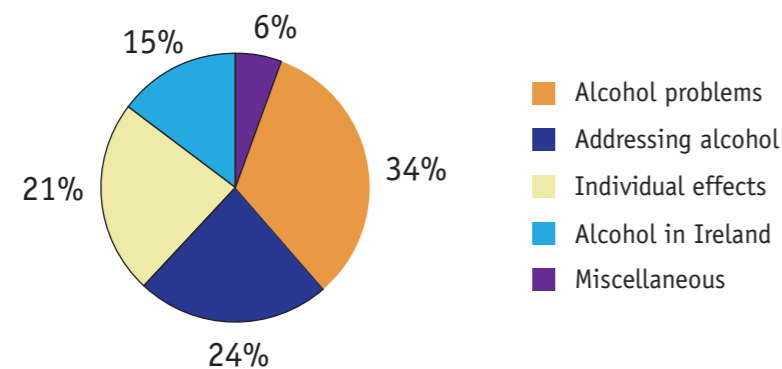
**PERFORMANCES OF UNDERSTANDING**

The identifiable opportunities for students to *foster understanding* during the module are both implicit and explicit. Implicit opportunities arise from the interactive teaching, in-class discussion and group work. There are two explicit opportunities for students to perform their understanding. Firstly, groups of students review and present a book of public health interest to their colleagues. In doing so they demonstrate their understanding of the underlying health issues in the context of that particular book’s story. Secondly, the groups present on a specific population health issue, such as alcohol, to demonstrate their understanding of each Understanding Goal within a specific context.

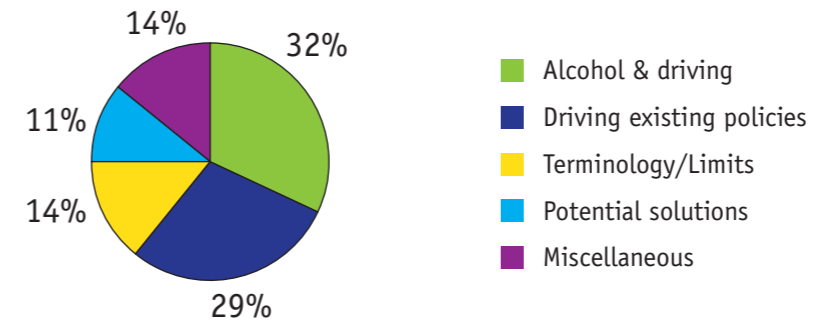
The presenting students explicitly demonstrate their understanding of the issues in question. To assess how much the audience learns from their colleagues’ book presentations, the non-presenting students worked in groups after each presentation to discuss the public health implication(s) of the book, and feed back their collective thoughts in a plenary. These ‘listening’ students did grasp the main points of their colleagues’ presentations, and were able to identify the major population health issue(s) and respective determinants of health in a coherent way. A Classroom Assessment Test (CAT), using the Minute Paper method (Angelo and Cross, 1993) examined student understanding of the Topic Presentation on Alcohol. Twenty-eight out of a possible thirty-one students took part. The listening students reported that they understood best the core concepts of the alcohol problem(s), and issues related to addressing alcohol. The main areas that still puzzled them were alcohol and driving, as well as existing policies and interventions to deal with alcohol problems (Figure 2).

**Figure 2: Results of Classroom Assessment Test on Alcohol Topic Presentation**

What did you understand well from the presentation today?



What aspect is still puzzling you?



**ONGOING ASSESSMENT**

In EH1005 there are four distinct strategies to *tell what students understand*. These address different learning styles, at different times throughout the course. The table below summarises the strategies, indicating the type of feedback employed as well as the timing:

**Table 2: EH1005 Assessment strategies, type of feedback and timing**

Assessment	Type of feedback	Distribution/timing
Class/group discussion	Informal Verbal or written Peer and/or Teacher led self assessment	Throughout the course
Group Presentations	Formal Verbal and written Mainly teacher led, some informal peer input	End 1 <sup>st</sup> Term & Mid 2 <sup>nd</sup> Term
Written book report	Formal Written Teacher led	Beginning 2 <sup>nd</sup> Term
Written examination	Formal Written Teacher led	End of Academic Year

**CONCLUSION**

The TfU framework provided a means of researching the learning environment of a foundation module for first year undergraduates embarking on a programme in public health and health promotion. Applying the TfU framework to articulate the Generative Topic, as well as identifying clear Understanding Goals, made explicit what students need to understand in order to recognise what factors determine the health of populations. Students performed their understanding of health issues in a variety of contexts, and their understanding could be demonstrated in group work and a CAT. The differing formats for ongoing assessment demonstrate that EH1005 can accommodate a range of

learning styles including verbal, written and group orientated entry points to learning.

The structured analysis of a learning environment as presented in this paper, can clarify the teaching and learning process. In doing so, it can encourage teachers to influence their students to become inquisitive learners. They can transmit a 'passion' for the discipline, and invite their students on a journey thus cultivating a cycle of research, and teaching and learning.

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