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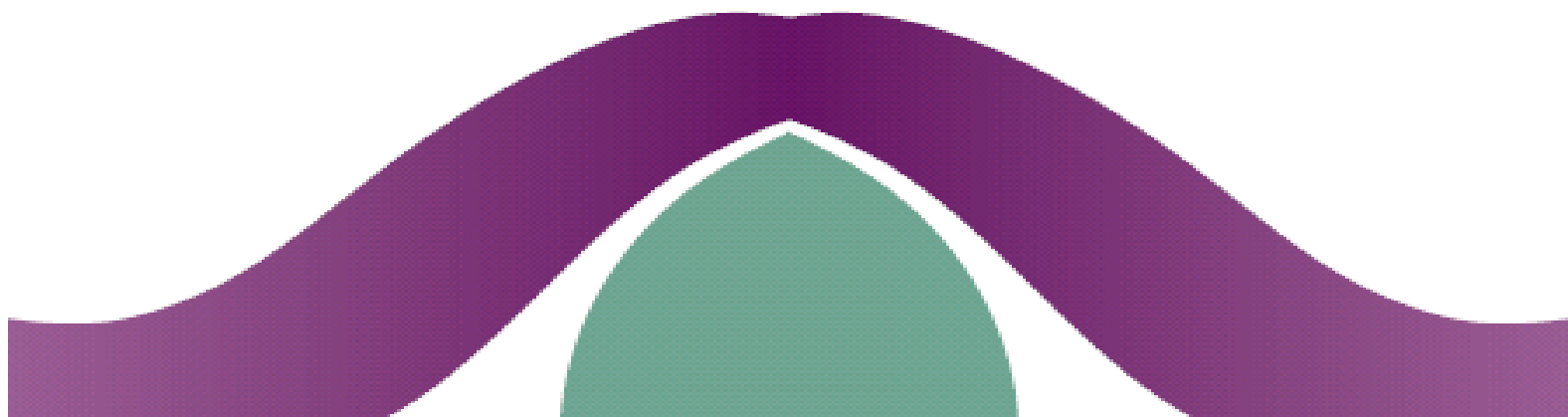
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# Evaluation of a Competency-based Module in Health Promotion



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# Evaluation of a competency based module in Health Promotion

## Introduction

### Background

The Discipline of Health Promotion at the National University of Ireland, Galway delivers a Postgraduate Diploma and Master's course in Health Promotion. While a core Research Methods module incorporates some teaching of evaluation research in health promotion, a need was identified for the further development of this component into a stand-alone module. This need was primarily driven by the development of competencies within the discipline of health promotion. Competency development within the field was a major theme of the Galway Consensus Conference (Allegrante et al., 2009) held by the International Union for Health Promotion and Education (IUHPE) in June 2008. At this conference a number of competency domains were identified within the discipline and the conference organisers issued a consensus statement: '*Toward Domains of Core Competency for Building Global Capacity in Health Promotion: The Galway Consensus Conference Statement*', (IUHPE, April 2009). Eight domains of core competency that are required to engage in effective health promotion practice were identified: catalysing change; leadership; assessment; planning; implementation; evaluation; advocacy; and partnerships .

In the context of evaluation being a core competency domain in health promotion, the main aim of this new module was to provide students with a greater understanding of the relationship between the evidence-base and research practice of evaluation in the discipline. A primary objective was to progress from the theoretical aspects of evaluation to incorporate evaluation research practice into delivery of the module. A blended learning approach was adopted to enable incorporation of a diversity of elements including enquiry-based learning, workshops, tutorials, lectures and new learning technologies. The module development and its evaluation was funded by a grant from the National Academy for Integration of Research, Teaching and Learning (NAIRTL) with the aim of developing a creative, research orientated competency-based module on evaluation practice in health promotion.

### The module

The module evaluated in this study was a MA / Postgraduate diploma level competency-based optional module with 12 contact hours and 12 hours self-directed learning. The course was delivered through enquiry based learning and utilised a number of e-technologies, Wikis, Blogs and Discussion boards, that were made available for enhancing communication or for development of project outputs. The learning outcomes of the module were:

- Recognise the theoretical and conceptual basis of evaluation
- Identify the different forms of evidence
- Identify the breadth of evidence available for evaluation
- Apply a range of evaluations within appropriate settings
- Plan and develop a detailed evaluation proposal.

Students examined the community gardening strand of the Galway Healthy Cities project. The overall focus of this programme being: 'getting as many people as possible gardening'. Group work involved students deciding how to evaluate the programme by focussing on a particular aspect of their own choosing. The groups were required to justify the evaluation plans and to build these around the theoretical base of values, approaches, methods and purpose of evaluation. Assessment included a group written report, individual poster and peer assessment.

### Approach to teaching

The teaching developed in this module draws on a constructivist approach. Carlile and Jordan (2005) described a constructivist approach to teaching as a process where individuals ‘construct’ their own meaning based on previous knowledge and experiences by matching these to new ideas, knowledge and experience. In considering the philosophical argument for arranging learning according to a constructivist approach, Perkins, (1999) notes the stimuli encountered by an individual is never sufficient to convey meaning. Such meaning has to be ‘constructed’.

One of three distinct roles associated with constructivism is that of the active learner (Perkins, 1999), this relates to knowledge and understanding being actively acquired by individuals. The approach used in this module incorporates enquiry-based learning (EBL) that requires students to actively engage in developing material and engage with values and theories relevant to the module’s topic. Perkins (1999) also describes two other roles associated with constructivism; the social learner (knowledge is constructed in a social context), and the creative learner (knowledge is created or recreated). The use of group work and the development of individual and group products call on these roles to be actively engaged by students.

A theoretical framework that has much in common with this constructivist approach is Kearsley and Shneiderman’s (1998) engagement theory. It proposes a model of technology-based teaching and learning which is underpinned by an ideal to create meaningful engagement in learning activities. The theory suggests that three components are required to accomplish such engagement: (1) an emphasis on collaborative efforts involving communication, planning, management and social skills; (2) project-based assignments which make learning a creative, purposeful activity; (3) non-academic focus e.g. when the project has an outside customer in the community. These components were core in the development of and integration of e-technologies into the evaluation module described in this study.

Assessment of the module focused on engaging students and required production of group and individual products and a peer assessment that required students to both mark and rank their peers. Falchinov & Goldfinch (2000) described peer assessment as an activity where students are engaging with criteria and standards, and applying them to make judgement. Weaver & Cotrell (1986) have noted that peer rating can encourage a greater sense of involvement and responsibility in the learning process and in reviewing research of peer assessment Sluijsmans *et al* (1999) have concluded that the process engages learners in judgment making. Falchinov & Goldfinch (2000) found that peer assessments more closely resembled tutor assessments when global judgements based on well understood criteria were used rather than requiring student assessment of several individual dimensions. Peer assessment used in the optional module developed for the current project required students to focus on their peer’s contribution to group work with four clearly defined criteria, study planning; data collection; editorial inputs; and overall reliability. Only peer group members were assessed. Where numbers differed between groups ranking values were weighted to compensate. In order to maintain anonymity a program was developed using FileMaker Pro database software to enable students to input their marks and ranks directly to a spreadsheet that calculated a total mark for each student. The total contributed 20% to the overall module mark. The individual assessment required students to produce a poster showing their main contribution to the group document and the group assessment required each group to produce a document outlining a proposal for an evaluation of the community programme

### **Approach to evaluation**

The approach in both the development and evaluation phases of the module has been to follow a precede-proceed model (Green & Kreuter, 1991) as outlined in figure 1. Using this model enabled a focus on the predisposing, reinforcing and enabling factors associated with the learning process in evaluating the module. To this end evaluation of the process of implementing the module focused on an examination of enabling elements for engagement and the impact of the module

focused on reinforcing elements. The outcomes evaluation of the module focussed on examining predisposing and reinforcing elements for engagement that were measured as perceived self-competencies. Maltby and Mackie, (2009) note that Kearsley and Shneiderman's (1998) model of engagement pre-supposes self-efficacy, a core element of which considers self-perceptions of capability or competency level (Bandura, 1994).

## **Aim and objectives**

### **Aim**

Evaluation of the implementation process, impact of and learning outcomes of the module with respect to student engagement.

#### ***Process objectives:***

- Determine student perceptions of the content, and delivery of the module
- Reflections teaching/facilitation practice and implementation of the module
- Examination of the use of online tools

#### ***Impact objectives:***

- Examination of partnerships, links and networks associated with participation in the module for students, tutors and health promotion practitioners

#### ***Outcomes objectives:***

- Baseline perception of competencies among module participants and control students
- Follow-up perception of competencies among module participants
- Net change in perception of competencies by individual and by competency.

## **Methodology**

A number of methodological approaches were utilised to undertake the evaluation of the module: interviews with key module participants, reflective practice, content analysis of online tools and surveys of student participants.

### **Reflective practice**

Tutors conducted reviews of practice throughout both planning and implementation of the module. This involved regular meetings to:

- Reflect on and review progress
- Review impacts of activities
- Review interactions with student

### **Interviews**

The impact and aspects of implementation of the module were determined through a number of interviews with key participants who had contributed to the implementation of the module. These included the coordinator of the Galway Health Cities project, a community gardening expert, a school teacher and garden society organiser.

Semi structure interviews, telephone and email communications were conducted after completion of the module to review implementation processes and module activities.

### **Survey instruments**

#### *Process evaluation instrument*

A survey instrument (Appendix 1) was used to evaluate the implementation of the module. The instrument comprised four sections:

- Introductory tutor lead sessions
- Using online tools
- EBL project work and working in groups
- Assessment

Statements were presented in each section to which participants were asked to respond on a four point scale from “Strongly agree” to ‘Strongly disagree’.

Two open questions were included at the end of the instrument, requesting students to comment on three things each concerning: ‘what worked’ and ‘what didn’t work’.

#### *Outcomes evaluation instrument*

A survey instrument (Appendix 2) was used to evaluate perceived competencies pre and post completion of the module. The instrument comprised three sections:

- Evaluation competencies
- Group working competencies
- Technical competencies

Statements were presented at baseline and follow-up and participants asked to respond to each on a four-point scale: ‘Not true at all’; ‘Hardly true’; ‘Moderately true’; ‘Exactly true’.

### **Sample**

The target population for the process evaluation instrument comprised students who selected the evaluation module.

The outcomes evaluation instrument targeted students registered on the MA/PG Dip. in Health Promotion Programme. Those who selected the optional evaluation module were evaluated as course participants; those who did not choose the module were evaluated as controls.

## **Data collection**

Both survey instruments were mounted on the Values Exchange (VX) web site (<http://www.nuigalway.values-exchange.com/>) enabling ease of access by students and data handling. Students were notified of the surveys during contact sessions and by announcements on Blackboard and by individual emails sent via this platform. Follow-up announcements were made after the initiation of each phase to remind students who had not already done so to participate in the survey.

### *Baseline and follow-up instrument*

The instrument was mounted in two phases on the VX web site. A baseline pre-course phase was made available to all students registered for the optional module. The second phase included all MA/PGDip in Health Promotion students not taking the module and after completion of the evaluation module, all students registered for the module.

### *Post module instrument*

The instrument was mounted on the VX website and made available to students on the final contact session with students. A computer room was booked and students asked to complete the form immediately after completion of their contribution to the peer assessment.

## **Data Handling**

Both the baseline and follow-up and the post module survey data were downloaded as MS Excel spreadsheets from the Values Exchange web site.

*Baseline and follow-up survey* responses to competency statements were scored:

Not true at all = 1; Hardly True = 2; Moderately True = 3; Exactly True = 4

The resulting values were imported into SPSS 16 (Mac version).

### *Follow-up data*

Values Exchange identification numbers were used to match data from the follow up pre course surveys for those individuals who had participated in the evaluation module. This ensured all responses remained anonymous during the analysis.

*Post module survey* responses to statements were scored:

Strongly disagree = 1; Disagree = 2; Agree = 3; Strongly agree = 4

Coding was oriented to enable a measure of satisfaction with the elements in the module addressed by each statement. One exception to the above coding was a negatively expressed statement 'Working in groups is unfair'. This statement was reverse-coded for analysis.

Comments requested for open questions: 'what worked' and 'what didn't work' were categorised according to themes.



## **Analysis**

### ***Baseline and follow-up survey***

All analyses were conducted using either SPSS 16 or MS Excel spreadsheets. Sum and mean scores were calculated using MS Excel. Independent and paired comparisons of means were calculated using SPSS 16 (Mac version).

### ***Calculation of self-efficacy scores***

A number of calculations were made to determine changes in self-efficacy scores by individual student and by the specific groups of competencies included in the survey instrument.

### ***Individual students' mean scores:***

Scores were averaged across each student's responses for the whole range of competencies surveyed. In addition scores were similarly averaged across the separate sections: Evaluation; Working in Groups; and Technological skill.

Net change in mean scores was calculated for evaluation module participants who had completed both baseline and follow-up phases of the survey.

Mean scores for students at baseline and follow-up were compared using a paired samples t-test. Control and module participant mean scores were compared using an independent samples t-test.

### ***Competency statement mean scores***

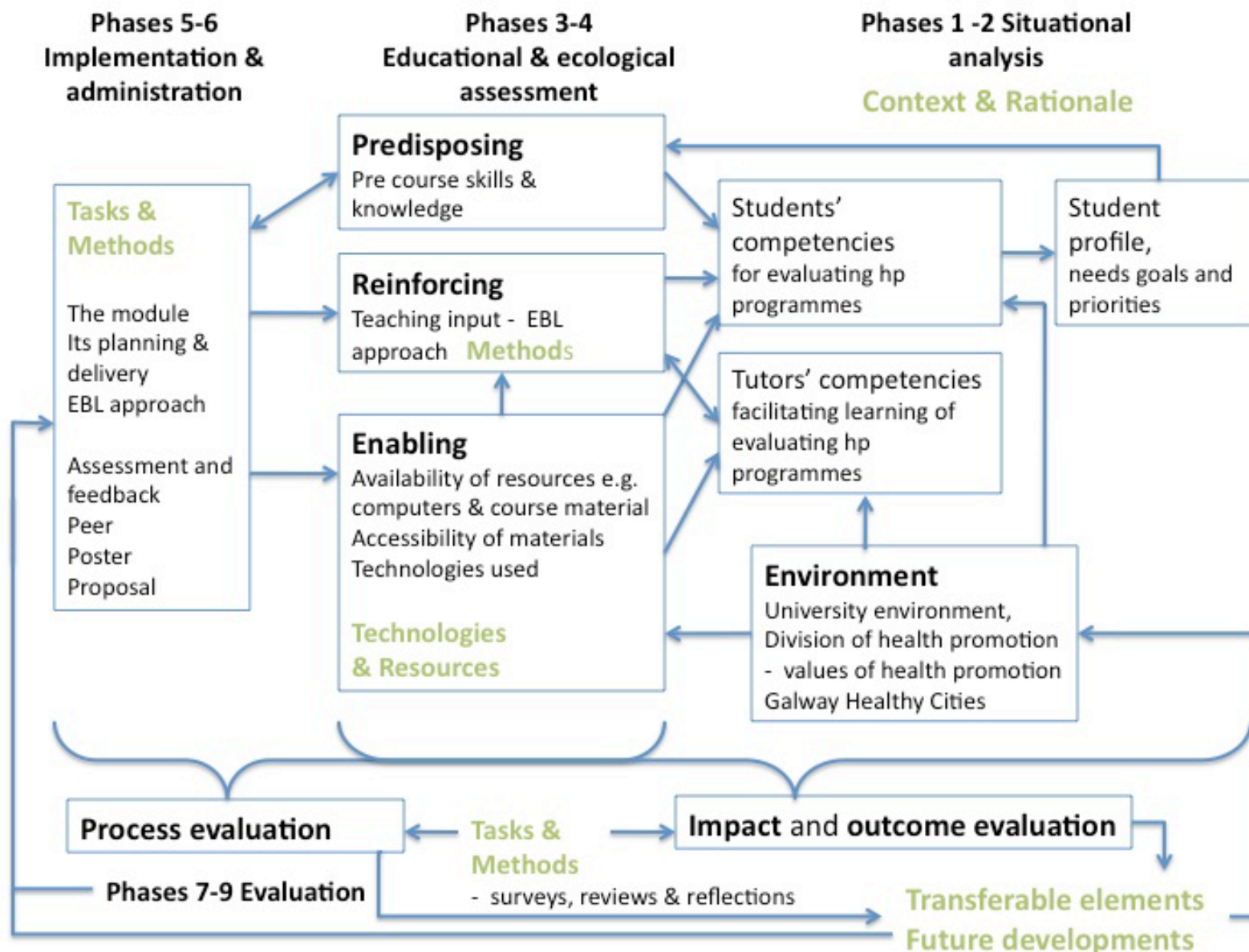
Mean scores were calculated at baseline and follow-up for each competency statement, using responses by students who had completed both phases of the survey.

### ***Post module survey***

Scores for each statement were summed across all respondents. The maximum possible value for each statement (dependant on number of respondents) was used to calculate scores as if derived from a maximum of 10.

A thematic analysis of responses to open questions 'what worked' and 'what didn't work' was conducted.

Figure 1 Precede-Proceed model of the development and evaluation of the module.



## Results

Evaluation findings are presented within the framework of the Precede-Proceed model presented in figure 1. This framework considers evaluation as an integral part of the development process. The findings are presented within three sections: process, impact and outcome evaluations. The process evaluation examined elements of phases 3-6 of the model, and the impact and outcome evaluations examined elements of phases 1-4 of the model. The process evaluation presents findings concerning the implementation of the module that were examined using a post module survey. The impact evaluation presents findings that were examined using interviews and reflective practice and discussions with staff and community partners during delivery of the course in order to assess impacts on partnerships and capacity. The outcome evaluation presents responses to pre and post module surveys of students' perceived competencies related to skills and knowledge required for conducting evaluations.

### Process evaluation findings

Eleven out of 14 students completed the post module survey (78.6%). Sum, mean and modal values for each survey statement were calculated (presented in table 8 Appendix 3) and responses to open questions were categorised by the main themes occurring (presented in tables 1 & 2).

The total sum value possible for each statement was 44 and the maximum mean and modal values were 4. The majority of responses to the survey statements were positively orientated towards satisfaction with the various elements of the module. The overall mean for all elements of the module surveyed was 3.1. To give a more general view of different elements of the module score values were categorised as shown in table 8 and means for each category calculated. Figure 2 displays these category means as a spider plot.

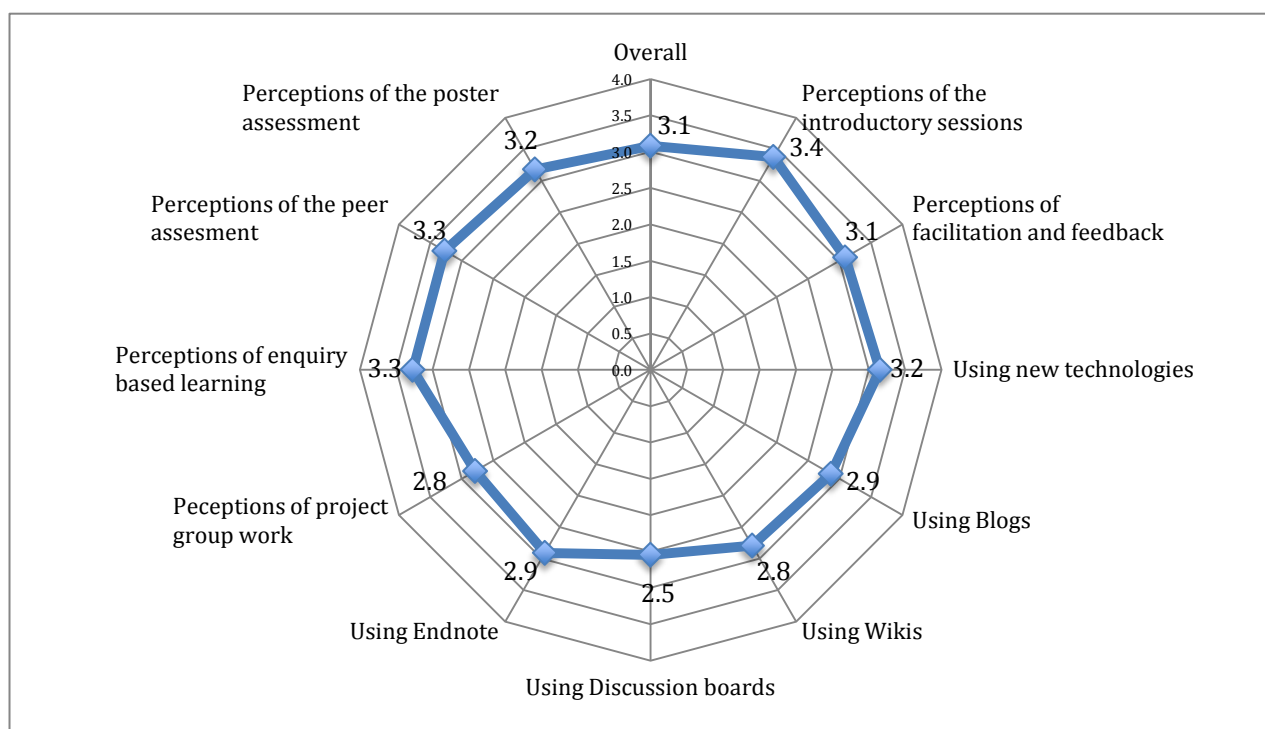


Figure 2 Mean scores for grouped elements of the post module survey.

## **Introductory sessions**

The introductory sessions were in general found to be useful (mean score 3.4, figure 2) with the site visit reported to be most useful (mean score 3.8, table 8). The site visit rated the highest score among all elements in the post module survey. Most students responded positively that the introductory sessions provided sufficient information to start their group projects (mean score 3.1, table 8). However, ongoing discussion of the module with students during delivery revealed a need for further demonstration of practical application of models to evaluation projects and further workshop practice. Comments provided to open questions in the post module survey also revealed some dissatisfaction with the information not matching the practical work needed for the module project. Comments regarding what worked in the module cited the garden visit as very useful.

## **Facilitation and feedback**

A feed back session during the enquiry based learning sessions was considered to be very useful by students (means score 3.2, table 8). Responses to ‘What worked?’ in the post module survey revealed students felt they were receiving helpful assistance from tutors and were able to access tutors for support. Responses to ‘What didn’t work?’ mainly concerned guidance for the poster and one comment stated conflicting feedback was received.

## **Project and group work**

Students’ responses to the post module survey statements showed their overall perceptions of project group work (mean score 2.8, figure 2) were relatively low. This was predominantly due their fear of some members of the group contributing less then others (mean score 2.8, table 8). However, students felt that group working improved teams skills (mean score 3.4, table 8) and made their project work more interesting (mean score 3.3, table 8).

The majority of responses in this survey to both open questions ‘What worked?’ and ‘What didn’t work?’ concerned working in groups. These responses where very mixed. Ten responses were made concerning this theme in answer to ‘What worked?’ These mainly expressed the group work itself as something that worked well, others highlighted particular aspects of group working, such as chairing meetings, communication, learning to trust contribution by other members and group support.

Responses to ‘What didn’t work?’ revealed some tensions with respect to group members not turning up to meetings, poor co-ordination, lack of communication and face-to-face contact between members. Three comments referred to domination and overpowering of members by other individuals in the group. One comment suggested mixing full and part-time students within one group proved problematic.

## **Enquiry based learning**

Discussions with students during delivery of the module revealed that the EBL approach was generally received very positively. This is reflected in responses to statements concerning EBL in the post module survey (mean score (3.3, figure 2), particularly with respect to the active role this approach gave to students (mean score 3.5, table 8). Comments given to open questions in this survey expressed positive experiences with respect to self-directed learning, and the increased responsibility students have for learning.

## **Assessments: Poster and Peer**

Both the poster and peer assessments were well received by students (mean score 3.2 and 3.3 respectively, figure 2). Peer assessment scored well with respect to giving students a chance to feedback on group members' contribution to the group work (mean score 3.4, table 8). Students

**Table 1** Categoriased comments provided in response the open question ' What worked?' included in the post module survey

<b>Working in groups</b>	<b>Compiling the work</b>	<b>Course content and EBL</b>	<b>Feedback and facilitation</b>	<b>Technology</b>
Group work support	Poster	The self directed learning	Access to Tutors for support	Technology, wikis and blogs
Communication with other group members	Creation of a poster - informative	Gives students more responsibility for learning	Getting assistance along the way from the lecturers	Having the wiki
Doing it as a group	Making the poster	I liked the areas I was working on	It was good to get written work assessed	The wiki made it easier to work with colleagues that are living far away or part timers
The group work		Found the visit to the garden useful	Barbara was very helpful	Learning of new technologies
Chairing the meeting		Self learning		The new technologies used.
Working as part of a group		Got experience planning an evaluation.		
Learning to trust that all members will contribute eventually with some encouragement and patience				
Group work				
Working as a group takes some of the pressure off you as an individual - good to have support.				

**Table 2** Categorized comments provided in response the open question ‘ What didn’t work?’ included in the post module survey

<b>Working in groups</b>	<b>Compiling the work</b>	<b>Course content and EBL</b>	<b>Feedback and facilitation</b>	<b>Technology</b>
Tensions began to rise in the group towards the end and one person didn’t turn up because of fear of another personality	The poster.	The lectures weren’t really informative to what we were doing - the workshops were more useful	Some conflicting feedback	Online communication was not utilised
Co-operation	The methodologies.		It was hard to know how to make the poster correctly.	Didn’t find wiki helpful as not everyone logged on
Contributions from the group	Editing of all the work was hard		Very little direction and guidance for poster.	
Co-ordination with group members	A lot of work to be done for the module- requires a lot of meetings etc, hard to find time.			
The lack of face to face contact with group	Waiting to get all the work back to finish at a certain time.			
Having members of both full time course and part time course in same group.	The lit review			
Some people dominated all the events	Students not having the same work load. Some were under pressure with other assignments completed and could not give time to this project until the end.			
Communications were difficult				
Not everyone doing their share in the group.				
Working as a team does have downfalls - some group members overpowering.				

had commented during delivery of the module that the poster assessment in particular had been positively challenging and this theme was similarly expressed in comments given to ‘What worked?’ in the post module survey.

### Use of e-technologies and referencing tools

Using new technologies per se was considered a positive experience (mean score 3.6, figure 2). Responses to open question in the post module survey suggested some students found learning the use of new technologies worked well for them. One student commented “*it made it easier to work with colleagues that are living far away or part-timers*”. Observation of actual usage revealed varied engagement with the various tools made available. Post module survey comments with respect to what didn’t work suggest that the wiki was problematic due to some group members not logging into it. Some students asked for advice or guidance only during direct contact with tutors. This observation and discussion with students during delivery of the module suggest that at least for some students ongoing student-tutor contact was necessary in addition to availability of contact through e-technologies.

#### Use of Discussion boards

Discussions boards were offered as an alternative to blogs for group members to communicate outside of scheduled meeting times. Usefulness of the discussion board was rated lowest among e-technologies used in the course with the lowest sum score (28) and mean value (2.5). Discussion with students during delivery of the module revealed there was little interest in usage of this tool. Students had expressed a preference for using either the Wiki or Blog tools. Examination of each groups’ assigned pages on Blackboard confirmed very little use had been made of them.

#### Use of Wikis

Wikis had been presented to students as potentially useful for developing and collating material for their group documents so that all group members could contribute to and visualise progress.

**Table 3 Wiki usage according to Blackboard recorded criteria**

	Total saves	% of group total	Total lines modified	% of group total
Group A total	22		80	
1	7	31.8	52	65.0
2	8	36.4	16	20.0
3	6	27.3	11	13.8
4	1	4.5	1	1.3
5	0	0.0	0	0.0
Group B total	3		18	
1	1	33.3	13	72.2
2	1	33.3	4	22.2
3	1	33.3	1	5.6
4	0	0.0	0	0.0
Group C total	103		2203	
1	68	66.0	1756	79.7
2	3	2.9	233	10.6
3	14	13.6	72	3.3
4	8	7.8	71	3.2
5	10	9.7	71	3.2

Table 3 presents the usage of this tool according to criteria recorded by Blackboard that comprises total number of saves and total number of lines modified within each group Wiki. These criteria give an overview of the extent of usage. As the table shows this varied by group and by individual member within groups. One group made extensive use of the Wiki to develop drafts of their group document, however the other two groups primarily used the wiki for posting links to information.

#### Use of Blogs

Blogs had been presented to students as potentially useful for discussions between members of the group when they could not meet and for reflecting on and discussing progress. Two groups used the blogs minimally, both only posting a total of 5 blogs (per group) from only two members in each group. These two groups mainly used the blogs for posting links to information but did

include some discussion of progress between those members engaging with the tool. One group however used the blog tool more extensively, with all members of the group involved and a total of 38 blogs posted. This group used the blogs for a variety of purposes, posting links to files containing meetings minutes, posting meetings agendas, discussion on progress, links to information. Usage of Blogs is reflected in responses to the post module survey, with a low mean score of 2.9 (figure 2) recorded for this tool. Students did not particularly find the tool useful for reflecting on progress (mean score 2.6, table 8) but more useful for general communication between other group members (mean score 3.1, table 8).

### *Use of file exchange*

File exchange was presented to students as potentially useful for exchanging information and documents between group members. Table 3 shows that this was the main use made of the tool, with 2 groups using it for this purpose. One group also used it to exchange draft versions of their project document rather than develop it using their group Wiki.

### **Summary e-technology**

Table 4 gives an overview of usage of the e-technology available to students during the module. Wikis were used most extensively but mainly for gathering information. This was mainly presented as file links. Only one group made full use of the Wiki pages to develop drafts of their group document online. Two groups made use of Blogs, mainly to plan group events such as meetings and discuss how the document should be developed. There was some confusion in all groups between using the Wiki pages and Blog entries and their associated comments sections. Some students used the comments sections as either Wiki pages or Blog entries respectively, rather than making comments on entries.

**Table 4 Overview of e-technology use during**

E-tool	Group	Wikis		Blogs		File exchange	Discussion board
		Pages	Comments	Entries	Comments		
Information for group document	A	X				X	X
	B	X	X			X	
	C	X					
Group document development (draft versions)	A					X	
	B						
	C	X					
Planning - group document & meetings	A						
	B	X	X	X			X
	C	X	X	X	X		
Discussion of information collected	A						
	B	X	X				
	C	X		X			
Minutes of meetings	A						
	B						
	C			X			

### **Use of reference managers**

Students had been introduced to using EndNote as a reference manager for their group document. However, they had been informed that they could use any reference manager with which they were familiar, as University software licensing agreements did not include off campus use of EndNote for these students. Some expressed a preference to work on references without the use of any software. The post-module survey presented statements about EndNote usage, responses to



which scored low (mean score 2.9, table 8). Discussions with students during delivery of the module revealed some reluctance to learn to use a reference manager due to the time required compared to the benefits for one assignment. Some students expressed a preference for using a free online add-on to the FireFox web browser, Zotero.

## **Impact evaluation findings**

The impact evaluation sought to examine additional effects of the module beyond its specific aims and learning objectives. The main themes emerging from discussion with key participants concerned partnerships, dissemination, and capacity building for activities with community-based organisations.

### **Partnerships**

The HSE Healthy Cities coordinator welcomed the establishment of the linkage between a university module and one of the Galway Healthy Cities projects. It is envisaged that one of the benefits of this in the future may be the formal evaluation of projects as part of the Health Promotion Masters programme by students. The teaching staff also welcomed the opportunity to develop new partnerships and to build on existing alliances in the planning and implementation of the module. A very positive outcome from the perspectives of both the HSE and the teaching staff was the opportunity to introduce students to a real life project in which to apply their evaluation skills. Another beneficial aspect was the interest shown by the students in the community gardens. One of the students subsequently joining the NUIG Organic Garden Society highlighted this interest.

### **Knowledge dissemination**

Feedback from the NUIG Societies Officer highlighted the value in communicating information about the garden to a wider audience that in turn acted as valuable feedback prompting the focussing of a number of issues relevant to the organic gardens. Knowledge of the organic gardens has been increased outside of their previous membership and information disseminated to a much wider range of individuals. The consultant organic gardener emphasised the benefits to meeting the students in the garden so that it was possible to see how the project works on the ground and to gain an appreciation of the very many positives associated with it.

### **Capacity building**

Discussions with the HSE Healthy Cities Coordinator revealed there is clear scope for expansion to include other relevant projects both within this module and the potential of projects for additional modules within the MA/Post Graduate Diploma in Health Promotion programme.

From the perspective of teaching staff, feedback from the stakeholders has been useful in planning the module for the next academic cycle with suggestions made to alter some aspects of the delivery to improve the module. For example the consultant organic gardener pointed out that the NUIG garden although society run is not a community garden in the true sense. Teaching staff will ensure that the projects chosen for the next academic cycle do meet the remit of community-based projects.

## Outcome evaluation findings

### Response rate

Fourteen students completed the evaluation module, 12 of these completed the baseline survey and 13 the follow-up survey. In total 11 students who took the course completed the survey at both baseline and follow-up (78.6%).

Seven out of 31 eligible students on the MA/PG Dip. Health Promotion Programme who did not take the evaluation module completed the survey, these individuals acted as controls in determining the impact of the course on perceived competencies.

In total 21 students completed at least one phase of the survey. Table 5 shows details of students' participation in the module and completion of the survey.

**Table 5 Details of module participation and survey completion**

Student	Completed the module	Survey completion		
		Pre course or control	Post course	Both surveys
1	✓	✓	✓	✓
2	X	✓	N/A	X
3	X	✓	N/A	X
4	X	✓	N/A	X
5	✓	✓	✓	✓
6	✓	✓	✓	✓
7	X	✓	N/A	X
8	✓	✓	✓	✓
9	✓	✓	✓	✓
10	✓	✓	✓	✓
11	✓	✓	✓	✓
12	✓	✓	✓	✓
13	✓	✓	✓	✓
14	✓	X	✓	X
15	✓	✓	✓	✓
16	✓	✓	✓	✓
17	✓	X	✓	X
18	X	✓	N/A	X
19	X	✓	N/A	X
20	X	✓	N/A	X
21	✓	✓	X	X

### Baseline comparison of course participants and controls

No significant difference was found between the mean overall score (2.68) for those who had registered for the evaluation module but not yet started, compared to the mean overall score (2.94) for control subjects (independent samples:  $t = -1.028$ ,  $df = 19$ ,  $p = 0.317$ ).

### Comparison of perceived competencies at baseline and follow-up.

A significant difference (paired samples:  $t = -5.29$ ,  $df = 10$ ,  $p = <0.0001$ ) was found between the mean overall scores for the evaluation module participants ( $n=11$ ) who had completed both phases of the survey at baseline (2.59) and follow-up (3.49). Figures 3–6 present the change in mean scores for individual students. Figure 7 presents changes by each competency statement and table 8 the net change for each student and each group of competencies.

The figures show that all 11 students had increased scores for their perceived competencies with mean net change in scores of 1.01 (overall), 0.47 (group work), 1.08 (technical competencies) and the greatest net change of 1.55 for evaluation knowledge and skills (table 6).

Students reported higher levels of competency for group work before the course than for other skills and knowledge (Figures 5 & 7). Despite this, with the exception of three students that showed no change, all reported increased competency in this area after the course (figure 5). The greatest changes (figure 7) were for the ability to apply a framework or model to undertake and evaluation (net increase of 2.1) and for skills and knowledge to plan an evaluation of a health promotion project (net increase of 2.0).

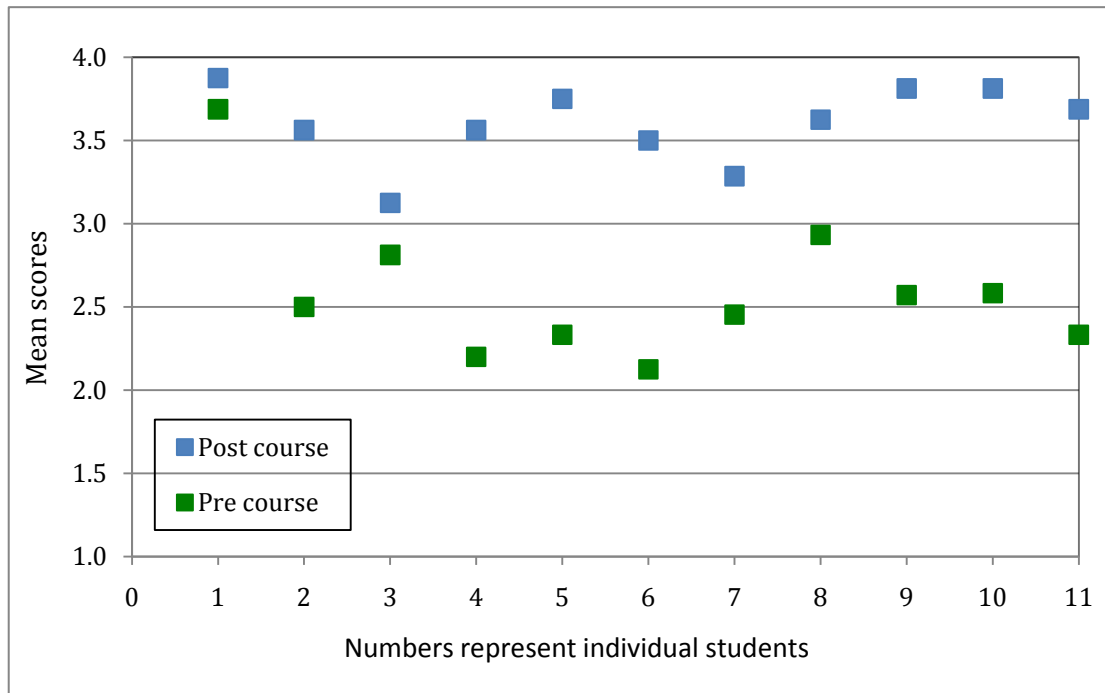


Figure 3 Comparison of all surveyed competencies for individual students at baseline and follow-up (n=11).

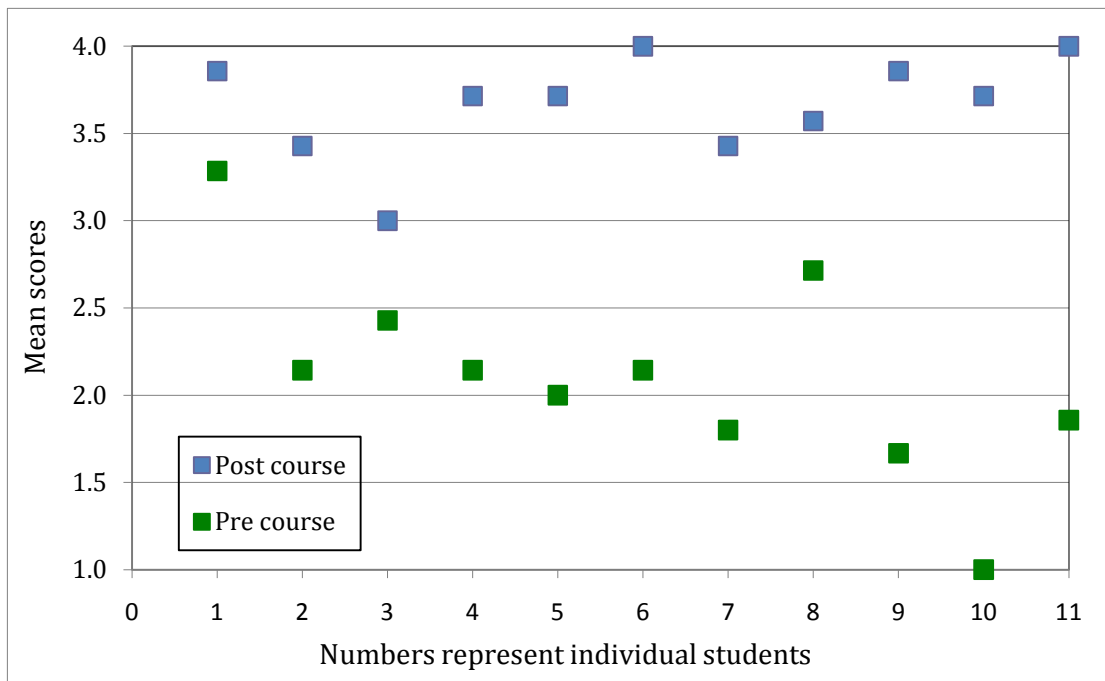


Figure 4 Comparison of evaluation knowledge for individual students at baseline and follow-up (n=11).

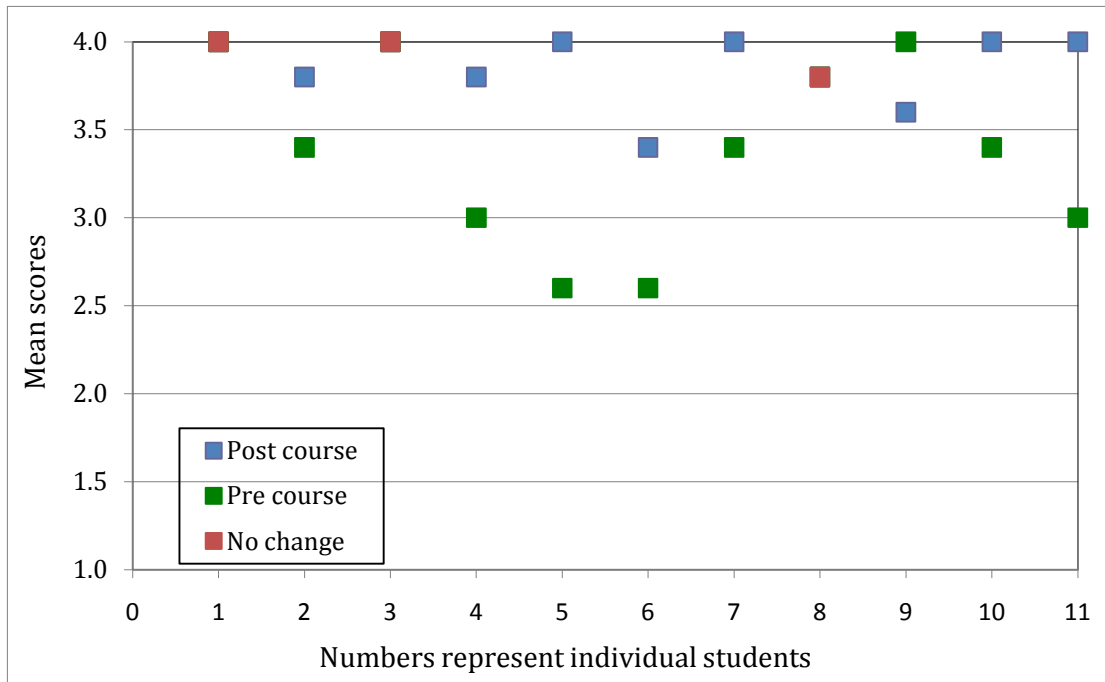


Figure 5 Comparison of group work competencies for individual students at baseline and follow-up (n=11).

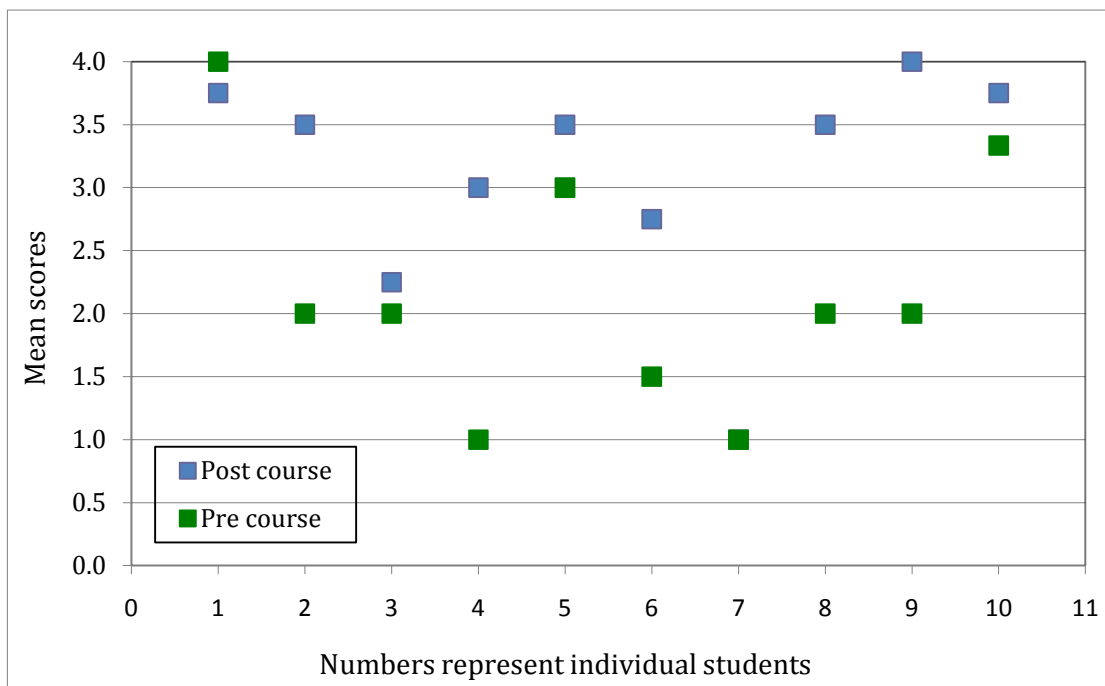
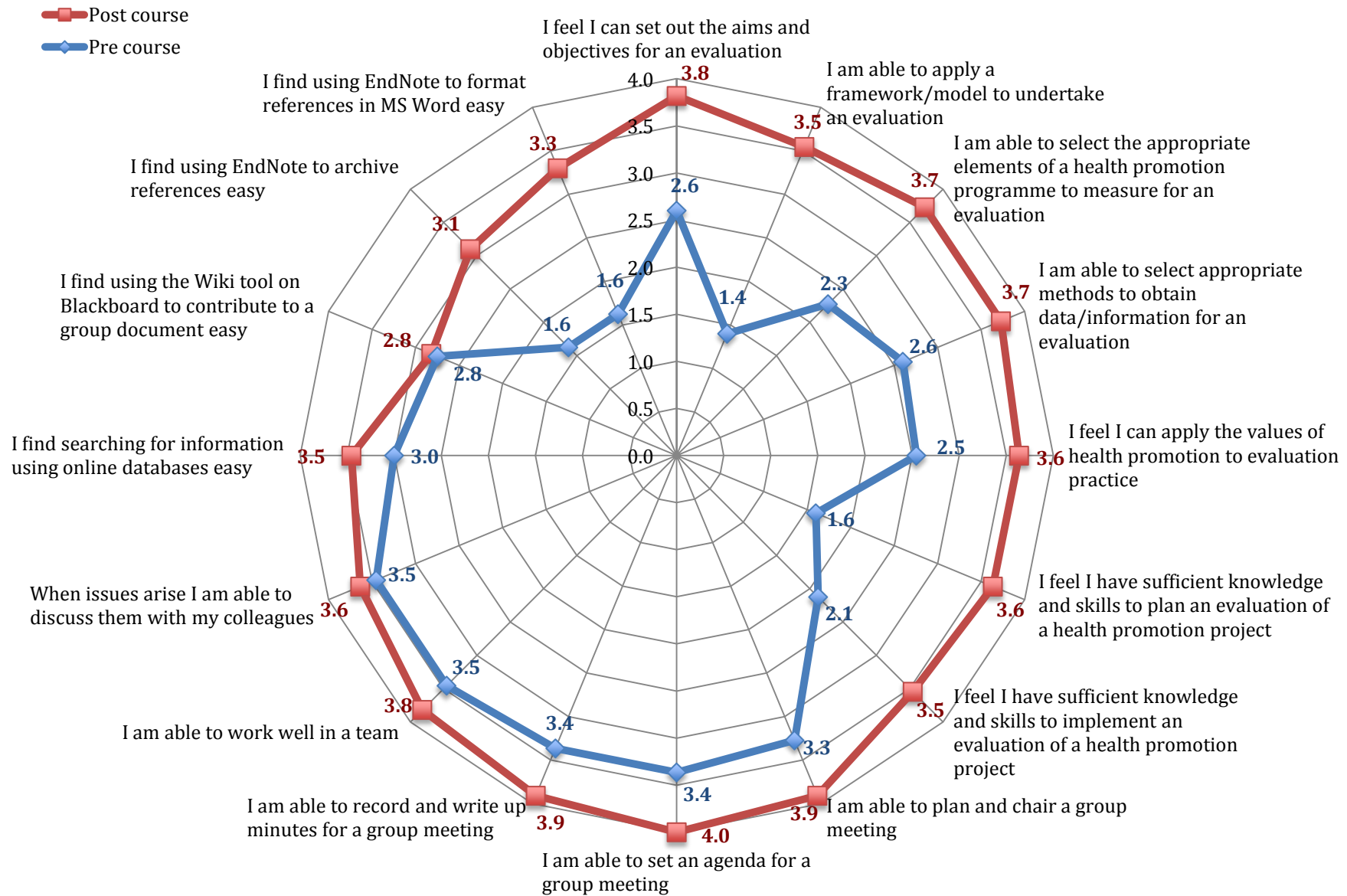


Figure 6 Comparison technical competencies for individual students at baseline and follow-up n=9. One student did not respond to the technical section of the survey at baseline.

**Figure 7 Changes in mean scores for self-efficacy at baseline and follow-up (n=11).**



**Table 6 Net change in mean self-efficacy scores for individual students (n=11) overall and for each of the three sections of competencies: evaluation, working in groups and technical skills.**

Student	Evaluation	Working in groups	Technical skills	Overall
1	0.57	0.00	-0.25	0.19
2	1.29	0.40	1.50	1.06
3	0.57	0.00	0.25	0.31
4	1.57	0.80	2.00	1.36
5	1.71	1.40	0.50	1.42
6	1.86	0.80	1.25	1.38
7	1.63	0.60	0.00	0.83
8	0.86	0.00	1.50	0.69
9	2.19	-0.40	2.00	1.24
10	2.71	0.60	0.42	1.23
11	2.14	1.00	2.75	1.35
Mean	1.55	0.47	1.08	1.01
Stdev	0.69	0.53	0.96	0.44
Min	0.57	-0.40	-0.25	0.19
Max	2.71	1.40	2.75	1.42

### Comparison of tutor and peer assessment outcomes

Figure 8 presents the comparison of overall and peer assessment marks for each student that participated in the module where each type of assessment was marked out of 100. The graph reveals a general trend of increase in mark derived from peer assessment with corresponding overall mark. The correlation is however low (Pearson's  $R^2$  0.49).

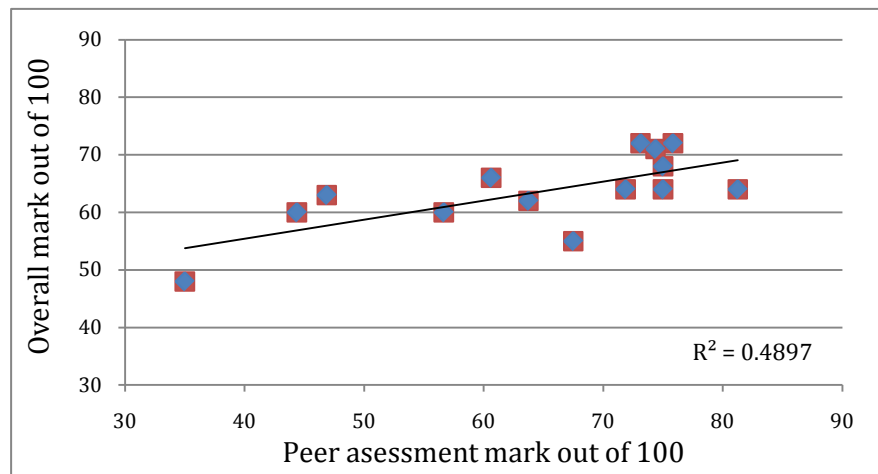


Table 7 shows that the mean peer assessment mark was slightly higher than for overall marks and the individual tutor marked poster. Distribution of marks was similar for both peer assessment and tutor marked individual poster assessment.

**Figure 8 Comparison of overall and peer assessment marks for module participants**

**Table 7 Mean (stdev), minimum and maximum marks achieved by module participants**

	Peer assess 20%	Poster 30%	Group 50%	Overall
Mean (stdev)	64.38 (13.94)	57.00 (14.33)	66.71 (2.67)	63.50 (6.61)
Min.	35.00	30.00	64.00	48.00
Max.	81.00	78.00	70.00	72.00

## Summary and Discussion

A major aim in the development of the evaluation optional model described in this study was to link with a community-based programme to provide a 'real world' scenario to enhance student's engagement with the process of learning about evaluation. A number of elements were used to achieve this: group work; an enquiry-based project and use of e-technologies to aid communication between students and tutors and the development of project outputs. The current study found the use of a community –based programme very positive. It is one of the 3 main components in Kearsley and Shneiderman's (1998) model of engagement, i.e. the use of a non-academic focus particularly where this is a focus on a community-based project.

A second component of Kearsley and Shneiderman's (1998) model of engagement is the integration of collaborative efforts including group work, communication, planning, management and social skills. In the current study participants reported mixed responses to working in groups, highlighting both positive and negative aspects. However there was appreciation of the experience of group work. The use of peer assessment was positively received with respect to enabling students to feedback on their peer's contribution to group work.

The third component of Kearsley and Shneiderman's (1998) model of engagement is the use of project-based assignments. In the current study the incorporation of a project completed through enquiry-based learning was found to be well received and was felt to increase students' responsibility for learning. This engagement of the process by students is reflected in the competence scores for evaluation knowledge, which had increased for all students who participated in the module. The EBL approach was also well received with the majority of students responding positively about its use. Discussion with students also revealed there was a need for further demonstration of practical application of models to evaluation projects and further workshop practice.

### *Integration of e-technologies*

In a debate on the use of Wikis as a virtual space for collaborative practice Boulos *et al*, (2006) has noted that this tool can be used as a source for obtaining information and knowledge, and also as a method of virtual collaboration. This virtual space allows students to engage in learning with each other, using wikis as a shared environment for knowledge construction. The results of the current evaluation do not clearly show whether incorporation of the use of e-technologies enhanced engagement in the subject of the module. Full integration of e-technologies was not achieved; there was varied engagement however Wikis were the e-tool used most extensively. Of particular concern, some students asked for advice or guidance only during direct contact with tutors. This observation and discussion with students during delivery of the module suggest that at least for some students ongoing student-tutor contact was necessary in addition to availability of contact through e-technologies.

### *Impact of the module on participants*

With respect to the impact of the module on students, validation of responses to self perceived competencies in correlation with marks achieved for course assessments was not possible due to anonymity of responses to the pre and post module survey. Thus competency responses could not be further validated in this manner.

The impact could however be considered in terms of increase in self-perceived competency over the course of the module and the level of engagement this signifies. Bandura, (1994) stated that 'a strong sense of efficacy enhances human accomplishment and personal well-being



in many ways.’ Self-efficacy has as a core component a sense of competency. In the current study the measure used to examine the module’s impact on students was their self-perceived competencies. This analysis revealed no difference between controls and pre module participants, while module participants reported significant improvements after completion of the course compared to their pre module perceived competency. All competencies examined showed increased scores after the module with the greatest increase for knowledge of evaluation. Where higher scores had been reported prior to the module (particularly with respect to group work) these also showed increases after its completion. Bandura (1994) links a high sense of efficacy with a tendency to approach difficult tasks as challenges rather than as something to be avoided. This enables or ‘fosters’ engagement or ‘deep engrossment in activities’. In this sense these results can be considered an indication of a high level of engagement with the module leading to a positive impact on participants. The module also aimed to create a real life experience of the practice of evaluation of health promotion programmes.

In considering the use of project based service learning in higher education Hugg & Wurdinger, (1994) draw on Dewey’s (2007) thesis that to effectively participate in education students must be able to experience education in the context of life and cites a number of examples of reported feedback from students that clearly states a preference for practical application over passively received lecture material. The current study reflects this position as it shows all aspects of practical engagement with the subject of the module scored highly such as site visits, workshops, community programme based project work and the EBL approach. Hugg & Wurdinger (1900) also note that employers also consider the requirement for practical experience very important.

Comparison of marks derived from peer assessment and tutor assessment showed a general but low correlation. Falchinov & Goldfinch (2007) found that peer assessments more closely resembled tutor assessments when based on clear criteria. In the current study while simple and clear criteria were used for the peer assessment, these criteria did not completely match those used by tutors in assessing individual contribution to the group project and the poster. Peer assessment was based on consideration of contribution to the group work, while tutors also assessed quality, presentation and coherence of work produced. Falchinov & Goldfinch (2000) have stated that the main benefit of involving students in assessment is in the improvement to learning that can result rather than in the reliability of peer marking per se. Others have noted the importance of student involvement in assessment is in encouraging greater engagement and higher levels of responsibility for making judgements (Sluijsmans et al., 1999; Weaver & Cotrell, 1986).

#### *Wider impacts of the module*

The module had a number of wider impacts. As a general response all stakeholders, (tutors, students and practitioners in the community) reported that involvement in the module was a positive and worthwhile experience. This was especially highlighted from the perspective of networking opportunities that arose for both students and tutors. Of particular importance, contacts made by students with community-based practitioners have the potential to be useful for pursuing careers after completion of the programme. From the perspective of continuing collaboration between participants, partnerships and opportunities for further links between teaching staff and community-based practitioners were built, or where these had already existed, increased.

#### **Study limitations**

A number of limitations should be noted in considering the findings of this study.

This study did not compare module participants with those on a similar competency based module not incorporating the blended learning elements used here. Thus the specific impact of these elements on the outcomes reported could not be determined in the absence of a appropriate control module. In this context the outcomes of the module's impact have only been show to have internal validity. It was also not possible to validate competency scores against other measures of performance in considering the impact of the module on students. Anonymity of responses to the pre and post module survey of competencies meant changes in competency scores could not be correlated with marks achieved for course assessments. In addition the target sample was small and the study considered only one year of delivery. Further evaluation of the module over time would provide a clearer picture of benefits or problems associated with the approach and elements incorporated.

### **Conclusions**

This module had sought to integrate the use of practical experience of research in the area of evaluation into the process of students' learning in this area. The results of this evaluation have shown that the module achieved this goal according to the measured outcomes of an increase in self-perceived competencies and a high level of support among students for the teaching approach adopted particularly the use of a community programme and enquiry based learning. However the full integration of e-technologies appeared less successful, with variable use made by students.

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## Appendix 1 Process evaluation instrument

<b>Module Processes and implementation</b>	Strongly agree	Agree	Disagree	Strongly disagree
<b>Introductory tutor lead sessions</b>				
The introductory lecture material provided sufficient information to get the project work underway				
The site visit was useful to set the background for the group project				
It was easy to identify project stakeholder following the site visit				
The workshop was useful to demonstrate how an evaluation was planned and conducted				
<b>Using the online tools</b>				
The Wiki tool on Blackboard is very useful for developing group work				
It is easy to write up information on the Wiki				
It is easy to attach graphics to the Wiki				
The Blog tool on Blackboard is very useful for reflecting on progress				
The Blog tool on Blackboard is very useful for general communication with other group members				
The discussion board on blackboard is very useful for general communication with other group members				
EndNote is very useful for managing references				
Using new technologies in my studies was a positive experience				
Using new technologies in my studies was a challenging experience				
In the future it is very likely that I would introduce new technologies such as Blogs or Wikis into my professional work				
<b>EBL, Project work &amp; Working in groups</b>				
Working on a project made learning about evaluation interesting				
Working in groups is unfair as some people contribute less than others				
Working in my group improved my team skills				
I found enquiry based learning gave me a more an active role in acquiring knowledge about evaluation				
I found that enquiry based learning gave me more control over how I learnt about evaluation				
I felt that I received enough guidance and facilitation for tutors to enable me to complete the project				
<b>Assessment</b>				
Peer assessment is a good way to enable me to record how colleagues in my group have contributed to the project				

The peer assessment covered sufficient aspects of colleagues contributions for me to make a fair assessment				
The group presentation provided me with good feedback on my progress				
The poster presentation enabled me to show that I can summarise what I have contributed to the project				
What worked well for you in this course? Please give 3 examples				
What did not work well for you in this course? Please give 3 examples				

## Appendix 2 Outcomes evaluation instrument

Competency	Not at all true	Hardly true	Moderately true	Exactly true
<b>Evaluation</b>				
I feel I can set out the aims and objectives for an evaluation				
I am able to apply a framework/model to undertake an evaluation				
I am able to select the appropriate elements of a health promotion programme to measure for an evaluation				
I am able to select appropriate methods to obtain data/information for an evaluation				
I feel I can apply the values of health promotion to evaluation practice				
I feel I have sufficient knowledge and skills to plan an evaluation of a health promotion project				
I feel I have sufficient knowledge and skills to implement an evaluation of a health promotion project				
<b>Working in groups</b>				
I am able to plan and chair a group meeting				
I am able to set an agenda for a group meeting				
I am able to record and write up minutes for a group meeting				
I am able to work well in a team				
When issues arise I am able to discuss them with my colleagues				
<b>Specific technical skills</b>				
I find searching for information using online databases easy				
I find using the Wiki tool on Blackboard to contribute to a group document easy				
I find using EndNote to archive references easy				
I find using EndNote to format references in MS Word easy				

## Appendix 3

**Table 8 Sum, mean and modal values for each post module survey statement.**

Categories	Statement no.	Statements	Scores		
			Sum	Mean	Mode
Introductory sessions	S1	The introductory lecture material provided sufficient information to get the project work underway	34	3.1	3
	S2	The site visit was useful to set the background for the group project	38	3.8	4
	S3	It was easy to identify the project stakeholders following the site visit	38	3.5	3
	S4	The workshop was useful to demonstrate how an evaluation was planned and conducted	35	3.2	3
Using Wikis	S5	The Wiki tool on Blackboard is very useful for developing group work	34	3.1	3
	S6	It is easy to write up information on the Wiki	34	3.1	3
	S7	It is easy to attach graphics to the Wiki	31	2.8	2
Using Blogs	S8	The Blog tool on Blackboard is very useful for reflecting on progress	29	2.6	3
	S9	The Blog tool on Blackboard is very useful for general communication with other group members	34	3.1	3
Discussion boards	S10	The discussion board on blackboard is very useful for general communication with other group members	28	2.5	3
Using EndNote	S11	Reference managing software is very useful for archiving and formatting references	32	2.9	3
Using new technologies	S12	Using new technologies in my studies was a positive experience	40	3.6	4
	S13	Using new technologies in my studies was a challenging experience	31	3.1	3
	S14	In the future it is very likely that I would introduce new technologies such as Blogs or Wikis into my professional work	30	2.7	3
Project and group work	S15	Working on a project made learning about evaluation interesting	36	3.3	3
	S16	Working in groups is unfair as some people contribute less than others	31	2.8	4
	S17	Working in my group improved my team skills	37	3.4	4
Enquiry based learning	S18	I found enquiry based learning gave me a more an active role in acquiring knowledge about evaluation	38	3.5	3
	S19	I found that enquiry based learning gave me more control over how I learnt about evaluation	34	3.1	3
Facilitation and feedback	S20	I felt that I received enough guidance and facilitation from tutors to enable me to complete the project	33	3.0	3
	S23	The group presentation provided me with good feedback on my progress	35	3.2	3
Peer assessment	S21	Peer assessment is a good way to enable me to record how colleagues in my group have contributed to the project	37	3.4	4
	S22	The peer assessment covered sufficient aspects of colleagues contributions for me to make a fair assessment	35	3.2	3
Poster assessment	S24	The poster presentation enabled me to show that I can summarise what I have contributed to the project	35	3.2	3
		Min	<b>28.00</b>	<b>2.55</b>	<b>2.00</b>
		Max	<b>40.00</b>	<b>3.80</b>	<b>4.00</b>
		Mean	<b>34.13</b>	<b>3.13</b>	