

Public health teaching in practice, peer learning and partnership working: the Cook School project

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Abstract

Authentic learning opportunities replicating working environments will enhance learners' employability and intrinsic motivation. Within most undergraduate curricula, opportunities for students to experience hands-on learning opportunities which mimic public health practice are limited. A pilot university cook and eat programme (the Cook School) was developed based upon community cook and eat programmes. The aim was to enable trained undergraduate Nutrition students to facilitate healthy eating activities to their peers, as a voluntary co-curricular activity.

Two cook and eat programmes, each of five weeks duration, were offered to undergraduate students (12 participants per programme). Cooking was delivered by trained chefs and the healthy eating components were facilitated by trained undergraduate Nutrition students. Participants did not know beforehand that sessions would include nutrition information & activities in addition to cooking. Facilitators identified 'employability' as a key driver for their participation in this project. Their post-course evaluations suggested that key employability skills like team work, time management, communication and organisation were enhanced by involvement in the Cook School. Participants suggested that attending Cook

School improved their knowledge of healthy eating. Whether this translates into improved diets long term is currently unknown.

This pilot project offered undergraduate Nutrition students a unique opportunity to gain key employability skills within an authentic learning environment, working in partnership with their peers.

Background

Employability is a major issue for students and institutions (Pegg et al, 2012; Neves & Hillman, 2016; O'Leary, 2016a). Embedding employability into higher education is a priority (Higher Education Funding Council for England (HEFCE), 2011) to equip graduates for workplace demands (Pegg et al, 2012). Applying knowledge and skills to authentic situations mirroring real life enhances employability. However learning opportunities which replicate the working environment are often limited within the taught curriculum.

The skill of the Public Health practitioner lies in the application of principles to practice. Within education, this usually comprises group-work and tutorial activities. Public health relates to the health and wellbeing of populations (Faculty of Public Health, 2010); some interventions are delivered by practitioners to

high risk or hard-to-reach community groups. Dealing with those groups is challenging, requiring knowledge, flexibility, communication skills and time management. An example is cook and eat programmes delivered to hard-to-reach groups within the community setting to enhance their cooking skills and ability to put healthy eating messages into practice. These are typically delivered by trained public health staff and include practical cookery plus healthy eating messages. In this project, we translated an existing Public Health cook and eat programme to the university setting (Cook School). Whereas community cook and eat programmes are delivered by one or two trained staff following a manual and deliver both the cookery and healthy eating messages, in our case the healthy eating messages were delivered by undergraduate trained Nutrition students (the facilitators). The purpose of establishing the Cook School was twofold: firstly to improve knowledge and skills of undergraduate students through cooking and healthy eating sessions, and secondly to enable volunteer undergraduate Nutrition students to facilitate the healthy eating components, as a co-curricular opportunity to gain experience of public health in action, thereby enhancing their employability. Hereafter they are referred to as 'facilitators' to distinguish them from the students who participated in the Cook School ('participants'). The Cook School was offered as a co-curricular opportunity for students i.e. outside of the curricular time, to enhance their learning and complement the academic curriculum. The value of co-curricular activities for students has been highlighted (Andrews, 2013); however there is a significant time-cost for staff and students involved, which should not be underestimated.

Regarding the first goal, most university undergraduate students are young, and young people generally have poor diets (Public Health England, 2016). Young adulthood is a time when the risks for many avoidable chronic diseases may be mitigated by lifestyle choices (Sawyer et al, 2012). Despite this many young people make poor behavioural decisions (Alwan et al, 2010; Gore et al, 2011). They are more likely to take risks (Kelly, 2000) and less likely to consider behavioural consequences (Patton et al, 2012). Additionally they often live away from home for the first time, catering and

budgeting for themselves, and may not have the knowledge, finances or skills to prepare healthy food or an adequate understanding of why it matters.

Regarding the second goal, the BSc Nutrition is a three year accredited undergraduate degree

(<http://www.associationfornutrition.org/>), thus graduates are demonstrably equipped with the skills and attributes required by nutritionists (Association for Nutrition (AfN), 2012). There are currently 43 accredited nutrition or related undergraduate degrees within the UK (AfN, 2017), so competition for jobs is fierce. Enabling students to apply their skills in a variety of authentic learning situations is a priority for the university teaching team. The Cook School Project represented a novel educational opportunity for our Nutrition students.

Methods

Background

An existing Public Health cook and eat programme developed by Kingston Public Health was the basis for the Cook School. A member of academic staff (HM) was trained in the programme aims, objectives and delivery by a Public Health dietitian over a three hour training period, using a manual developed for cook and eat programmes by the Public Health team. HM subsequently developed and delivered training for the facilitators using the manual amended to reflect the makeup of the Cook School.

Working party

A working party was established with two chefs from the university caterers (CF & CF), a marketing manager (KR) and an academic (HM). The working party met for six months before and periodically throughout the Cook School.

Cook School format

A five session programme was chosen to fit in with the twelve week university semesters, with sessions running for two hours every second week throughout the semester. Sessions were timetabled for Wednesday evenings, when the canteen was quiet and no classes were scheduled. Maximum capacity was twelve

participants per programme, required to attend all sessions. Registration and attendance at the Cook School was free. Dishes to be produced were chosen by the working party for each session for their simplicity, taste, seasonality, cost and healthfulness. In each session a different healthy eating message/skill was focused upon (respectively healthy eating guidance; reducing sugar intake; low fat intake; protein and salt intakes; reading food labels). Participants did not know beforehand that part of each session would be spent on healthy eating activities; indeed pre-course evaluations identified 'cookery' as the main expectation of participants.

Each session included a hands-on cookery component led by the chefs. Participants cooked and prepared the dishes, and while the food was cooking, facilitators led a range of interactive activities they designed for each of the healthy eating messages. Each session was run by at least two trained facilitators and two chefs, and all sessions were supervised by an academic member of staff (HM).

Facilitators & training

Second and third year students on the BSc (Hons) Nutrition and BSc (Hons) Exercise Nutrition and Health degrees were eligible to facilitate. These volunteer facilitators completed two three hour mandatory training sessions developed, organised and delivered by academic staff (HM). The purpose of their training was: i) to ensure that all facilitators were familiar with each of the sessions and resources and ii) to encourage facilitators to develop activities for each healthy eating message, to enhance facilitator engagement in and learning from the Cook School. Those who completed the six hours of training were certified as facilitators and could sign up for whichever sessions they wished to facilitate.

Evaluation: Facilitators

Facilitators completed an evaluation form relating to their training which included qualitative feedback on the organisation, content and delivery of the training, whether it impacted upon their knowledge and confidence to deliver sessions and what they liked best and least as well as the opportunity to provide suggestions or additional comments.

Evaluation: Participants

Baseline and post programme evaluations of knowledge, current practice and confidence in cooking were carried out in the first and final sessions of each programme using short questionnaires. Qualitative and quantitative data were collected to evaluate enjoyment, learning, attitudes towards healthy eating and cooking, intentions relating to cooking, and attendance at sessions. Initial questionnaires used were standard Public Health evaluations used for community cook and eat programmes; however for the second Cook School, a university-specific evaluation form was used.

Results

Facilitators & Training

Ten students completed the six hours of training and were certified as Cook School facilitators. All facilitators stated that training had increased their knowledge, skills & confidence, and that there was sufficient time to become familiar with the cook and eat manual and to develop activities for each session. Training sessions, whilst structured, were informal in nature and facilitators were actively encouraged to develop their own ideas and activities, which they appreciated. Qualitative feedback reflected this:

[Trainer was] 'very accommodating, open-minded & informal'. (Facilitator 1)

[I liked the] 'informality & openness of the sessions'. (Facilitator 2)

[Sessions were] 'relaxed and informal, easy to ask questions'. (Facilitator 3)

Attendance at Cook School programmes

Two programmes were run, one in each semester of the academic year. Both programmes were fully subscribed (n=12 per programme). In total only one participant dropped out, due to difficulties managing his workload. Mean attendance was 77% and 92% respectively for Programmes 1 & 2. Although participant evaluations of both were excellent, the first programme finished when many students have coursework deadlines and consequently attendance was lower in the first than the second programme.

Participant evaluations: Knowledge

The majority of participants in both programmes demonstrated some pre-programme knowledge of healthy eating, and knowledge improved after the programme.

Common health risks associated with poor diet were identified. However links between unhealthy eating and cancer were poorly recognised in both cohorts (Table 1).

Programmes 1 & 2		
	Pre-course, n=23 Data expressed as numbers (%)	Post-course, n=20 Data expressed as numbers (%)
<i>How many portions of fruit & vegetables should we aim to eat each day?</i>		
Zero	0 (0)	0 (0)*
1-2	4 (17)	1 (5)*
3-4	2 (9)	0 (0)*
5+	17 (74)	18 (95)*
<i>List 2 health risks from eating an unhealthy diet</i>		
High blood pressure	4 (17)	5 (25)
High cholesterol	3 (13)	5 (25)
Diabetes	9 (39)	8 (40)
Obesity/weight gain	14 (61)	9 (45)
Heart problems	9 (39)	6 (30)
Recurrent illness	1 (4)	1 (5)
Cancer	0 (0)	1 (5)
Miscellaneous	0 (0)	5 (25)

Table 1 Pre and post course participant knowledge of healthy eating. (*One incomplete evaluation; n=19 for these responses.)

Participant Evaluations: Behaviours

The majority of participants in both programmes consumed 2-4 pieces of fruit and vegetables daily (Table 2). If this self-report accurately reflects habitual consumption, it suggests that knowledge of the recommendations is not matched by adequate consumption. More respondents reported eating 3-4 and 5+ portions of fruit and vegetables daily after compared with before the programme. The majority of participants in both programmes had eaten breakfast.

Participant Evaluations: Enjoyment & confidence in cooking

The majority of participants in programme 1 and all of those in programme 2 already enjoyed cooking at the beginning of the Cook School (Table 3). Changes in enjoyment post completion of the Cook School in programme 1 were unclear because of the smaller number of participants in that group that completed a post course evaluation. However, confidence in their ability to cook healthy meals varied. After completion of the Cook School the proportion

of participants in both cohorts who felt very confident increased while the proportion still lacking confidence fell in both cohorts.

Current cooking behaviours of participants

Participants in programme 2 were asked about their current cooking behaviours. Although 92% participants reported cooking prior to Cook School, this increased to 100% after Cook School. After completing the Cook School, increased numbers reporting cooking more frequently for themselves or others.

Participant expectations and learning

Participants expected to learn new cookery skills and experiment with new recipes. In addition, improved wellbeing, socialising with others, improving their diet and learning about healthy eating were all highlighted.

Post programme evaluations indicated that expectations of participants were met. All respondents enjoyed the Cook School (Table 4).

Programmes 1 & 2		
	Pre-course, n=23 Data expressed as numbers (%)	Post-course, n=20* Data expressed as numbers (%)
<i>How many portions of fruit did you eat yesterday?</i>		
Zero	2 (9)	3 (16)*
1-2	15 (65)	9 (47)*
3-4	5 (22)	5 (26)*
5+	1 (4)	2 (11)*
<i>How many portions of vegetables did you eat yesterday?</i>		
Zero	2 (9)	3 (15)
1-2	12 (52)	6 (30)
3-4	7 (30)	9 (45)
5+	2 (9)	2 (10)
<i>Did you eat breakfast this morning?</i>		
Yes	20 (87)	13 (65)
No	3 (13)	7 (35)
<i>If 'yes', where did you eat breakfast?</i>		
At a table	13 (57)	11 (55)
While walking	1 (4)	2 (10)
In front of the TV	1 (4)	0 (0)
At a computer	3 (13)	0 (0)
Other	2 (9)	0 (0)

Table 2 Participant self-reported pre and post programme dietary behaviours. (*One incomplete evaluation; n=19 for these responses.)

Programmes 1 & 2		
	Pre-course, n=23 Data expressed as numbers (%)	Post-course, n=20 Data expressed as numbers (%)
<i>Do you enjoy cooking?</i>		
Yes	22 (96)*	19 (95)
Unsure	0 (0)	1 (5)
No	0 (0)	0 (0)
<i>How confident are you cooking healthy meals?</i>		
Very	5 (22)	14 (70)
Okay	13 (57)	4 (20)
Not very	5 (22)	2 (10)

Table 3 Participant enjoyment and confidence in cooking pre and post programme. (*One incomplete evaluation; n=22 for this question.)

	Pre-course expectations of programmes 1 & 2 (n=23) Expressed as numbers (%)	Post-course experience of programmes 1 & 2 (n=20) Expressed as numbers (%)
What do you hope to learn/ did you learn from this programme?		
Improve my wellbeing	13 (57)	11 (55)
New cookery skills	23 (100)	19 (95)
Maintain a healthy weight	9 (39)	9 (45)
Experiment with new recipes	21 (91)	16 (80)
Socialise with others	10 (43)	11 (55)
Improve confidence	8 (35)	6 (30)
Understand how to eat a healthy diet	12 (52)	17 (85)
Improve diet	11 (48)	12 (60)
Unsure	1 (4)	0 (0)

Table 4 Participants expectations (pre-course) and experience (post-course) of engagement in the Cook School.

Themes & comments from sessions

Participants engaged in each session, which resulted in several interesting discussions. Knowledge was variable amongst the groups, which facilitators needed to take into account. Many participants had English as an additional language, so clear communication and simple explanations were required. Facilitators needed flexibility both in terms of timing and delivery of material. Activities were delivered while dishes were cooking, and the time available varied within and between sessions, so the timings of planned activities in some sessions needed to be modified accordingly. The most successful facilitators were flexible and able to improvise.

[Cook School helped me ...] 'Direct plans about my future career'. (Facilitator 1)

[Cook School helped me ...] 'Work with large groups'. (Facilitator 5)

[It is important to...] 'Be creative and make learning fun. It's not easy to get people interested'. (Facilitator 6)

[We were able to....] 'Create fun & interactive sessions that we and they enjoyed'. (Facilitator 9)

'Sessions were packed and time flew with a mix of activities'. (Facilitator 7)

'Topics were relevant to day to day life'. (Facilitator 2)

Feedback from facilitators

Motivation for involvement in Cook School

All facilitators identified 'good for my curriculum vitae' as a motivator; 80% wanted to gain experience, and 70% wanted to build confidence and liked learning new things. Half wanted to work in public health; additionally, half thought the Cook School sounded like fun.

When asked what words they would use to describe Cook School, 90% of facilitators described it as 'interactive, engaging & fun', 60% as 'informative and educational', 40% as 'social' and 30% as a 'great experience'.

Skills & competencies gained by facilitators

Key employability skills such as team work, time management, communication, creativity & organisational skills were identified as learning outcomes, shown in qualitative feedback from facilitators:

Discussion

This project aimed to empower participants with knowledge and skills to prepare healthy foods. Evaluations indicated that completion of the programme improved both. Strong themes of enjoyment and the social aspects of cooking and eating were highlighted. The majority of participants had not previously met, and students from three of the four university

campuses attended the Cook School, fostering friendships and enhancing the student experience.

A major motivation for developing the Cook School was to enable undergraduate Nutrition students to participate in a typical public health activity, gaining experience in applying their skills and knowledge to a 'live' situation, under academic supervision. The collaborative nature of the training sessions and the Cook School itself was positively highlighted by facilitators. Project-based learning is an important method of introducing students to authentic, real-life problems (Blumenfeld et al, 1996) and the provision of authentic and relevant learning situations helps to increase student motivation (Lombardi, 2007). Facilitator engagement in this project was high. Whilst very structured in terms of the healthy eating messages and cooking in each session, facilitators had wide latitude in how to deliver their messages using activities, and in many cases they developed new games and activities to engage participants. Therefore facilitators gained hands-on experience not only of delivering but developing a programme, experience likely to be invaluable for their learning and evidence of new skills and competencies. Involving learners, by allowing them to take ownership and responsibility for their own learning, and by facilitating a peer-learning environment are all useful educational strategies (Knowles et al, 2005). Such autonomy enhances intrinsic motivation (Froiland et al, 2012; Reeve & Jang, 2006), which improves learning (Deci et al, 1991; Deci et al, 1999; Gottfried et al, 2001; Forsyth & MacMillan, 1991), academic achievement and application of learning (Deci et al, 1991; Ryan & Deci, 2000; Froiland, 2011). The Cook School, by encouraging facilitators to actively contribute, epitomised some of the key principles underlying theories about effective learning.

Numbers of participants who identified 'learning about healthy eating' and 'improving diet' as programme expectations increased pre to post programme, demonstrating that the healthy eating activities and messages impacted upon them. The Cook School was advertised as a cookery programme. From the perspectives both of facilitators and participants, the healthy eating aspects of the

programme were successful. However whether this translates into long term improvements to eating behaviours cannot be ascertained on the basis of this pilot data.

The Cook School was a dynamic programme. Originally based on a community public health programme, it was altered to suit the university setting and reflect student needs. Facilitators and chefs were encouraged to debrief after each session, resulting in several changes to recipes and activities. This adaptation over time to real life implementation of the programme mirrors public health practice in which responding appropriately to change is essential. Being part of the decision-making about what elements needed to change and how was empowering for facilitators; 60% identified communication skills and creativity as skills they gained. Importantly these so-called soft skills are recognised as desirable graduate attributes by employers (O'Leary, 2016b).

There were some notable differences between the Cook School and a typical community cook and eat programme. Ten facilitators completed the training and a minimum of two were needed for each session. This meant that facilitators varied from one session to another. In terms of group dynamics, this presented potential difficulties; the same pair of facilitators did not necessarily work together in more than one session, so they all had to quickly adapt to working with different partners.

*'Working with a partner requires considerable preparation to produce educational and enjoyable sessions'.
(Facilitator 8)*

Facilitators met before each session to discuss their experiences and handover information to each other. This process required time management, organisational and communication skills. It also illustrated the benefits of peer learning (Boud et al, 1999) and its reciprocal nature (Boud & Lee, 2005). What was notable was that this drive to share information came from the facilitators themselves. This may reflect the extent to which they invested in their own learning, but the academic supervision of all aspects of the Cook School may have fostered this:

'HM made sure every session went smoothly & was in constant contact'.
(Facilitator 8)

'Lots of information available on running sessions'. (Facilitator 9)

To ensure that peer learning is effective, it has been suggested that the responsibilities of the teacher are to establish positive norms for group work, structure the task in order to support learning and understanding, model desired behaviours and to monitor group work (Webb et al, 2002). The teacher's part in creating the conditions for successful collaborative learning is central (Mueller & Fleming, 2001). In the case of the Cook School, facilitators themselves identified both the structure of the training they received and the informality of the training sessions as positive.

Cooperative work among students to achieve shared learning goals has been shown to benefit student achievement (Johnson et al, 2000). The overall success of the Cook School programmes resulted from five successful individual sessions and within each, both the cookery and healthy eating activity components needed to work well. Since facilitators worked in pairs, successful delivery of their healthy eating messages could only result from cooperative and collaborative work.

There were some unexpected additional benefits to the project. For example, the Cook School was shortlisted for a University Enterprise award in 2015. An excellent working relationship between catering and academic staff has resulted in the development of several other projects. A new student finance initiative, 'Money Matters' allied itself with the Cook School to reach students. Final year media students used the Cook School as the subject for a short film that helped to raise its' profile. It was also the subject of an article written by a final year journalism student as part of her coursework submission.

Conclusion

The Cook School was offered as a co-curricular opportunity and highly motivated facilitators invested the time and resources needed to make it work. The Cook School was

sufficiently successful and popular with both participants and facilitators that it is continuing to run. While the impact of facilitating the Cook School on the employability of facilitators remains to be seen, it offered them the opportunity to immerse themselves in a public health programme that mirrored some aspects of public health work in practice. From a pedagogic perspective, the Cook School represented authentic, active and peer learning.

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