Evaluating

Interprofessional Education:

A Self-Help Guide

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Higher Education Academy
Health Sciences and Practice Network
Foreword

The Health Sciences and Practice Subject Network applauds this guide as a timely addition to the growing literature on interprofessional education which has been given relatively recent emphasis in health and social work education in the UK. It is clear that there is a need for rigorous evaluation to determine the most effective methods for educational practice. Most educators do not have the time to delve into educational literature over and above their subject literature. A practical guide is therefore greatly welcomed. The guide also contains a glossary, which is an important feature especially in IPE where different disciplines use different terms. One of the barriers to IPE is that of the language used which this feature will help to overcome. Although the guide is set in the context of health and social care much of it is sufficiently generic to be of interest to people working in other fields of educational evaluation. In addition it is reassuringly realistic, as the authors try to ‘distinguish between the counsel of perfection and demands of reality in a busy teaching post’. We trust it will help us strengthen the evidence base of interprofessional education.

Professor Catherine Geissler, Director, Health Sciences and Practice Subject Network, The Higher Education Academy

We are pleased that the Higher Education Academy Subject Networks for Medicine, Dentistry and Veterinary Medicine and for Social Policy and Social Work have supported this guide as follows:

The Subject Network for Medicine, Dentistry and Veterinary Medicine of the Higher Education Academy is delighted to receive Evaluating Interprofessional Education: A Self-Help Guide. This is an invaluable and very timely resource aimed at enabling a wide variety of educators to make best use of and contribute to the evidence surrounding Interprofessional Education. The authors use a highly accessible style to present practical approaches illustrated with real examples, suitable for novices and experienced professionals alike. This authoritative work will be of benefit across the health sector enabling better understanding and delivery of Interprofessional Education.

Dr Megan Quentin-Baxter
Deputy Director, Subject Network for Medicine, Dentistry and Veterinary Medicine, Higher Education Academy

The Subject Centre for Social Policy and Social Work of the Higher Education Academy (SWAP) would like to congratulate the commissioners and authors of this guide. It is very timely as the call is strengthened for the sharing of good practice in learning and teaching to be underpinned by sound evidence. Attention to pedagogic methodologies is of particular concern to the social work academic community. In 2004 both the Social Care Institute for Excellence and the keynote speaker, Professor John Carpenter, at the Joint Social Work Education Conference 2004 focused on the challenge of ensuring that the sound qualitative research methods used outwith the university sector are equally used when holding up a mirror to ourselves.

Jackie Rafferty
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The authors, often known as JET (The Interprofessional Education Joint Evaluation Team), have worked together for several years reviewing the interprofessional education literature. Among other outputs, this work resulted in an earlier LTSN Health Sciences and Practice publication, *A Critical Review of Evaluations of Interprofessional Education* (2002) http://www.health.heacademy.ac.uk/publications/occasionalpaper/occasionalpaper02.pdf

Based on their review work and team members’ varied experience of developing, delivering and evaluating interprofessional education, the team has prepared two books for publication by Blackwell, in association with CAIPE:


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<th>Abbreviations</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADSS</td>
<td>Association of Directors of Social Services</td>
</tr>
<tr>
<td>BA</td>
<td>Before and after study</td>
</tr>
<tr>
<td>BERA</td>
<td>British Educational Research Association</td>
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<td>BPS</td>
<td>British Psychological Society</td>
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<td>BSA</td>
<td>British Sociological Association</td>
</tr>
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<td>CAIPE</td>
<td>UK Centre for the Advancement of Interprofessional Education</td>
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<td>CBA</td>
<td>Controlled before and after study</td>
</tr>
<tr>
<td>CHIME</td>
<td>Centre for Health Informatics and Multiprofessional Education</td>
</tr>
<tr>
<td>COREC</td>
<td>Central Office for Research Ethics Committees</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>IEPS</td>
<td>Interdisciplinary Education Perception</td>
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<td>IPA</td>
<td>Interaction Process Analysis</td>
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<tr>
<td>LREC</td>
<td>Local Research Ethics Committee</td>
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<td>LTSN</td>
<td>Learning and Teaching Support Network</td>
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<tr>
<td>MREC</td>
<td>Multi-site Research Ethics Committee</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
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<tr>
<td>PC</td>
<td>Personal computer</td>
</tr>
<tr>
<td>RIPLS</td>
<td>Readiness for Interprofessional Learning Scale</td>
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<tr>
<td>RCT</td>
<td>Randomised control study</td>
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<tr>
<td>SPI</td>
<td>Self-Perception Inventory</td>
</tr>
<tr>
<td>SPQ</td>
<td>Study Process Questionnaire</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<tr>
<td>SYMLOG</td>
<td>System for Multiple Level Observation of Groups</td>
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Glossary

**Action research** involves the researcher in working collaboratively with participants through cycles of evaluation and development to effect positive change in their relationships or practice.

**Before and after study (BA)** is a research design in which data are collected before and after an ‘intervention’, for example, interprofessional education.

**Content analysis** is a research tool used to determine the presence of certain words or concepts within texts. Researchers quantify the presence, meanings and relationships of such words and concepts to make inferences about the messages within the texts.

**Controlled before and after study (CBA)** is similar to a before and after study except that to help detect change more accurately, data are collected from a control group (i.e. the participants who do not take part in the intervention).

**Ethnographic research** is rooted in anthropology. It is a methodology that aims to understand the meanings associated with membership of different cultures and subcultures. Ethnographers attempt to gain an ‘insider’s point of view’, usually by collecting observational, interview and documentary data.

**Grounded theory** is a research method in which the theory is developed from the data, adopting an inductive (bottom-up) approach.

**Interpretativism** is a research philosophy which asserts that social reality is constructed from individuals’ interpretations of their world. It therefore rejects the notion of objectivity in research, aiming rather to obtain the researcher’s subjective understanding of their empirical findings.

**Interval data** are a type of data in which the distances between numbers have meaning, for example, the number of years a practitioner has been qualified.

**A longitudinal study** seeks to examine change by collecting data at temporal intervals over a period of months or years.
**Nominal data** are a type of data in which numbers stand for names but have no order of value, for example: ‘female = 1, male = 2’.

**Non-parametric statistical tests** make no (or very few) assumptions about the distribution of the underlying population from which sample observations have been drawn. Examples include the Wilcoxon Rank-Sum test, the Mann-Whitney U test, the Kruskal-Wallis test, Spearman Rank Correlation Coefficient.

**Ordinal data** are a type of data that ranks subjects in some kind of order, such as the scores on an attitude scale: ‘very positive, positive, negative, very negative’.

**Paradigm** refers to the way a discipline thinks about and organises the values, theories, concepts and evidence that create and define its way of viewing the world.

**Parametric statistical tests** make assumptions about the underlying population from which sample observations are drawn, most commonly that the population is normally distributed. Examples include Student’s t test, the F test in analysis of variance, the coefficient of determination ($r^2$) in regression analysis.

**Positivism** is a philosophy which asserts that truth about the world can be obtained by objective measurement of observation, experiment and comparison.

**Qualitative data collection methods** most usually collect experiences, interpretations, impressions or motivations of an individual or individuals, for methodologies that seeks to describe how people view things and why.

**Quantitative data collection methods** measure and quantify facts and their relationships, seeking to understand these relationships through statistical analyses of data.

A **Randomised controlled trial (RCT)** is a scientific test of the efficacy of an intervention which seeks to control for intervening variables by randomly allocating subjects into either an intervention group or a control group. It may be blind, double or triple blind depending upon whether the subjects, researchers or treatment practitioners have knowledge of the group (intervention or control) to which a subject belongs.
**Sampling** is the process of choosing a selection of ‘units’ or ‘cases’ (places, people, times, events, artefacts, etc.) from everything or everyone that might provide data and insights for an evaluation. It is necessary for efficient use of resources.

**Triangulation** is a technique for checking the integrity and sophistication of evaluation findings by examining data and interpretations from more than one vantage point. This may mean using more than one: evaluator, data collection method, data source, theoretical perspective, time point, or a combination of these. More trustworthy, comprehensive and complex insights should result.
Introduction

This self-help guide, commissioned through the ‘mini projects’ scheme of the Higher Education Academy Health Sciences and Practice Subject Network, contains ideas and resources on the evaluation of interprofessional education in the context of health and social care. Some of the content is nevertheless sufficiently generic to be of interest to people working in other fields of educational evaluation.

The guide is divided into four sections:

- **Section 1** outlines and discusses the principles of good practice in planning, conducting and disseminating an evaluation of interprofessional education.
- **Section 2** offers a critical discussion of a range of approaches employed to evaluate interprofessional education.
- **Section 3** discusses a selection of enquiry instruments that can be employed in the evaluation of interprofessional education.
- **Section 4** presents a selected bibliography of useful evaluation and research texts, examples of interprofessional education studies and a list of useful websites.

It is our intention that educators and evaluators (and in many instances you, our reader, may be taking both roles) will actively engage with the material in sections one and two during the process of planning and delivering an evaluation in a particular context. To encourage and ease this process we have left plenty of ‘white space’ for your personal notes and actions plans.
Aims of the guide

The guide has two aims:

- To help people wishing to evaluate interprofessional education to plan and conduct studies that are achievable within a given context and provide robust results.

- To provide an outline of key aspects of the evaluation process and direct readers to supplementary resources.

This guide does not provide detailed step-by-step instructions on how to conduct an evaluation. Our aim is not to direct you towards a particular evaluation methodology, or to advocate ideal methods of data collection and analysis. Rather, we set out to provide you with ideas, examples and some broad advice, all of which will contribute to your decision making about the approach and design of your evaluation. Educational evaluation is a broad church. It frequently provokes debate about how it should be designed and implemented. The approach you take will be highly influenced by, for example, the questions to which you want to find an answer, your local context, stakeholder demands and what human and financial resources are available for your evaluation.

In the first two sections we offer guidance on, and general frameworks for the evaluation of interprofessional education, informed by our work as educational, including interprofessional educational, evaluators and researchers. In sections three and four there are extensive suggestions for further reading and pointers to texts on appropriate literature on specific research methodologies and methods.
Why a guide on the evaluation of interprofessional education?

The need for the sound evaluation of interprofessional education has grown considerably over the last few years. This has been concomitant with an expansion in its provision in higher education institutions and by those with a responsibility for education and training within health and social care services. It is now a firm part of mainstream education at the pre-qualifying stage for many students in the health and social care professions. Once these students qualify and begin their practice it is more and more likely that they will participate in interprofessional education. This might happen during their studies for further academic or professional awards but it is most likely to be during workshops or on courses that contribute to their continuing professional development, or within a learning opportunity to enhance local service delivery.

We have found, through our systematic reviews of evaluations of interprofessional education (Barr et al., 2000; Freeth et al., 2002, Barr et al., 2005) that there is mounting evidence to show that it can produce positive results. However, it is essential to continue to provide evidence for its effectiveness and to increase the strength of that evidence. Some reported studies are poorly designed, for example, evaluations with methodologies that are unsuitable to answer the questions being asked. This wastes valuable resources and the opportunity to provide trustworthy and generalisable evidence for this important mode of learning.

You may be an experienced evaluator but, perhaps, new to the field of interprofessional education. If you are, you will have a very clear idea why you need some further guidance in your approach to the evaluation of this genre of teaching and learning. Alternatively, you may be an experienced educator and a novice evaluator, with the task of examining the effectiveness of the course you are delivering. Inevitably, if you are a teacher or evaluator of pre-qualifying courses in higher education, there will be many demands on you and your department. Regular assessments of teaching quality and the need for research output increase the need to develop a robust and useful evidence base.
We assume that you are primarily involved in providing the interprofessional education yourself: thus we try to distinguish between the counsel of perfection and demands of reality in a busy teaching post. Our hope is that this guide will help you to implement sound and practical evaluations that make a useful contribution to evidence-informed practice in interprofessional education.

**Organisation of the guide**

We present text in three formats:

1. main text discussing the key issues;
2. text boxes that highlight our main suggestions or points to consider;
3. points marked for you to ‘stop and think’.

**Working through the guide**

We suggest that, depending on your expertise and experience, there are different ways to use this guide. We have provided an opportunity for both the novice and the expert to find a suitable pathway for the preparatory thinking about, and the execution of, their particular evaluation as Table 1 explains.

You might like to use the last row in Table 1 to note down where you plan to start. Be sure to put the date and some details of the evaluation you are presently working on. This record may be useful when you return to the guide as you begin your next evaluation.
Table 1 Where to start using this guide

<table>
<thead>
<tr>
<th>Starting point</th>
<th>Section 1</th>
<th>Section 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are you?</td>
<td>A relative novice to evaluation</td>
<td>A relatively experienced evaluator</td>
</tr>
<tr>
<td>What are your learning needs?</td>
<td>Start here if your primary need is to think through the process of designing and conducting an evaluation of interprofessional education.</td>
<td>Start here if your priority is to consider the pros and cons of particular evaluation approaches, or you are seeking new ideas.</td>
</tr>
<tr>
<td>What are you going to do?</td>
<td>To evaluate a small scale interprofessional education intervention, e.g. a one day workshop in a service setting.</td>
<td>To evaluate a long-term educational endeavour, where the interest in process and outcome might determine the future shape of interprofessional provision.</td>
</tr>
<tr>
<td>So, where will you start for the evaluation you are presently working on?</td>
<td>Date: Evaluation ID: Notes:</td>
<td>Date: Evaluation ID: Notes:</td>
</tr>
</tbody>
</table>
Definitions

Interprofessional Education
A confusing array of terms is used to describe education events where practitioners from different professions learn together: common learning, multidisciplinary education, shared learning, etc. Sometimes these are used interchangeably and, on other occasions, they have very specific and private meanings that lack wider currency.

Throughout this guide, unless we are quoting the work of others, we use the term interprofessional education (IPE). We view interprofessional education as a planned intervention aimed at securing the goals of interprofessional learning and interprofessional collaboration so that service delivery can be efficient, effective and client-focused. Box 1 shows our definition of interprofessional education, derived from that proposed by the UK Centre for the Advancement of Interprofessional Education (CAIPE) (see the Useful Websites section)

Box 1 Definition of interprofessional education

Occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care.

For brevity, we refer to interprofessional education events as ‘courses’ simply as convenient shorthand for modules, workshops, work-based learning initiatives, etc.
**Evaluation and Research**
Evaluation and research exist on a spectrum and have blurred boundaries. Indeed Rossi and Freeman (1993: 5) combined the terms as shown in Box 2.

**Box 2 Definition of evaluation research**

“Evaluation research is the **systematic** application of social research procedures for **assessing** the conceptualisation, design, implementation and utility of social intervention programs. In other words, evaluation researchers (evaluators) use social research methods to judge and **improve** …”

The important words in the definition in Box 2 are underlined. They are: systematic, assess and improve. Accurate and careful description is an important part of the evaluation process, but it is not sufficient. Evaluators also make judgements and recommendations, based on their findings.

There are many forms of evaluation. Some important variations in approach, related to the aim and purpose of the evaluation, will be outlined further on in this section. From here on we mostly use the word evaluation rather than research in this guide. The word research is used when we discuss more general aspects of research and enquiry that embrace evaluation or we cite the work of others.
Section 1 Principles of good practice

1.1 Introduction

This section considers the key aspects of evaluating interprofessional education. Reliable, achievable evaluation projects begin with hard thinking that results in a clear conception of the journey ahead. Incisiveness at the planning stage saves time later, yields results of which you are proud and in which the community of practitioners in interprofessional education will have confidence.

1.2 Planning a sound evaluation

The process of planning a sound evaluation can be broken down into key areas to be addressed. These should not be compared to the sequential stages of the instructions as, for example, in a recipe. More often, many of these may be addressed in parallel, returning to each in cycles until the full evaluation plan emerges.

Your evaluation question and finding an answer to it are at the core of the planning process. With that decided the task is to use the most appropriate methodological framework for answering that question, given the purpose(s) the answer will meet, and to select the most suitable data collection and analysis tools for the job. All these choices are yours but they must be made with the evaluation question and its purpose at the front of your mind. During the whole process of choosing and implementing the framework and techniques for your evaluation other key areas need attention, including the prior literature on the topic, ethics and governance, dissemination of the work in progress and the results of the evaluation. It is also important to be vigilant about the role that you as an evaluator are taking within the process. These key aspects of evaluation are conceptualised in Figure 1 and each aspect is addressed in the following subsections.
1.3 Evaluation questions

Sound evaluations begin with the challenging process of teasing out a manageable list of relevant and answerable questions. To ensure relevance in the questions the evaluator needs to gain an appreciation of the context in which the evaluation will be conducted and negotiate the evaluation focus with all the appropriate stakeholders.
At this very early stage there are some important questions about the process of reaching decisions during the evaluation planning process. The first of these is most usually about the evaluation team and who else has a stake in the evaluation. Figure 2 summarises these and we have left some space around it for you to start noting down the answers that are appropriate to your particular evaluation.
Figure 2 Involving stakeholders in your evaluation

Will you be evaluating on your own?

If yes, where will you seek help to refine evaluation questions?

If no, how many, and which stakeholders, will be in the evaluation team?

In both these situations, how will you organise relevant meetings?
Returning to the evaluation questions, as we noted above, the aim is for questions that are relevant and capable of being answered. The answer(s), and there is often more than one, to the agreed evaluation question(s) will focus on processes and outcome associated with the evaluated interprofessional education. We show the range of outcomes that may be measured in Table 5 later. Here we want to give you a sense of the difference between:

- evaluation questions that are answerable (Box 3),
- diffuse or ambiguous questions that may result in a lack of focus in the evaluation (Box 4).

Perhaps take a moment to write down your embryonic evaluation questions (Box 5 has been provided for this purpose). Are they more like the questions in Box 3 or more like the questions in Box 4? How will you convert any that are diffuse into focused and well defined questions? For example, ‘How much did it cost?’ might become: ‘What were the year one costs in terms of staffing, materials and opportunity costs for the participating organisations?’

The reworking begins to show how big and ill-defined the original cost question was. It signals a complex evaluation requiring specialist expertise. This insight now has to guide the evaluation design and negotiations with stakeholders about what is really needed.
Box 3 Examples of answerable questions

Answerable questions include:

- What were learners’ end-of-course and three month follow-up reactions to the interprofessional education?
- To what extent did learners’ knowledge of the course content (or competence in addressed practical skills) improve between Time A and Time B?
- What auditable changes in practice or service delivery have occurred in the six months following the interprofessional education?
- What forms of interaction and decision-making could be observed within interprofessional problem-based learning groups?

Box 4 Examples of diffuse questions

Diffuse questions include:

- Did it work?
- Was it worthwhile?
- How much did it cost?
- What have we gained and lost?
For each answerable question a different conclusion could be reached, depending on how widely you ‘cast your net’ whilst gathering evidence. Very few evaluations are comprehensive. A focused study, producing knowledge and insights that aid improvement in specific ways, is a realistic and worthwhile ambition. The choice of evaluation questions is ultimately a pragmatic one, carefully negotiated with all the stakeholders and ultimately dependant upon what needs to be known about the outcomes of an interprofessional education intervention within its unique context.

So, for example, if your question is like number two in Box 3 it is your choice where the time intervals should be – Time A may be at the start and Time B at the end of educational input. Alternatively, or additionally, the latter can be repeated at intervals during and after the event. In the same way, you may choose different financial indicators than the ones given in the reworking of the cost question above. These choices are, ideally, the result of consensus amongst the evaluation team and the stakeholders.
For your evaluation you are likely to reach that consensus by:

1. asking the questions in Box 6, and

2. establishing a clear idea of the context of the evaluation you are going to conduct.

**Box 6 Key issues in defining evaluation questions**

- Who do I need to negotiate with?
  - Who are the key **stakeholders** and what are their interests in this specific instance of interprofessional education?
  - Who are the other **evaluators** and what are their interests and expertise?

- What **resources** are available for the evaluation?

- What is the allocated **timeframe**?

- What is the **purpose and scope of evaluation**?

Table 2 sets out some of the contextual factors of both a small and a large evaluation. The third column is for you to make some notes about the context of your evaluation and in the last column you could note how these will influence the shape of your evaluation.
## Table 2 Some factors that shape evaluation questions

<table>
<thead>
<tr>
<th>Factors</th>
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<tr>
<td>Stakeholders</td>
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<td>Evaluators</td>
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<td>Resources</td>
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<tr>
<td>Timeframe</td>
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<tr>
<td>Purpose</td>
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<tr>
<td>Small scale evaluation</td>
</tr>
<tr>
<td>Stakeholders</td>
</tr>
<tr>
<td>Evaluators</td>
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<tr>
<td>Resources</td>
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<tr>
<td>Timeframe</td>
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<tr>
<td>Purpose</td>
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</tbody>
</table>
1.4 Aims and purposes of evaluation

Lists of contrasting evaluation types or orientations can be found in a wide range of texts on research and evaluation methods. We have included some in the bibliography. Each is useful for certain circumstances and purposes. Three of the most important axes of difference in relation to the aim and purpose of an evaluation are shown in Table 3. All of these are useful when deciding which approach is appropriate for your needs. It may be fruitful to replace the central ‘or’ in the axes with ‘and/or’, since evaluations often have multiple aims and audiences.

Table 3 Some axes of evaluation

<table>
<thead>
<tr>
<th>Developmental (formative) evaluation</th>
<th>Or</th>
<th>Summative impact assessment</th>
</tr>
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<tbody>
<tr>
<td>And/Or</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Process focused</th>
<th>Or</th>
<th>Outcomes focused</th>
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<tr>
<td>And/Or</td>
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</table>

<table>
<thead>
<tr>
<th>For internal audiences</th>
<th>Or</th>
<th>For external audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>And/Or</td>
<td></td>
<td></td>
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</tbody>
</table>
Where should your evaluation lie on each of the axes in Table 3?

To guide your decisions you also need to ask yourself:

➢ What is my priority and/or that of my organisation?

➢ What do I feel confident to evaluate?

➢ How much can I achieve in the time available to me?

You might choose to conduct an evaluation for some of the possible purposes shown in Table 4, shaping exactly what you do according to the circumstances within your organisation and your own inclination and expertise. We are suggesting that novice evaluators restrict their ambitions while they gain experience, confidence and expertise through engagement with the evaluation process.
### Table 4 Some possible purposes for evaluation

<table>
<thead>
<tr>
<th>Evaluation purposes</th>
<th>Novice</th>
<th>More experienced evaluators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebration of success</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Accountability for resources</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>Impact assessment</td>
<td>limited</td>
<td>√</td>
</tr>
<tr>
<td>Efficiency assessment</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>Fine tuning</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Informing decisions on the roll-out from pilot projects</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Assessing transferability of programmes from one context to another</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>Learning about processes present in interprofessional education</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Identifying what aspects promoted or hindered learning</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Contributing to the body of knowledge</td>
<td>limited</td>
<td>√</td>
</tr>
</tbody>
</table>

**Others for your context**

Discussion of the aims and purposes of an evaluation can help to refine the evaluation questions and help to identify appropriate evaluation methods.
1.5 Governance and ethics

Evaluations must be conducted ethically and with due regard for the governance procedures operating in different contexts. People are the focus of education so nearly all educational evaluation is human-subjects research requiring ethical clearance. It is safe to assume that with few exceptions (see below) your evaluation will need to seek ethical clearance from an appropriate and relevant body established for that purpose.

The main purpose of ethical screening is to ensure that the people who contribute to evaluations are not distressed or disadvantaged by their participation in the evaluation process. However, the scrutiny of any education evaluation, as with all social sciences research, is not limited to the impact on the participants: it extends to the whole evaluation. This means that during the process of ethical scrutiny questions will be asked about the design of the study, data collection methods and analytical approaches. The main focus for these questions will be whether your evaluation design and choice of methodology and methods will provide results that are strongly related to your intended outcomes? It is not ethical to conduct an evaluation that would be wasteful of resources and particularly of participants’ time? In the following section we give some brief guidance about seeking ethical clearance, by setting out two key questions to ask about your evaluation.

**Q1: What audiences are you aiming for?**

There is unlikely to be a requirement to seek approval from a research ethics committee for routine course evaluation and development activities, such as feedback forms, for the purpose of continually improving the educational experience and effective use of resources; provided the information gleaned is restricted to an internal audience, e.g. resource managers, teaching staff and students. These management evaluations do not place data or interpretations in the public domain and their governance is a matter for the quality management systems of the host organisation. Nevertheless, routine management evaluations for quality improvement should be conducted respectfully and efficiently.
In most evaluations of interprofessional education you will want to share your successes with a wider audience and you may want to publish or present findings and interpretations that you believe contain useful messages for others in the field. For these evaluations you are highly likely to need to seek approval for your evaluation from a research ethics committee and also to register the evaluation with the research and development offices of participating organisations.

**Q2: What is the location of the interprofessional learning?**

Evaluations of exclusively **university-based** interprofessional education, seeking participation from students and university staff, would normally seek ethical approval for the evaluation from the relevant university committee(s) and comply with university requirements for project registration, monitoring and financial accountability. The website for each participating university should be searched for details of the required permissions and registrations.

Evaluations taking place in **practice settings** that involve health and/or social care staff or patients/clients require scrutiny by the relevant NHS Local Research Ethics Committee(s) (LRECs) or, for some large multi-site evaluations, scrutiny by one of the Multi-site Research Ethics Committees (MREC). For studies involving social services departments, ethical approval should be sought from the Research Group of the Association of Directors of Social Services (ADSS). The first point of contact for all ethics approval is now the Central Office for Research Ethics Committees (COREC) website. Here you will find the application form for ethics approval and be directed to the appropriate committee. Advice on local requirements should be available from the Research and Development Department of each NHS trust or social services department where you plan to conduct your work.

Finally, there is no research ethics code specifically designed for evaluations of interprofessional education, but relevant codes include those of the British Educational Research Association (BERA), the British Sociological Association (BSA) and the British Psychological Society (BPS). For further information on these organisations see useful websites.
1.6. What to evaluate? Understanding presage, process and product

How do you decide what you need or want to evaluate? Your interest could be wide-ranging or fairly narrow. However, at this point of decision making it is worthwhile stepping back and take an opportunity to reflect on the whole of educational enterprise.

Earlier in the discussion about defining evaluation questions we suggested that evaluators need to develop an understanding of the context in which they will be working. This means considering the format and objectives of the interprofessional education that they plan to evaluate, and its wider context and role. A useful method of approaching this is the 3P model of teaching and learning developed by Biggs (1993) and elaborated in the context of interprofessional education by Freeth & Reeves (2004). This model highlights all the elements constituting the educational experience, various factors shaping that experience and the relationship between them (see Figure 3).

Of course, whilst this model, in our view, seeks to be comprehensive, inevitably there might be other elements of interest to you or other stakeholders in relation to your particular educational intervention. It might be useful to note these down as the evaluation planning process proceeds, especially those that might be the focus of the evaluation output.
Figure 3 The 3P model related to interprofessional education

**Presage**
- Context
  - Political climate
  - Regulatory frameworks
  - Funding
  - Geography & demography
  - Learner numbers
  - Space and time constraints
  - Competing curricula demands
  - Management support
  - Relationship with other stakeholders, e.g. employers.

**Process**
- Approaches to Learning & Teaching
  - Uniprofessional, Multiprofessional or Interprofessional
  - Pre or post qualification
  - Formal or informal learning
  - Classroom or placement-based activities
  - Work-based learning
  - Distance learning
  - Compulsory or optional experience
  - Underpinning theory
  - Duration of experience
  - Assessment
  - Facilitation style
  - Visiting teachers
  - Team teaching

**Product**
- Collaborative Competencies
  - Attitudes
  - Knowledge
  - Skills
- Collaborative Working
  - Practice
  - Impact on client care

**Teacher Characteristics**
- Conceptions of learning & teaching
- Perceptions of learners
- Conceptions of collaboration
- Teachers’ expertise
- Enthusiasm

**Learner Characteristics**
- Prior knowledge, skills and attitudes
- Conceptions of learning and preferred approach to learning
- Conceptions of collaboration
- Competing learning needs

Source: adapted from Freeth & Reeves (2004)
1.6.1 Presage
These are influences and constraints on the design and delivery of the interprofessional education. In our experience, presage is rarely the subject of evaluation. However, working within the interpretive research paradigm, using qualitative data collection and analytical tools, it is possible to look in depth at the key presage factors for a particular interprofessional education intervention. These can then be mapped, thus enabling an appreciation of the realised delivery and impacts of the interprofessional education. Box 7 gives examples of some research questions involving presage factors that might be the focus of interest in an educational evaluation. Note that whilst these are very specific they are also open questions and their answers will be complex. The findings are most likely to be reported in a narrative form, typical of the reporting of research in the interpretive paradigm. In other words, the results will tell a story, derived from the evaluators’ understanding of the data within its own context. Evaluators should be alert to the influences of presage factors even if these do not take a dominant place in their evaluation.

Box 7 Potential evaluation questions with a focus on presage in an educational intervention

- Why was interprofessional education initiated in this particular organisation?
- What learner characteristics allow them to benefit from this approach to learning?
- Who, if anyone, championed the interprofessional education and how did this affect the planning and delivery of the education?
- What are the pressures that could/do inhibit effective delivery of the education?
- Where are the challenges to establishing interprofessional education as an accepted part of mainstream provision in this organisation and for these particular groups of learners?
- What tensions, if any, exist within the planning and delivery teams that might have an impact on the learners?
1.6.2 Process
Process within the 3P model is concerned with the delivery of the interprofessional education. A process evaluation would focus on interaction, decision-making, approaches to learning and teaching, levels of engagement and so on.

1.6.3 Product
Product within the 3P model is concerned with the outcomes of the interprofessional education. We have developed a classification of interprofessional education outcomes the evolution of which is described in Freeth et al. (2002:13-14).

Table 5 Classification of the possible outcomes of interprofessional education

<table>
<thead>
<tr>
<th></th>
<th>Reaction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reaction</td>
<td>Learners’ views on the learning experience and its</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interprofessional nature.</td>
</tr>
<tr>
<td>2a</td>
<td>Modification of attitudes / perceptions</td>
<td>Changes in reciprocal attitudes or perceptions between participant groups. Changes in perception or attitude towards the value and/or use of team approaches to caring for a specific patient/client group.</td>
</tr>
<tr>
<td>2b</td>
<td>Acquisition of knowledge and/or skills</td>
<td>Including knowledge and skills linked to interprofessional collaboration.</td>
</tr>
<tr>
<td>3</td>
<td>Behavioural change</td>
<td>Identifies individuals’ transfer of interprofessional learning to their practice setting and their changed professional practice.</td>
</tr>
<tr>
<td>4a</td>
<td>Change in organisational practice</td>
<td>Wider changes in the organisation and delivery of care.</td>
</tr>
<tr>
<td>4b</td>
<td>Benefits to patients / clients</td>
<td>Improvements in health or well being of patients / clients.</td>
</tr>
</tbody>
</table>
In general, an outcomes evaluation would focus on one or more categories within Table 5. For example, Banks & Janke’s (1998) evaluation of an interprofessional education session for nursing, occupational therapy, physiotherapy and social work students revealed that these participants both enjoyed the session (a level 1 outcome) and considered they had learnt about each other’s professional roles (a level 2b outcome). In addition, Bond’s (1997) action research study with team members based in general practice, showed that the team began working together in a more collaborative manner (a level 3 outcome).

Other examples of the variety of outcomes that have been reported in interprofessional education evaluations include:

- Falconer et al. (1993) who report improved patient satisfaction and reduced length of patient stay (a level 4b outcome),
- Kristjanson et al. (1997) who report development of closer collaborative relations between participants (a level 3 outcome),
- DePoy et al. (1997) who report improved attitudes towards other professional groups (a level 2a outcome).

If the 3P model appeals to you then you might like to ask some key questions, shown in Table 6, about the way forward for your evaluation.

Evaluation approaches that are well suited to addressing all three areas of the 3P model (presage, process and product) include realistic evaluation (Pawson and Tilley, 1997) and action research (e.g. Reason and Bradbury, 2000; Hart and Bond, 1995).
### Table 6 Using the 3P model to plan an evaluation

<table>
<thead>
<tr>
<th>Key questions</th>
<th>Answers for your evaluation study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What aspects of the interprofessional education am I interested in finding out more about?</td>
<td></td>
</tr>
<tr>
<td>2. Which category in the 3P model do these fit into?</td>
<td></td>
</tr>
<tr>
<td>3. Do I want to learn about:</td>
<td></td>
</tr>
<tr>
<td>- The context of learning (presage)</td>
<td></td>
</tr>
<tr>
<td>- Its processes (process)</td>
<td></td>
</tr>
<tr>
<td>- Its outcomes (product)?</td>
<td></td>
</tr>
<tr>
<td>4. How much do I want to know about their relationship?</td>
<td></td>
</tr>
</tbody>
</table>
1.7 The role of the literature

Taking note of existing literature is very important. The insights and developments of those that precede you can be of benefit to the process and outcomes of your evaluation.

Literature searches normally focus on two aspects of an interprofessional education evaluation, so your task is:

1. Finding out about what is known about the particular form of interprofessional education that interests you, probably focusing on care and education delivery contexts that have resonance with your own,

and

2. Locating literature to deepen your understanding of relevant methodology, evaluation methods, analytical tools and analytical concepts.

There are exceptions to when it is useful to have a sound knowledge of the literature. Most notably in grounded theory studies, it is desirable to avoid over-familiarity with earlier studies but still necessary to have an overview of the field in which you intend to work. Strauss & Corbin (1998) argue that it is, in any case, impossible to follow a counsel of perfection and approach the field of study with a clean slate. It is inevitable, especially if you are an in-house evaluator, that you will be familiar with the key arguments and literature sources.

If your evaluation is intended for external audiences via publication, it is normally important to review the relevant literature to ensure that your work adds something new to the cumulative knowledge base about interprofessional education.

For an in-house evaluation it is still important to have access to other evaluations. In this way you can compare and contrast what others have found with results from your own setting, for example, the relationship between different context factors and outcomes. Such comparisons help to guide future developments and allow you to reflect on the process of evaluation as well as its findings.
1.7.1 Finding relevant literature: databases

The most efficient and effective way to find literature for your evaluation is to use one or more of the electronic bibliographic databases that contain research undertaken in health and social care. For example:

- Medline focuses on medically orientated research,
- CINAHL focuses on nursing and allied health professions orientated research,
- ASSIA focuses on health and social sciences research.

Use of these databases relies on inputting key words. Examples of key words related to interprofessional education are shown in Table 7. There are many more. Your final list for your particular literature search needs to match the type of interprofessional education in which you are interested as closely as possible.

Table 7 Key words for interprofessional education literature searches

<table>
<thead>
<tr>
<th>interprofessional</th>
<th>education</th>
<th>course development</th>
</tr>
</thead>
<tbody>
<tr>
<td>multiprofessional</td>
<td>training</td>
<td>guideline development</td>
</tr>
<tr>
<td>interdisciplinary</td>
<td>learning</td>
<td>continued professional development</td>
</tr>
<tr>
<td>interagency</td>
<td>teaching</td>
<td>service development</td>
</tr>
</tbody>
</table>

Key words vary between databases. For example, searching for ‘shared learning’ may be effective in one database, while searching for ‘multidisciplinary education’ may be more effective in another. You will find it useful to look for the key words in papers that you have already identified as relevant, to help provide search terms for electronic database searches. Key words are usually listed just after the abstract on the front page of a paper.
Don’t forget to use the **wildcard** facility within the database search engines to search efficiently for different word endings and to overcome differences between English and American spellings. For example searching for ‘education$’ (where $ is the wildcard for that particular database) will locate all the instances of the words education, educational, educationalist, educationist and so on.

Another aspect to effective searching is to decide when to search **for particular phrases**, such as ‘interagency training’ and when to ask for instances where the words ‘interagency’ and ‘training’ are near to one another within a document. Your library staff should be able to offer, or direct you to, training in advanced literature searching.

### 1.7.2 Finding relevant literature: other sources

Depending on your need for comprehensiveness you might consider other avenues:

- reference lists in relevant papers to help expand the search,
- hand searches of relevant health, social care and education journals, newsletters and web sites as not all the relevant documents will be found through searches of bibliographic databases,
- approaching colleagues working in the same field for unpublished reports (often called the grey literature).

Further information on the how to search the literature can be found in the general research text books included in Section 4.2.

Finally, just like most other aspects of evaluation work, searching the literature is more effective if you take some time to plan the task. Table 8 shows three key questions to answer before beginning a literature search, with space for you to note answers relevant to your present evaluation work.
Table 8 Key questions to guide a literature search

<table>
<thead>
<tr>
<th>Key questions</th>
<th>Your answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can you identify key words relevant to your work?</td>
<td></td>
</tr>
<tr>
<td>What databases will you need to use?</td>
<td></td>
</tr>
<tr>
<td>How extensive will your literature search need to be?</td>
<td></td>
</tr>
</tbody>
</table>

1.8. How to evaluate?

The remainder of this section of the guide looks at aspects of evaluation where you have to make some important choices, for example, choosing appropriate methodologies and suitable methods for data collection and analysis. We also discuss your own role as the evaluator in the process. We conclude by offering thoughts on the final stages of any evaluation project – the dissemination.
1.8.1. Paradigms, methodologies and methods

Our comment on evaluation paradigms, methodologies and methods is brief. More detailed descriptions of these are available from a wide range of sources, varying in level from the broad sweep of introductory texts to highly specialised resources. Many are included in the bibliography (Section 4.2). We offer a map that will allow you to navigate through the diverse approaches and to arrive at a decision appropriate to your evaluation. Firstly, what is the difference between research paradigm, research methodology and research methods?

Research **paradigms** describe the social world of an evaluation. Someone working in the positivist paradigm will see connections between the different elements or features within the world studied that are predictable and measurable. Implementing a controlled before and after study (CBA) to test a hypothesis would fit this way of thinking. In the interpretive paradigm the evaluator’s interest is to delve deeper, usually into a new territory which is relatively little known. The evaluator accepts that no single interpretation by the stakeholders or the evaluators is correct. There are different understandings of the same phenomena. An ethnographic study would fit here. In the change paradigm the evaluator is part (to a greater or lesser extent) of the team delivering the intervention and the emphasis is on a partnership approach to changing practice, on linking theory with practice and development. Action research and appreciative enquiry are often used in this paradigm.

A **methodology** is a theory of how an inquiry should proceed. It analyses assumptions, principles and procedures; defining, for example, what forms a researchable problem, what constitutes legitimate evidence and explanation and how generalisability should be viewed. Sometimes, the paradigms and methodologies are confused with, or even substituted for, another set of labels used for research, namely quantitative and qualitative data collection methods. Most of the data collected for studies in the positivist paradigm are quantitative. However, within the interpretive and change paradigms a mixed methods approach may be the optimal way of answering the research questions.
**Methods** can be thought of as tools, procedures or techniques. Common evaluation methods include questionnaire surveys, documentary analysis, participant observation, clinical trials, clinical audit, semi-structured interviewing and so on. Whilst particular clusters of methods tend to be used within particular methodological approaches, there is no strict correspondence between method and methodology. In Section 2, we look at the range of evaluation designs that represent main groups identified in our reviews of the evaluation literature for interprofessional education (Freeth et al., 2002). Section 3 looks at some of the specific data collection instruments used within interprofessional education evaluation.

**Mixing and matching.** You might find it useful for your evaluation to draw on methodologies in more than one paradigm. It all depends on what question requires an answer and how best to enrich your understanding of the situation studied. Likewise, using different methods of data collection and data analysis (even of the same data) provides a more comprehensive picture that would not otherwise be available. Triangulation in all its forms prevents a one sided view and helps to guard against bias in design and data analysis.

During the planning of an evaluation of interprofessional education you might want to consider systematically questions outlined in Table 9. We suggest that time spent on reflection at this stage will be repaid many fold by avoiding confusion and lack of clarity clouding the evaluation process later on.
Table 9 Key questions for evaluation design

- What questions do you want [or need?] to answer?
- What is your emergent design?
- What are your plans for analysis?
- Do these plans contain implicit methodological assumptions?
- What kind of answers do you expect to emerge?
- Are all of your questions and aspects of design necessary?
- Are there any contradictions present?
- Do you expect to cover all the angles essential for your work?
- Are you moving towards methodologies in the positivist, interpretive or change paradigms?

Now you can return to your evaluation question(s) and

- ask whether your chosen methodology is appropriate to address your questions

Then

- examine your chosen methods to check their fit with the evaluation’s question(s) and methodology.
1.9 Position and influence of the evaluator

Regardless of the methodological approach or specific research methods, evaluators need to acknowledge their own influence on evaluations of interprofessional education. The choices you make about paradigm, methodology and methods will all influence your evaluation.

In the positivist paradigm, with deductive, hypothesis-testing studies, the main evaluator influence is in the framing of the evaluation questions and identifying the contexts or populations to be studied. In the interpretive paradigm, with illuminating or hypothesis-generating studies, the evaluator becomes immersed in the data to produce an inductive, synthesising interpretation of the data set. They are the main interpretative instrument. In both these paradigms the evaluator influences the boundaries of the study, the evaluation design, data collection methods and approach to data analysis.

In the change paradigm the evaluator works collaboratively with participants through cycles of action and enquiry: planning, guiding them through and evaluating any subsequent changes as a result of the action. We would argue that this design is particularly suitable for a teacher wishing to evaluate the course he or she is involved in. Action research (Reason and Bradbury 2000; Hart and Bond 1995) can illuminate very effectively the internal landscape of the interprofessional education from multiple perspectives. It is effective at enabling and supporting changes to the course or the wider organisation within which it takes place. We return to this later in Section 2.10).
1.9.1 Insider and outsider positions

It is useful to ask yourself about your position as the evaluator. Are you an in-house (insider) or external (outsider) evaluator? Each position has advantages and disadvantages.

Those who develop and deliver interprofessional education often also evaluate the intervention. **Insider** evaluators benefit from extensive knowledge of the history and context of the interprofessional education intervention, but may find it difficult to stand back from the data and interpret it from a variety of perspectives. Insider evaluators may also suffer from a lack of allocated time and other resources specifically allocated to evaluation. The imperatives of delivery will always override the desirability of systematic evaluation. However, insider evaluators are well placed to feed evaluation findings into course development. Further, their reflections on their own role, assumptions and reactions to the complexity of the teaching situation will be not only illuminating in their own right, but will also promote individual professional growth.

In contrast, **external** evaluators will have earmarked time and other resources. They may find it easier to view the intervention from various viewpoints and to obtain more candid data from participants. However, they will have to work at developing an understanding of presage and process. There will be a delay before external evaluation findings are disseminated and begin to influence development and delivery. Sometimes external evaluators’ comments and conclusions might be given a greater weight because they are seen as more objective, impartial or authoritative.

1.9.2. The Hawthorne Effect

The Hawthorne Effect (Mayo 1952) is a term used to describe a phenomenon where the presence of the evaluator positively changes research participants’ behaviour. (This phenomenon is also known as ‘researcher reactivity’) Assessing the impact of the Hawthorne Effect on an evaluation is difficult, but evaluators need to acknowledge its potential presence in their work.

In contrast, it has been argued that where an evaluator does become involved with participants for longer periods of time, for example, undertaking observations of students on an interprofessional course for several months, altered behaviour tends to revert back to normal behaviour (Becker 1970).
How is your evaluation likely to influence the interprofessional education that you seek to evaluate? How might you maximise the positive influences of the evaluation and minimise its negative influences? Are you able to play to the strengths of a combination of insider and outsider evaluator perspectives in your local context?

1.10 Expertise

Your expertise as an educational evaluator is another key consideration. Experience from previous evaluation work may mean you feel able to undertake a leading role in an interprofessional education evaluation. However, as a first-time, or relatively inexperienced, evaluator the thought of leading such work may seem daunting. If so, do approach more experienced colleagues for advice and assistance. Consider limiting your evaluation to one or two clear and answerable questions. Choose an evaluation design and methods with which you feel comfortable. Try not to collect too much data and view the evaluation as the first in a series rather than something that will produce the definitive answers to everyone’s questions.

Regardless of your expertise, it is worthwhile to consider any engagement in evaluation as an opportunity to learn new skills and/or to learn to work in a new context.

Assembling or joining a team with varying levels and fields of evaluation expertise can be supportive and creative, unless the breadth of interests leads to conflict or a lack of focus.

1.11 Resources

Another key aspect to undertaking an evaluation of interprofessional education is consideration of the resources available for the work. Time, money, access and equipment are central to planning within resource constraints.
1.11.1 Time and money
Finding time and money for evaluating interprofessional education can be a particularly thorny issue. Very often, evaluation of interprofessional education is undertaken without specifically earmarked resources: as an adjunct to curriculum development activities. This frequently applies to small-scale formative in-house evaluations and to work done by novice evaluators. However, this is unsatisfactory for the longer-term and larger-scale work needed to chart multi-levelled change in complex environments. Adding the evaluation of interprofessional education to course developers’ or tutors’ existing workloads creates conflicts of interest and necessitates the juggling of evaluation time and tasks with other equally important commitments.

With or without earmarked evaluation funding, it is all too easy to underestimate the amount of time required to locate and understand a sufficient amount of the existing literature, hone evaluation questions, select an appropriate methodology and methods, locate or develop research instruments (e.g. questionnaires, interview schedules), secure ethical approval, collect data, analyse and interpret, write up findings then disseminate and make use of these. Rushed planning, mistimed data collection, scant analysis and cursory dissemination or superficial action planning can represent wasted time and money. It is important to match the evaluation plan to the time and money available, limiting the number of questions addressed and the amount of data collected.

Resources for formative evaluation of interprofessional education initiatives should be included in the basic costing of each initiative. Evaluations that are likely to yield generalisable findings may be funded via competitive application to research and development grant programmes. Your local research and development office should be able to provide advice on grant givers and alerting services for calls for applications. The websites of the relevant Higher Education Academy subject centres also provide advice on obtaining research or evaluation funds (see Section 4.5).
1.11.2 Access to people
Assessing and negotiating access requirements are part of evaluation planning. If you wish to collect data from students, patients or clients there will be several gatekeepers who will have to agree to allow you access to ‘their’ students, patients or clients (e.g. senior tutors, programme leaders, consultants, general practitioners, lead practitioners, managers of clinical areas or care settings). Normally such negotiation has to precede gaining ethical approval for your evaluation, since evidence of support from key gatekeepers will be sought.

1.11.3 Access to documents
Even if the evaluation is planned to make use of documentary evidence, rather than data collected from direct contact with the beneficiaries of interprofessional education, negotiating access to key documents may be a lengthy process. Where it exists, anonymous archive material may be straightforward to access but you may also need access to individual records compiled for other reasons. Mechanisms for extracting evaluation data from individual confidential records need careful planning, negotiation with gatekeepers, ethical approval and, usually, procedures for obtaining consent from those to whom the records refer.

1.11.4 Equipment and software – their place in evaluation
There is a range of specialist research equipment and software that can be purchased to support your evaluation work. This equipment falls into three broad categories: data collection, data analysis and writing up.

Aids for data collection

If you are intending to collect interviews (and here we mean semi-structured or unstructured interviews) or observations, you need to consider obtaining recording equipment. While you can record these data manually in the form of notes, greater accuracy and richness can be obtained by using electronic recorders (audiotape, minidisk or, less commonly, videotape). With observation data, you might have to rely on contemporaneous or subsequent field notes, depending on the design of the study and the degree of your participation (Adler and Adler, 1994). For example, as a fully participating observer it might be difficult to keep notes and recording might be an essential adjunct to your work – assuming, of course, that you have permission to record.

Minidisk recorders are becoming popular among evaluators with their small size and better (digital) recording quality. These can link with specialist computer software such as
Annotape, to record directly on to your desktop or laptop personal computer (PC). This has the advantage of storing all your data where it can be quickly accessed for analysis. However, as storing audio data on a PC is resource hungry, you may need to upgrade the memory capacity of your computer.

Once you have collected your interview data, it will need to be transcribed in preparation for analysis. The traditional approach of transcribing interviews is by listening to the tape and writing (either verbatim or in parts) a text-based ‘script’ of the interview. While this takes time, it ensures that an accurate account of the interview is obtained. Voice recognition software can speed up the transcribing process but careful checking of the computer-generated transcript is needed to ensure accuracy.

Video recording may be viable in environments where fixed cameras and microphones are available, or relatively static action can be captured with a portable camera, hand-held or mounted on a tripod. Participants often find video cameras more intrusive than audio recorders; so benefits and losses associated with obtaining a visual record need to be carefully weighed. Transcribing video data is a very lengthy and, therefore, costly process.

Documents and questionnaires are other sources of data, for example, patients’ records where the data could be numerical, such as length of stay, or qualitative, such as clinician’s reasons for altering previously agreed plan of action. If you are obtaining documents you will need to consider obtaining an electronic copy or scanning to create one. This can ease analysis by facilitating electronic searching and linking. While the traditional approach with questionnaires has been the use of paper-based versions, increasingly evaluators are collecting data through electronic questionnaires via the Internet. Well-designed electronic questionnaires present only those questions that are relevant in the light of earlier answers and can generate alerts when a respondent skips a question. Web-mounted questionnaires can be completed at any time or in any convenient place but response rates can be low and expertise is needed to use the software to create and upload them. For further information see, for example, Hewson et al. (2002).
Aids for data analysis

The analysis of anything other than a very small amount of data is greatly aided by appropriate software. Quantitative data may be summarised with a spreadsheet such as Microsoft Excel, but statistical modelling and testing requires specialised software. Statistical Package for the Social Sciences (SPSS) is widely used for analysing quantitative data. It will process interval, ordinal and nominal data, using parametric and non-parametric statistical methods. Graphs and tables can be produced for export into reports and presentations. There are many other similar statistical packages each having advantages in particular circumstances. There may be a software advisory team in your organisation from whom you can obtain advice. In addition, informal networks are useful sources of advice on these matters.

A number of computer software guides are available to help with the analysis of qualitative data, including Atlas Ti, Ethnograph, NUD*IST and NVivo. These facilitate the linking and comparison of multiple documents, coding (and thereby linking) of passages within documents and, often, diagrammatic representations of the coding structure. They allow for recording of various memos that help to keep track of your thoughts as you progress through the analytical process.

It takes time to learn to use these software packages effectively. Manual methods of analysis may suffice for small projects, or indeed be desirable if you are more of a novice evaluator or wish to experience in some detail the analytical process by in-depth immersion in data. In Section 2 we offer suggestions to some key texts on qualitative research. However, to illustrate the range of advice available for qualitative data analysis, we would mention two sources that offer contrasting degrees of sophistication. There is the very straightforward guide by Burnard (1991), or the more complex text by Strauss and Corbin (1998) who offer a very detailed description of the analytical process necessary for most qualitative data.
Aids for organising literature and writing-up

Bibliographic software such as Reference Manager or EndNote provide a helpful database to store and retrieve details of publications that you cite in any report of your evaluation.

Choosing and obtaining the resources you need for a successful evaluation is a less daunting task if it can be broken down into exactly what you need in your situation. Table 10 provides a summary of the possible resources you might need and space for you to note down something about how you might get these, when they will be needed and anything relevant to your particular context.
## Table 10 Key questions about resources for your evaluation

<table>
<thead>
<tr>
<th>Ask yourself</th>
<th>Your answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Can you assess how much time you need?</td>
<td></td>
</tr>
<tr>
<td>- Where will you find it, if you are an ‘in-house’ evaluator?</td>
<td></td>
</tr>
<tr>
<td>- Do you need specific funding?</td>
<td></td>
</tr>
<tr>
<td>- Where will it come from?</td>
<td></td>
</tr>
<tr>
<td>- Have you got agreement for both time and funds from relevant stakeholders?</td>
<td></td>
</tr>
<tr>
<td>- What data sources will you need?</td>
<td></td>
</tr>
<tr>
<td>- How will you obtain an access to these?</td>
<td></td>
</tr>
<tr>
<td>- How will you sample the sources?</td>
<td></td>
</tr>
<tr>
<td>- What additional training might you need?</td>
<td></td>
</tr>
<tr>
<td>- What equipment will you need to obtain?</td>
<td></td>
</tr>
<tr>
<td>- Have you matched the methods of data collection and data analysis with the relevant equipment or software?</td>
<td></td>
</tr>
</tbody>
</table>
1.12. Reviewing and re-planning

We have stressed the importance of sound planning before an evaluation gets underway but this cannot be regarded as the end of planning activities. The real world is an untidy and unpredictable place to work. You may not be able to complete your evaluation according to the original blueprint. Regular reviews of progress are important. Reviews are sometimes done in partnership with a steering group with the members acting as critical friends. For smaller evaluations an appointed mentor may take this role.

Unforeseen events or unexpected initial findings may make re-planning advisable. Don’t forget that if a substantive change is made to the evaluation protocol you will need to submit the revision to the relevant ethics committee(s) (see Section 1.5) for their approval before implementing the changes.

1.13 Dissemination

There is very little point in evaluating your interprofessional initiative and not telling anyone what you found out. Include dissemination in the initial project planning and aim to start early. Sharing plans and emergent findings forces you to appraise your own progress and to crystallise your thoughts in order to feel prepared to explain to others. This is very valuable for the ongoing evaluation. Including dissemination in the initial plan will also ensure that this aspect of your work is allocated sufficient time and other resources.

In the case of an in-house formative evaluation, you will probably only disseminate findings to the participants and to those responsible for the ongoing development or funding of the initiative. If dissemination seems too grand a word, think of it in terms of providing timely, constructive feedback. However, many evaluations have audiences beyond those directly involved with that particular initiative and findings will be disseminated in presentations, in printed articles and on web sites. (N.B., remember the need to obtain ethical approval for human subjects research, see Section 1.5).

Sharing the findings from your evaluation, successes and failures, provides participants, managers, employers, funders, curriculum developers, tutors, clinicians and your fellow evaluators with important information about the effectiveness of an interprofessional education initiative. It can also provide these stakeholders with insights into how they might achieve success whilst avoiding the pitfalls you may have encountered.
As well as sharing the outcomes from your work, another important element of dissemination is to provide details of your evaluation process. This information allows insights into how you set up your evaluation, collected and analysed data. It allows readers to judge the quality of your work and may spark ideas for future work.

There are a number of different types of dissemination you may wish to consider:

- local dissemination (feedback) – particularly for formative, in-house evaluations,
- national or international conferences (poster or paper) – these are useful arenas to discuss early work in progress, later to get peer feedback on outcomes and to seek partners for follow-up studies,
- short reports in magazines or journals read by those you wish to inform and influence – these are particularly useful for publicising new studies and for directing readers to a more lengthy report,
- peer reviewed papers or book chapters – these will remain accessible for many years,
- website and on-line reports – these can provide rapid, easily updated, low cost access to the developing understanding of an evaluated programme. Feedback can be sought from those who access the site.
1.14 Checklist

The checklist below summarises important issues and actions you need to have addressed in planning and undertaking your evaluation. Perhaps take a few moments to review your current evaluation and identify any oversights. Is any remedial action required? Would a sharper focus or a change of emphasis help?

1. Development of evaluation question(s) – have you developed question(s) for the intended evaluation that you feel are answerable (in relation to your expertise, time and financial restrictions)?

2. Do you understand enough about the context (Sections 1.6 and 1.7) to select an appropriate methodology and suitable evaluation methods, and then compile an achievable evaluation plan?

3. Have you calculated the resources required to implement the evaluation plan? Can you ensure adequate resources are available (or re-plan)? This may require competitive application to a grant awarding body and an inevitable delay to the start of your evaluation.

4. Have you ensured that you comply with all relevant research governance requirements (e.g. ethical committee approval, registration of project)? Always aim for good practice in the conduct and dissemination of your evaluation.

5. Do you regularly review progress and, when necessary, re-plan?

6. Can you disseminate findings throughout the life of the evaluation, using styles of communication appropriate to each stakeholder?
Section 2: Studies of interprofessional education

2.1. Introduction

This section of the guide highlights a variety of evaluations of interprofessional education. These evaluations have been selected to provide insight into the range of evaluation designs that have been employed to study interprofessional education. Reflection on the content of this section may help you to refine your plans for evaluation in your own context. Note that it is possible to use a range of either (or both) qualitative and quantitative data collection methods within the evaluation designs presented in this section.

If you are starting this guide at Section 2, we recommend a short diversion to sections 1.3 on evaluation questions, 1.4 on aims and purposes of evaluation and 1.8 on how to evaluate. This will help to ensure that you are fully aware of the key foundation issues associated with interprofessional education evaluation.

2.2 Post-course evaluations

A popular design for the evaluation of interprofessional education is the post-course evaluation, where data collection occurs at the end of a course. Typically, a self-developed questionnaire is employed (we will say more about this in Section 3), although interviews can also be used. Questionnaires usually comprise a range of closed and open-ended questions to elicit both numerical and text-based data.

The main advantages of this design are that it is inexpensive, straightforward and quick to conduct, and often achieves high response rates. This is largely because: there is only one point of data collection; participant investment of time and emotion is relatively small; contacting potential participants presents few problems; and the type of data collected can be processed reasonably quickly, often with the aid of widely available software (e.g. Excel, SPSS and word-processing packages).
A useful example of a post-course design is offered by Banks and Janke (1998) in their evaluation of a short interprofessional education session for nursing, occupational therapy, physiotherapy and social work students. The aim of the session was to develop students’ understanding of one another’s professional group through discussion and role-play activities. By using a post-course questionnaire, the evaluation revealed that students enjoyed themselves and felt that they had learnt more about the other students’ professional roles.

Guest et al. (2002), Doyle et al. (2003) and Johnson (2003) provide other examples of how this design has been used to evaluate an interprofessional course.

However, a post-course design is a 'weak' evaluation. As there is no collection of baseline data, it is difficult to account convincingly for reported change relating to an interprofessional course. If, as is frequently the case, data collection occurs in the final session of an interprofessional course nothing can be said about longer-term impact in the context of ongoing professional practice or study. Indeed, short post-course questionnaires often devised for these studies are sometimes disparagingly described as happy sheets because they capture little more than participants immediate reactions to a learning experience.

2.3 Before and after studies

Another popular approach to the evaluation of interprofessional education is the before and after (BA) design, where the evaluator collects data shortly before and shortly after an interprofessional learning opportunity. Again, the use of questionnaires and/or interviews is commonplace.

This approach is more robust than a post-course evaluation. It detects changes resulting from an interprofessional course more accurately as there is data collection at two points in time: before and after the course. For numerical measures or ranks, if possible, obtaining ‘paired data’ (where an individual’s pre-course response can be linked to their post-course response) permits the use of statistical tests that are more powerful than statistical tests for unpaired data. The close proximity of data collection to the delivery of the course makes tracking participants easier than it is in studies having a longer duration so response rates usually remain high.
Mires et al. (1999) provide a helpful illustration of a before-and-after study that evaluated a short interprofessional course for 141 medical and 35 midwifery students. The course aimed to improve attitudes and knowledge of working together within an obstetric setting and consisted of one lecture, three problem-based learning sessions, a two-hour clinical skills session and a two-hour seminar. By using a questionnaire distributed before and after the course, the evaluation found improvements in attitudes of students to one another and knowledge of each other’s professional role and contribution to care.

Other examples of BA evaluations are offered by Fallsberg and Wijma (1999), Nestel et al. (2002) and Tunstall-Pedoe et al. (2003).

Despite gathering data at two time points, a BA design is still limited in providing a rigorous understanding of change, as it cannot say accurately whether the change was attributable to the intervention or some other 'confounding' influence. This is where the use of a control group is helpful (see below). In addition, one cannot tell by using the BA approach whether positive (or negative) change is sustained over time. Furthermore, not all participants will complete questionnaires or interviews at both time points, preventing the inclusion of these individuals from any calculations based on paired data. (When data are available from an individual at one time point, but not at some subsequent time point, the diminishing number of people participating in the complete study is described as ‘loss to follow-up’).

2.4 Controlled before and after studies

A CBA research design is rarely used in the evaluation of interprofessional education. The use of controls is a quasi-experimental technique that can help detect whether a change occurred as a result of an intervention (i.e. interprofessional education) or some other confounding influence (unrelated changes in the practice or learning environment).
An example of a CBA study is provided by Edinberg et al. (1978) who evaluated the impact of a 12-week interprofessional course to enhance students’ knowledge and understanding of teamwork in community-based settings. Fourteen students were recruited to act as the ‘intervention group’ while 19 other students acted as the ‘control group’. Intervention group students worked together in small interprofessional teams in community-based practice placements, whereas control group students undertook a course on bio-ethics in which there was no focus on teamwork. Each group was made up from the same mix of professions (medicine, nursing and nutrition). Questionnaires distributed to both intervention and control groups before and after the course revealed that baseline findings were similar for knowledge of teamwork and understanding of the roles of other professional groups. In contrast, post course questionnaires revealed greater improvements for the intervention group in their knowledge of teamwork and understanding of other professional roles when compared to the control group.

Other examples of CBA studies are offered by Finset et al. (1995), La Sala et al. (1997) and Hermida and Robalino (2002).

Compared to the use of post-course and BA designs described above, CBA evaluation provides a more robust understanding of the outcomes connected to interprofessional education. However, the use of this design contains a number of limitations. For example, identifying a suitable control group can be remarkably difficult for evaluations of interprofessional education. Ensuring the equivalence of control and intervention groups in respect of important learner characteristics requires careful attention otherwise the design of the study and the analysis of findings may be compromised. Including a control group increases the data collection and analysis requirement of a study and hence its cost. In addition, while CBA studies can robustly measure change, they nevertheless share the limitations that before and after studies contain around an inability to assess whether reported outcomes are sustained over time and problems ensuring that participants complete questionnaires or interviews at both time points. Indeed, loss to follow up may be greater in (relatively disengaged) control groups.
2.5 Randomised control trials

CBA studies can be altered by the introduction of randomisation. This can be done by randomly selecting learners for inclusion in either the intervention or control groups in an evaluation. By doing so, a CBA becomes a randomised control trial (RCT) (Mosteller and Boruch 2002).

RCTs can provide a very robust understanding of the nature of change associated with an interprofessional education ‘intervention’. The randomisation of participants in an interprofessional course means that bias related to selection or recruitment is minimised.

Solberg et al. (1998) provided a rare example of a RCT that evaluated the impact of team-based training for primary health care professionals. Workers in 44 primary health care clinics were randomly assigned into either the intervention group (who received interprofessional training and support to improve their practice) or the control group (who received no training or support). Questionnaire and clinical audit data revealed that, while intervention group and control group staff recorded identical scores at the baseline phase, following the interprofessional training the intervention group staff improved the care they delivered to patients while the control group staff reported no such changes.

For other examples of interprofessional education evaluations that have employed a RCT design, see Thompson et al. (2000) and Shafer et al. (2002).

Although RCTs are widely used within clinical research, they are rare within educational evaluation. Attempts to randomise individuals and control for confounding variables often meet difficulties. In addition, loss to follow-up can be a problem for RCTs.

2.6 Longitudinal studies

Longitudinal design can be employed to assess the impact of interprofessional education over time and to understand how this type of learning translates into clinical practice. Evaluations that use a longitudinal design collect data (over months or years) following the delivery of an interprofessional course.
Longitudinal work is particularly helpful in overcoming the problems of understanding the longer-term effects of interprofessional education associated with post-course, BA, CBA and RCT designs described above. It is a good design for establishing the relevance of interprofessional education to subsequent professional practice.

Kennard’s (2002) evaluation in which he examined the effects of an interprofessional education module for post-qualification professionals from nursing, midwifery, occupational therapy, radiography and pharmacy provided a good example of a longitudinal design. The course was evaluated by the use of questionnaires and interviews gathered before and at the end of the module, and five months later. It was found that initially the participants held poor perceptions of one another felt to be associated with low levels of contact with one another’s professional group. Post-module and five month follow-up data revealed that participants’ positive experiences of interprofessional learning during the module resulted in more positive perceptions of each others’ professional groups. Kennard’s (2002) paper offered a helpful and well-presented account into the effects of interprofessional education over five months; longer follow-up too would clearly be advantageous.

Other examples of longitudinal evaluations have been offered by Pilon et al. (1997), Young et al. (1998) and Wilkinson et al. (2000).

However, attempting to undertake a longitudinal evaluation can be difficult as interprofessional education participants invariably change jobs and move location over time. Attrition rates can therefore be high. Typically, the longer the time period an evaluation aims to track participants, the higher the attrition rate. In addition, long-term data collection may ultimately feel intrusive or burdensome to participants.

### 2.7 Mixed-method studies

The use of a single approach to data collection tool in an evaluation inevitably restricts the type and amount of data gathered. In mixed-method evaluation designs different data collection approaches (e.g. documentary analysis, questionnaires, interviews and observations) are used at different points of time and for different purposes. This can provide a more detailed understanding of the processes and outcomes associated with an interprofessional course. Triangulation can occur between the different sources of data, perhaps also between quantitative and qualitative data.
An illustration of this type of design was provided by Jones and Salmon (2001) who described a mixed method evaluation in which they collected questionnaire and focus group interview data to evaluate the impact of an interprofessional course for 64 nurses, social workers, community/youth workers and midwives. The course aimed to improve participants’ understanding of interprofessional issues and policies. Findings from the questionnaires revealed that the participants enjoyed and valued their interprofessional experiences. Findings from the focus group interviews provide a more in-depth insight into the participants’ views of the course. Specifically, it was revealed that the course helped participants to understand the nature of teamwork, helped to “sharpen their practice and outlook” (Jones and Salmon 2001:71) on issues and policies linked to teamwork and also encouraged students to share and understand the different professional languages attached to each of their professions.

Other examples of mixed-method studies are provided by Tepper (1997), Bailey (2002) and Wakefield et al. (2003).

While the collection of different forms of data means that a mixed-method evaluation can generate a more comprehensive set of findings, it increases the cost, time and amount of work that needs to be undertaken collecting and analysing data. Sampling, data analysis and reporting also become more complex, requiring greater expertise.

### 2.8 Action research studies

As noted in Section 1.8.1 unlike the more ‘detached’ approach taken with most evaluations of interprofessional education, action research adopts a more collaborative approach where evaluators work with participants through cycles of action and research to plan change, guide participants through change and evaluate the change that occurs. The evaluator works with participants to develop, deliver, evaluate and ultimately improve their practice. In doing so, the evaluator is more active and responsive in problem solving during their evaluation, rather than the traditional approach where the evaluator records problems and reports on them.
Bond’s (1997) study provides a useful example of this approach. After exploratory discussions with the members of a GP’s practice, consisting of a doctor, practice nurse, health visitor and midwife, it was agreed that the author (as an action researcher) would support the team by providing them with a series of interprofessional seminars where they could discuss and share their ideas on collaboration. Observations, interviews and documentary data were collected after ten months to evaluate the impact of the interprofessional learning. Findings revealed that the use of action research helped support this team from a position of working together in a “fragmented” manner to collaborating in a more “synergistic” way (Bond 1997, p 97).

Other examples of action research are offered by Glennie and Cosier (1994), Lacey (1998) and Bond (1999).

However, given the central role of the evaluator as initiator, problem-solver and evaluator of action, employing an action research approach is complex and very time consuming. It requires a wide range of skills and a high level of critical self-awareness from the action researcher. This is therefore not an approach for the novice evaluator to adopt.
Section 3: Using evaluation instruments

3.1 Introduction

This section of the guide highlights the range of evaluation instruments that have been employed in evaluations of interprofessional education. Some of these may prove useful for your evaluations.

3.2 Interprofessional education scales

Due to the highly context specific answers most stakeholders desire from the evaluation of their interprofessional education initiative, most evaluation instruments are self-developed by the evaluation team. However, three more widely used evaluation tools that have been developed for the evaluation of interprofessional education are described below.

The Interdisciplinary Education Perception Scale
The Interdisciplinary Education Perception (IEPS) was developed by Luecht et al. (1990) as a pre-test and post-test tool. It measures changes in learners’ attitudes resulting from an interprofessional education course. The scale consists of 18 items designed to measure the professional perceptions of students exposed to interdisciplinary practice applications related to their own professions. The IEPS is constructed around four factors: professional competence in one’s own profession, perceived need for interprofessional collaboration, perceptions of actual interprofessional co-operation and attitudes towards the value of working with other professions.

Use of the IEPS by Hayward et al. (1996) revealed that the scale was helpful in identifying changes in health care students’ attitudes towards one another following their involvement in a practice-based interprofessional course.
The Readiness for Interprofessional Learning Scale

The Readiness for Interprofessional Learning Scale (RIPLS) was developed by Parsell and Bligh (1999) to measure student attitudes to interprofessional learning. The original scale consists of 19 statements arranged in three subscales (‘teamwork and collaboration’, ‘professional identity’ and ‘roles and responsibilities’). Large-scale validation of the scale is ongoing and it has been lengthened to include a fourth subscale.

Use of the RIPLS by Horsburgh et al. (2001) and Hind et al. (2003) has revealed this tool to be useful in measuring students’ attitudes to interprofessional education before embarking on this type of educational activity.

The Interprofessional Attitudes Questionnaire

This questionnaire was developed by Carpenter (1995a&b) and Carpenter and Hewstone (1996) for their evaluations of interprofessional courses for medical and nursing students and medical and social work students. It measures participants’ attitudes towards other professional groups on an interprofessional course. Designed as a pre-test/post-test tool, this questionnaire contains a number of seven-point rating scales that assess attitudes. Specifically it allows participants to rate:

- their own profession (to assess autostereotypes),
- other professions on the course (to assess heterostereotypes),
- their own profession as seen by others (to assess perceived autostereotypes).

Use of this scale in a number of interprofessional education evaluations (e.g. Barnes et al. 2000, Hind et al. 2003) has provided illuminating data in relation to participants’ attitudes to one another.

3.3. General education scales

A number of scales have been used in various educational settings. Readers can explore, beside the specific example mentioned below, a wider literature referring to such scales. See for example Bringle et al. (2004), Cohen et al. (2000) or Loewenthal (2001).
Study Process Questionnaire

The Study Process Questionnaire (SPQ) developed by Biggs (1987) is a 20-item evaluative tool used for pre-test/post-test purposes. Students rate (on a five-point scale) the validity each item in relation to their approach to learning. The SPQ is now widely used within educational evaluation to provide an understanding of how students approach their learning.

3.4. Team/groupwork instruments

The teamwork literature offers a large number of instruments some of which may well be helpful where interprofessional education aims to improve teamwork. A small selection is presented below. A more comprehensive description and critique of the different teamwork scales can be found in Heinemann and Zeiss (2002).

The Team Climate Inventory

The Team Climate Inventory (Anderson and West 1994, 1998) is a set of four separate but interrelated scales designed to measure different aspects of a team’s collaborative processes:

- Team objectives: a 13-item scale that measures both clarity of team objectives and members’ commitment to team objectives. It includes items such as ‘how clear are you about your team’s objectives?’

- Team participation: a 12-item scale that measures team members’ attitudes to cohesion and participation. It includes items such as ‘we share information in the team rather than keeping it to ourselves’.

- Quality: a seven-item scale that measures the extent to which team members promote quality in their teamwork processes. It includes items such as ‘are members prepared to question the basis of what the team is doing?’
Support for innovation: an eight-item scale that measures the amount of time/effort, cooperation and resources given for implementing innovation. It includes items like ‘team members provide practical support for new ideas and their application’.

Use of this inventory (e.g. by Williams and Laungani 1999) revealed that it is a helpful tool in measuring the nature of team processes in a number of health care and management teams. The Team Climate Inventory would offer a useful pre-course/post-course instrument for evaluating the impact of interprofessional education on the nature and quality of teamwork within an established health/social care team.

**Team effectiveness**

Developed by Poulton and West (1993, 1994), the Team Effectiveness Questionnaire is a 25-item instrument designed to measure how effective a team is in relation to four dimensions of effectiveness:

- Teamwork, e.g. communication strategies, collaborative working, valuing others’ role.
- Organisational efficiency, e.g. clear complaints procedure, innovative practice, keeping within budgets.
- Health care practices, e.g. staff development, research-based practice, equal opportunities.
- Patient-centred care, e.g. provision of information, clinical competence.

Subsequent use of the scale by Poulton and West (1999) in a study into the effectiveness of primary health care teams indicated that this scale provides a useful insight into this area.

The Team Effectiveness Questionnaire would offer a helpful tool for assessing the impact of interprofessional education on the quality and effectiveness of teamwork within an established health/social care team.

**System for Multiple Level Observation of Groups Scale**

Developed by Bales and Cohen (1979), the System for Multiple Level Observation of Groups (SYMLOG) is a 26-item rating scale used to measure individuals’ perceptions of other members of the group based on the following three dimensions:
- Prominence (how active, dominant and assertive).
- Sociability (warmth, friendliness).
- Task orientation (rationality towards tasks and task-focused).

Farrell et al. (2001) employed the SYMLOG in their evaluation of informal roles in health care teams. In doing so, the authors assessed how individual informal roles within teams evolved over time. The SYMLOG would also provide a useful pre-course/post-course instrument for evaluating the effect of interprofessional education on students’ or professionals’ perceptions of one another.

**Interaction in groups**

Bales’ (1976) Interaction Process Analysis (IPA) instrument was devised to categorise and understand the socio-emotional and task-oriented nature of interaction within groups or teams. The observation of interaction within a group is based on assigning behaviour to the following categories: solidarity/antagonism; displaying/releasing tension; agreeing/disagreeing; giving/asking for suggestions; giving/asking for opinions and giving/asking for orientation.

In recording interaction between group members within these categories, Bales’ tool aims to understand the issues and process around communication, control and decision making. The IPA would provide a helpful insight into the nature of the interactions that occur during an interprofessional course.
Team roles

Belbin’s (1993) Self-Perception Inventory (SPI) is a 56-item scale that provides an indication of the likely role an individual will assume in a team. Based on extensive research with a number of public and private sector teams, Belbin identified eight team roles (e.g. ‘chairperson’, ‘shaper’, ‘plant’, ‘team worker’, ‘completer’) each with a distinctive set of characteristics. For example, Belbin viewed a ‘shaper’ as an individual who was an effective initiator of projects, but often poor at completing such work.

Divided into seven parts (individual contribution to the team, personal shortcomings, approach to working with team members, views of teamwork, satisfaction with working in a team, approach to task management and problem-solving abilities) individuals rate themselves against questions such as:

- “I am not reluctant to challenge the views of others or to hold a minority view myself”
- “My desire to ensure that work is properly done can hold up progress”

The SPI can be employed to evaluate how an interprofessional course affects individual roles within an established interprofessional health/social care team.
Section 4: Linking to others’ work

4.1. Introduction

This final section of the Guide contains a wide range of suggestions for further reading as you pursue your learning about the evaluation of interprofessional education.

4.2. Bibliography of research and evaluation texts

The bibliography has some general research and evaluation texts for those about to start evaluation work and then texts on specific research approaches for those who have more experience with evaluation.

General texts


A very accessible and informative textbook for first time researchers outlining the underpinning principles of research, methodologies and methods, it provides numerous practical and helpful tips and ideas around planning and undertaking research.


A comprehensive textbook covering all the relevant issues facing an educational researcher, such as the nature of inquiry, ethics, research design and strategies. It also refers to recent developments, such as use of the Internet.

A popular guide to decision-making in developing and running different types of research projects, it identifies the key research strategies, data collection and data analysis methods. It also provides the reader with frequent reflective stops on the research journey.


Provides a comprehensive insight into the process needed to obtain the literature for a scholarly work – from preparation and planning work, finding journal articles, books, the grey (unpublished) literature to using the Internet to obtain literature.


Providing a useful overview of the theories and methods and practicalities of undertaking social research, it considers issues related to conceptualising research, research ethics, sampling, use of questionnaires, interviews, documents, handling/analysing data and writing-up research.


A two part text on the research process and various aspects of its practice. Part 1 examines the issues and perspectives in social research and Part 2 sets out the methods (surveys, interviews, observations). Revisions and additions in this third edition take account of new ways of thinking about the relationship between theory and research, and values and ethics in the research process.

This text gives advice and support to those carrying out research in the ‘real world’. The emphasis is on achieving rigour and trustworthiness in the enquiry through systematic procedures appropriate to the task. It includes detailed discussions on qualitative and quantitative approaches, field experimentation, surveys and case study research. The final section of the book examines 'making an impact' including different approaches to reporting, the place of enquiry in promoting change, and the relative roles of practitioners and researchers.


A classic text on programme evaluation: discussing a range of approaches to evaluation, providing examples of successful evaluations, explaining meta-analysis, drawing attention to the political and social contexts of evaluation, and discussing the detection of programme effects and interpreting their practical significance.

Qualitative research texts


A comprehensive text on qualitative research that provides details on the theory and practice of qualitative research, this is essentially a text for experienced researchers who want to further develop their understanding of qualitative research.


A helpful text, it provides a comprehensive account of planning, developing and undertaking interviews in a research study.

This edited collection provides a detailed view into a number of leading edge issues related to the practice of qualitative research. The text aims to provide experienced qualitative researchers with an assortment of ideas and practices to develop a broader understanding of qualitative research.


A detailed and accessible test, it offers an in-depth account of handling and analysing qualitative data.


A text that provides valuable insights into the process of designing, planning, undertaking, analysing and writing-up qualitative research.

Quantitative research texts


This is a relatively jargon-free book that aims to make the subject accessible and relevant to all students while covering the subject to the depth required for post-graduate students. It reviews SPSS and similar software packages.


This guide contains nine separate books on designing and undertaking surveys. They provide a comprehensive coverage of: survey design, sampling, undertaking postal and telephone surveys, analysing survey data and reporting findings from survey-based research. The volumes are also available individually.

A classic textbook, it provides a valuable insight into planning, designing and undertaking questionnaire-based research.


This is a very accessible book that outlines the basic concepts of using and understanding statistics. It considers uses of descriptive and inferential statistics, using tables and diagrams, understanding measures of dispersion, normal and skewed distribution, significance – how to undertake parametric and non-parametric statistical tests, prediction and regression.

**Mixed methods and other texts**


This text provides a comprehensive account of action research: its theoretical underpinnings and practice insights into how to use this type of research approach in health and social care settings.

Readers may wish to consult other texts on action research or participatory inquiry, such as those by O’Sullivan (2004), or application of this type of research in education, such as McKernan (1996) or Tomal (2003). Of particular interest is a work by McPherson and Nunes (2004), who guide the evaluator in applying action research to e-learning.

This text offers concise and comprehensive guidance for conducting research on the Internet – how to use the Internet to recruit participants, administer the research process and collect findings as well as how to use the Internet to obtain secondary (published) sources.


This helpful text provides a detailed account into the theory, debates and practice of planning and undertaking mixed-methods research.

4.3 Research and evaluation journals

Journals are a good source of information for description and debates about evaluation approaches. Below is a selection you may wish to consult to help plan and undertake your evaluation.

*Action Research*

Published quarterly, this peer-reviewed journal offers a forum for participative, action-oriented enquiry. It aims to forge links between academics and the various communities of action research practice, including healthcare and social work.

*Evaluation*

Published quarterly, this peer-reviewed journal publishes original evaluation research, both theoretical and empirical as well as literature reviews and overviews of developments in evaluation policy and practice.
Evaluation and the Health Professions

Published quarterly, this peer-reviewed journal provides a forum for all health professionals interested or engaged in the development, implementation and evaluation of health programmes.

Qualitative Health Research

Published six times per year, this peer-reviewed journal publishes papers that enhance and further the development and understanding of qualitative research in health care settings.

Qualitative Research

Published three times per year, this peer-reviewed journal aims to promote and debate qualitative research methods. It provides a forum for interdisciplinary research.

Qualitative Social Work

Published quarterly, this peer-reviewed journal facilitates dialogue between those interested in qualitative research and methodology and those involved in the world of practice.

4.4. Bibliography of interprofessional education evaluations

This part of the Guide provides a small selection of studies of interprofessional education that demonstrates a range of different approaches to evaluation. In many cases, the journals in which these studies were published are useful sources of other evaluations of interprofessional education.

Pre-qualification classroom-based papers

This paper described a short interprofessional course for final year medical and fourth year undergraduate nursing students. The theoretical underpinning for the course was contact theory. Interprofessional pairs of medical students and nursing students worked together exploring and discussing issues around delivering effective patient care. The course was evaluated by pre/post questionnaires.


This paper described a multi-method evaluation of a team-building workshop for undergraduates calling on methods used in business education. Participants were drawn from nine professions including medicine. Interprofessional groups were given instructions to build a ‘Lego’ model using different theoretical approaches to organisational learning.

For other examples of pre-qualification classroom-based evaluations, see Carpenter and Hewstone (1996), Edward and Preece (1999) and Mires et al. (1999).

Pre-qualification practice-based papers


This paper provides an interesting mixed-method evaluation of a series of quality improvement projects designed for interprofessional groups of health and social care students based in various community placements.

Findings were reported from a multi-method evaluation of an interprofessional training ward for undergraduate medical, nursing, occupational therapy and physiotherapy students. Questionnaire, interview, observational and documentary data were collected from students, teachers and patients. Students were followed up a year later.

For other examples of pre-qualification practice-based evaluations, see Dienst and Byl (1981), Itano et al. (1991) and Reeves (2000).

**Post-qualification classroom-based papers**


This paper provided an early example of a multi-method evaluation of an interprofessional diploma in alcohol counselling and consultation. To assess the impact of the course, a controlled before-and-after research design was adopted with the collection of questionnaire, interview and observational data.


These authors presented an interesting multi-method evaluation that collected both process (observations, documentary data) and outcome (interviews, questionnaire) data for two interprofessional courses that aimed to enhance interprofessional collaboration in the area of child protection. Findings from this study revealed a high level of satisfaction with both courses and improved knowledge around the contributions each profession makes to child protection.
For other examples of post-qualification classroom-based evaluations see Strasser (1995), Howkins and Allison (1997) and Richardson and Cooper (2003).

Post-qualification practice-based papers


This paper described an evaluation of a short team-building workshop delivered to two primary health care teams. Interview data were collected with all members of both teams before and after the workshops.


This paper described a mixed-method evaluation of interprofessional workshops for staff caring for older adults. The aim of the workshops was to enhance staff collaborative practice and improve their care for patients and their carers. In total 27 nurses, a psychologist, a bereavement officer and a chaplain attended. Interview and observational data were collected. Findings from this study revealed that while participants enjoyed the sessions, they reported that the sessions had not altered the way they worked with either their colleagues or patients/carers.

For other examples of post-qualification practice-based evaluations, see Cox et al. (1999), Elliot et al. (2002) and Wilcock et al. (2002).
Reviews of interprofessional education


Commissioned by BERA, this report presented a systematic and critical review of UK evaluations of interprofessional education. Nineteen evaluations are presented and critiqued.


This paper critically reviewed thirty studies of the effectiveness of undergraduate interprofessional education within health care programmes.


Commissioned by the LTSN (Centre for Health Sciences and Practice) this report provided a critical analysis of findings from a systematic review of 217 evaluations of interprofessional education in terms of the methods employed to evaluate interprofessional education and the reported outcomes from these evaluations.


This paper reviewed the effects of interprofessional education within the field of mental health. It reports and analyses 19 studies.
4.5 Useful websites

Below, arranged in alphabetical order, is an annotated list of websites that may be helpful in supporting your interprofessional education evaluation. Many websites, particularly those belonging to established organisations, reside at the same address for years. However, some migrate and links between old and new websites sometimes get broken. In all cases the content of websites will be updated periodically and sometimes rearranged. All the links in this section were checked on 30.11.2004.

**Association of Directors of Social Services:** [www.adss.org.uk](http://www.adss.org.uk)

ADSS represents all the directors of social services in UK, except for Scotland. Of interest for evaluators, is its research section, which offers guidelines for people wishing to do multi-site research. It discusses the ongoing development and implementation of the research governance framework for health and social care. Please note that the association will charge for its approval of multi-site projects.

**British Educational Research Association (BERA):** [www.bera.ac.uk](http://www.bera.ac.uk)

The BERA website provides details of events, publications and other services available to members of the Association and provides an overview of some of the activities of BERA. The aim of the Association is to sustain and promote a vital research culture in education by encouraging an active community of educational researchers and by promoting co-operation and discussion: with policy makers, institutional managers and funding agencies, with other educational research associations, with other researchers in the social sciences and related areas of work, and with teachers, lecturers and their associations.

The BEME Collaboration is a group of individuals or institutions committed to the promotion of Best Evidence Medical (and health care sciences) Education through the dissemination of information which allows teachers, institutions and all concerned with health care sciences education to make decisions on the basis of the best evidence available. It supports the production of appropriate systematic reviews which reflect the best evidence available and meet the needs of the user, and seeks to create a culture of best evidence education amongst individual teachers, institutions and national bodies.

British Psychological Society (BPS): [www.bps.org.uk](http://www.bps.org.uk)

The BPS is the representative body for psychology in the UK. The Society has a national responsibility for the development, promotion and application of psychology for the public good. The BPS has three major aims: to encourage the development of psychology as a scientific discipline and an applied profession; to raise standards of training and practice in the application of psychology; to raise public awareness of psychology and increase the influence of psychological practice in society.

British Sociological Association (BSA): [www.britsoc.co.uk](http://www.britsoc.co.uk)

The BSA is the professional association for sociologists in Britain and its website is a key resource for keeping up-to-date with developments in the discipline. The Association represents the intellectual and sociological interests of its members and aims to provide information and services to members; seeks to influence policies affecting sociology within the wider social sciences remit; promotes the identity of the discipline and its practitioners/scholars; maintains and encourages links with sociologists throughout the world.

Central Office for Research Ethics Committees (COREC): [www.corec.org.uk/index.htm](http://www.corec.org.uk/index.htm)

The COREC website provides comprehensive information on the research ethics committee system in the UK and includes the application forms to download.
Centre for Inter-Professional Practice: www.med.uea.ac.uk/research/cipp_home.htm

The Centre for Inter-Professional Practice, University of East Anglia, Norwich facilitates the Continuing Professional Development of teams in health and social care across Norfolk and Suffolk. The Centre is working with pre/post-registration health professionals enabling them to gain a greater understanding of the attributes, skills, knowledge and mutual respect required for effective communication when working in a multi-disciplinary environment.

Cochrane Collaboration Library: www.cochrane.co.uk

The Cochrane Collaboration Library is an on-line publication designed to supply high quality evidence to inform people providing and receiving care, and those responsible for research, teaching, funding and administration at all levels. This website also contains a review into the effectiveness of interprofessional education (Zwarenstein et al. 2001).

Department of Health Common Learning website:
http://www.commonlearning.net/links.asp

This site has been designed specifically to gather key information about policy and examples of pre-registration and undergraduate interprofessional education. It is a useful gateway to the four leading edge sites that are supported by Department of Health. Links to other relevant projects can be found.

Department of Health, Research Governance website:

This website defines the broad principles of good research governance and is key to ensuring that health and social care research is conducted to high scientific and ethical standards. The website also aims to help enhance the contribution of research to the partnership between services and science. It documents standards, details the responsibilities of the key people involved in research, outlines delivery systems and describes local and national monitoring systems.
Higher Education Academy: www.heacademy.ac.uk

The Higher Education Academy works with the UK higher education community to enhance the student experience. The H E Academy aims to become the first choice of the sector for knowledge, practice and policy related to the student experience in higher education. The H E Academy was formed in 2004 and includes the functions of the previously constituted Learning & Teaching Support Network, and the Institute of Teaching and Learning.

HE Academy Health Sciences and Practice Subject Network:
www.health.heacademy.ac.uk

The HE Academy Health Sciences and Practice Subject Network is part of the Higher Education Academy (see above). It aims to promote the development of good practices in health and health care, including nursing and allied health professions, through enhancing the quality of learning and teaching, both practice based and in higher education, across the UK. In doing so it seeks to identify and support the development of good practices in learning and teaching for health sciences and practice in higher education; promote and disseminate good practices by acting as an advocate, broker and catalyst for effective learning and teaching, both established and innovative, across the subject disciplines covered by the HE Academy Health Sciences & Practice Subject Network. It is hosted by King’s College London.

HE Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine:
www.medicine.heacademy.ac.uk

This Subject Centre which is hosted by Newcastle University provides professional educational support to the teachers, students and practitioners of its individual constituent disciplines so as to enhance the quality of educational provision in medicine, dentistry and veterinary science throughout the UK and to transfer good practice in an effective and cost efficient way.
HE Academy Subject Centre for Social Policy and Social Work: www.swap.ac.uk

SWAP is the Subject Centre for Social Policy and Social Work another of the centres, which form part of The Higher Education Academy. SWAP is based at the University of Southampton. It aims to promote high quality learning, teaching and assessment in its subject areas.

HE Academy Triple Project: www.triple-ltsn.kcl.ac.uk

The three HE Academy subject centres covering health and social care professions have a website for their Triple project which supports teachers in higher education developing interprofessional education.

Journal of Interprofessional Care: www.tandf.co.uk/journals/titles/13561820.html

Published quarterly, this peer-reviewed journal comprises papers, abstracts, book reviews and research reports focused on collaboration in education, practice and research. The Journal aims to promote collaboration within and between education, practice and research in health and social care. It provides a channel to communicate ways in which interprofessional education can cultivate collaboration in practice that can, in turn, improve the quality of care for individuals, families and communities. It treats research as both a collaborative field in its own right and as a means to evaluate interprofessional education and practice.

NHS Centre for Reviews and Dissemination: www.york.ac.uk/inst/crd/welcome.htm

The Centre promotes the use of research-based knowledge in health care. It offers rigorous and systematic reviews on selected topics, a database of good quality reviews, a dissemination service and an information service to encourage evidence-based practice in the National Health Service.
The Network: Toward Unity for Health: www.the-networktufh.org

The Network is a non-governmental organisation in an official relationship with the World Health Organization. The Network is a global association of institutions for educating health professionals to be committed to contribute, through innovative education, research, and service, to the improvement and maintenance of health in the communities they serve.

UK Centre for the Advancement of Interprofessional Education (CAIPE):
www.caipe.org.uk

This website includes national and international reviews of interprofessional education as well as a complete list of evaluations included by the Interprofessional Education Joint Evaluation Team (JET) in its latest review.
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