# The BEME Collaboration

**B**est **E**vidence **M**edical **E**ducation

**Protocol for**

***SYSTEMATIC REVIEW***
***OF***
***THE IMPACT OF***
***INTERPROFESSIONAL EDUCATION***

**28/01/2003**

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## Title

The impact of interprofessional education on health and social care practitioners, professional practice, patient/client related health and well being, and public health and social care outcomes.

## Short title

Interprofessional education

## Reviewers

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## Background

Health and social care is increasingly complex, in respect of both its content and the organisation of services for patients and their carers. To deliver these services efficiently, and to practice evidence based care, health professionals need access to knowledge about the effectiveness of interventions. Inextricably linked to evidence-based practice in health care is the need for a similar approach in initial professional education and the continued professional development of qualified practitioners. Health professional education [1] [2] and education more generally [3] must be more evidential and less anecdotal.

As the number of different professions and care settings involved in the course of a patient's illness increases, and as patients' subjective experience grow in importance as an indicator of quality, the need for health care delivery which is well co-ordinated, error free and sensitive to client/patient demands increases. This may require frequent and full collaboration between members of different professions. Reports and papers calling for closer collaboration between health and social care practitioners and agencies extend back to at least the 1970's. As highlighted by [4], much of this literature invokes "shared learning" as the means to this end. Similarly, there is a small body of literature supporting arguments that interprofessional education (IPE) may, through enhanced motivation, improved relationships between professionals and common frames of reference, lead to greater collaboration in practice. Support for such arguments continues to arise from the international policy and practice literature (see, for example, [5] and [6]).

However, until very recently there was no systematic evidence that the prevalent and pervasive problems associated with collaborative work will be reduced or changed following interprofessional education. The first initiative to provide evidence on the effectiveness of IPE on professional practice and health care outcomes is now available [7]. The objective of that review was to assess the usefulness of IPE interventions in comparison to education situations where the same professionals learnt separately from one another. In other words, to ascertain whether or not IPE works. Inclusion criteria were methodological (randomised trials, controlled before and after studies and interrupted time series studies) and meeting the definition of IPE as an educational intervention during which with members of more than one health and/or social care profession learn interactively together, for the purpose of improving the health or well being of patients/clients. The conclusions from the 89 studies out of the 1042 identified from the search strategy were that these evaluations lacked the methodological rigour needed to begin to convincingly understand the impact of IPE on professional practice and/or health care outcomes.

Two clear and equally important messages arise from the work of the Cochrane systematic review. There remains a need to review the effectiveness of IPE and to utilise the range of methodologies currently in use in studies that seek to evaluate this type of education. Such a review needs to extend and enhance the work of the Cochrane review in order to answer questions about, for example, where it works, for whom it works, and when along the continuum of professional education is it most effective. Essentially, this is work concerned with investigating the relative merits of different types of interprofessional education, including any associated cost implications and achievements across a range of outcomes. To achieve this, an inclusive approach to evaluation methodology and the date collection methods used is necessary. Whilst recognising the value of research approaches in the positivist paradigm it is imperative to utilise evidence from alternative but equally rigorous studies.

It is difficult to dispute that, ideally, objective or well-validated measures of improved professional practises, of improved patient/client morbidity, survival, or user satisfaction are the criteria against which claims made for interprofessional education should be judged. The outcomes of IPE should be measured by well-validated and reliable instruments of patient/client outcomes and reliable (objective or validated subjective) health care process measures. However, in reality, few educational evaluations extend to this depth of effectiveness. There are well-rehearsed arguments to support the practical and philosophical reasons for the more frequent short-term approaches to evaluation of the impact of learning. For some, the *leap of faith*

required to confirm any link between the experience of the educational programme for the learner and any subsequent behavioural changes in individual practice or even further, in changes that can be detected by the patient or organisation, is too great. For others, it is simply a matter of logistics and time. Whatever the reasons, the fact remains that few studies attempt to show the effect of an educational intervention on either professional practice or on healthcare outcomes. A recent analysis of 305 papers reporting on the effectiveness of educational intervention for clinical practitioners showed that less that 2% considered effects on healthcare outcomes and around 20% on performance [8]. A framework of measures that permit the more usual and the more desirable outcomes to both be recorded is needed. This at least begins the process of allowing some levels of comparison between IPE types and identifying the common characteristics of best practice across the typology, for a range of different outcomes.

## Review Objectives

The objective of this review is to compare the effectiveness of different types of IPE interventions, including their associated cost implications, for a range of outcomes including the impact on the knowledge, skills and attitudes of the learner, and subsequent change in organisational practice and. or benefits to patients/clients. We will collect and review studies of all types of educational, training or teaching initiatives, involving more than one profession in joint, interactive learning, as described below.

## Methods

The following inclusion and exclusion criteria will be used in this review

Types of studies
All research evaluation designs (e.g. RCT, CBA, ITS, BA, action research, case study, post-intervention studies) will be considered in the review.
To help understand the range of methods employed within these research designs information on data collection methods (e.g. interviews, questionnaires, and observations) will be recorded. A note of whether these data collection methods are qualitative, quantitative or both will also be made.

Types of intervention
An interprofessional educational intervention occurs when members of more than one health and/or social care profession learn interactively together, for the explicit purpose of improving the health or well being of patients/clients. Interactive learning requires active learner participation, and active exchange between learners from different professions.

Types of participants
Among the professional health, social care groups to be included will be: chiropodist/podiatrist, complementary therapists, dentists, dieticians, doctors, hygienists, psychologists, psychotherapists, midwives, nurses, pharmacists, physiotherapists, occupational therapists, radiographers, speech therapists, social workers, care or case co-ordinators, managers.

Types of outcome measures
Outcome measures will be based up an extended version of Kirkpatrick's (1967) model of outcomes at four levels as shown below. Additional predetermined and unintended outcomes will also be accepted.

*Level 1 - Reaction*
These cover learners' views on the learning experience, its organisation, presentation, content, teaching methods and aspects of the institutional organisation, e.g. time-tabling, materials, quality of teaching.

*Level 2a - Modification of attitudes/perceptions*
These outcomes relate to changes in reciprocal attitudes or perceptions between participant groups, towards patients/clients and their condition, circumstances, care and treatment.

*Level 2b - Acquisition of knowledge/skills*

For knowledge, this relates to the acquisition of concepts, procedures and principles of interprofessional collaboration. For skills, this relates to the acquisition of thinking/problem-solving, psychomotor and social skills linked to collaboration.

*Level 3 - Behavioural change*
This measurement will document transfer of interprofessional skills and learning to workplace, such as support for change of behaviour in the workplace or willingness of learners to apply new knowledge and skills about collaborative work to their practice style.

*Level 4a - Change in organisational practice*
This relates to wider changes in the organisation/delivery of care, attributable to an education programme, such as: -
Interprofessional collaboration and communication
Teamwork and co-operative practice
Costs to the health and/or social care service.

*Level 4b - Benefits to patients/clients*
This final level covers any improvements in the health and well being of patients/clients as a direct result of an education programme. Where possible objectively measured or self-reported patient/client outcomes will be used, such as: -
Health status measures
Disease incidence, duration or cure rates
Mortality
Complication rates
Readmission rates
Adherence rates
Patient or family satisfaction
Continuity of care
Costs to carer or patient/client.

Search strategy
We will search at least the following electronic databases: The EPOC register, Medline and CINAHL.
We will use networks of groups involved in the promotion of IPE to circulate to their membership requests for evaluative articles related to IPE. Conference proceedings from these groups in this area and any grey literature held by groups will be hand-searched. In this way we hope to include all the significant grey literature in the field.
A standard search strategy will be used, based on that used for the previous Cochrane review (see above) and adapted for each electronic database; and additional terms to capture evaluation studies will be included. These approaches will be used in conjunction with the following search strategy (adapted for each database) aimed at identifying IPE interventions:

#1 INTER-PROFESSION* or INTERPROFESSION*
#2 INTER-DISCIPLIN* or INTERDISCIPLIN*
#3 INTER-OCCUPATION* or INTEROCCUPATION*
#4 INTER-INSTITUT* or INTERINSTITUT*
#5 INTER-AGEN* or INTERAGEN*
#6 INTER-SECTOR* or INTERSECTOR*
#7 INTER-DEPARTMENT* or INTERDEPARTMENT*
#8 INTER-ORGANISATION* or INTERORGANISATION*
#9 INTER-ORGANIZATION* or INTERORGANIZATION*
#10 INTERPROFESSIONAL RELATIONS
#11 TEAM*
#12 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
#13 MULTIPROFESSION* or MULTI-PROFESSION*
#14 MULTIDISCIPLIN* or MULTI-DISCIPLIN*

#15 MULTIINSTITUT* or MULTI-INSTITUT*
#16 MULTIAGENC* or MULTI-AGENC*
#17 MULTISECTOR* or MULTI-SECTOR*
#18 MULTIORGANISATION* or MULTI-ORGANISATION*
#19 MULTIORGANIZATION* or MULTI-ORGANIZATION*
#20 PROFESSIONAL-PATIENT RELATIONS
#21 #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 #22 #12 or #21
#23 EDUCATION* or TRAIN* or LEARN* or TEACH* or COURSE*
#24 EDUCATION; CONTINUING
#25 EDUCATION; GRADUATE
#26 #23 or #24 or #25 #27 #22 and #26
#28 STUDENT PERFORMANCE APPRAISAL
#29 COURSE EVALUATION
#30 PROGRAM EVALUATION
#31 EVALUATION RESEARCH
#32 #28 or #29 or #30 or #31
#33 HEALTH CARE OUTCOMES
#34 EDUCATION* OUTCOMES
#35 #33 or #34 #36 #27 and #32 and #35

The full text article will be obtained if the abstract suggests that the intervention resulted in interprofessional exchange, that learning took place, that learner, professional practice, patient care processes or health and satisfaction outcomes are reported and that the intervention was evaluated using an appropriate design (see below).
Each paper that meets the inclusion criteria will be abstracted to elicit methodological and outcome information (see data abstraction sheet). This abstracted information will be used as the basis for the analysis of review findings.

Criteria for determining independent findings
All abstracts will be reviewed independently by at least two members of the research team, as will the full text versions of all papers selected by any reviewer. Given the nature of the studies of interest and the semantic quagmire that accompanies the IPE discourse full papers will always be obtained for any disputed abstracts, and disputed full papers subject to scrutiny by a third member of the research team.
Data from eligible papers will be abstracted into one of two coding sheets. These have been developed from an original and similar sheet used for the EPOC review.
1. Where studies have used quantitative data collection methods Quantitative Data Abstraction Sheet – v6 will be used (Attachment 02).
2. Where studies have used qualitative data collection methods Qualitative Data Abstraction Sheet – v2 will be used (Attachment 03).
The coding sheets have been designed to permit consistency across the different approaches to data collection alongside the recognition of the unique features of both approaches. The developmental nature of the review work is indicated by the more substantially tested quantitative data abstraction sheet (version 6) and the work-in-progress status of the qualitative data abstraction sheet (version 2).
To ensure consistency two or more members of the review team will independently code a10% sample of the full papers into the data abstraction sheets.

Analytical procedures
Very few of the variables coded will be ratio data, some will be interval data, and many will be categorical data, rendering standard multivariate analyses impossible. Thus, non-parametric methods will be employed for the analysis.
Where a pooled estimate of the impact of IPE makes sense and data are available we will undertake a meta-analysis.

## Review Timeline

This protocol has been written in response to a call by the BEME Collaboration in December 2000 for protocols on relevant topics. The reviewers anticipate that the full review will be published by the BEME Collaboration. At the same time it is a pilot protocol for BEME.

The inclusive review of evaluations of interprofessional education outlined here follows successful completion of a systematic review for the Cochrane Collaboration (January 2001, see above and references). It is in the nature of systematic reviews that the writing of a protocol, the review work and publication of results do not often follow neatly one from the other but overlap considerably. Hence, as in this case and for the Cochrane Review, the protocol describes what will be done at a time when some of the review has been completed and interim results have been presented and published.

The review described in this protocol aims to complete the intended database searches by September 2003and to be ready to publish full results in 2004.

## Dissemination of Results

The plan for the dissemination of the results of the review has two major aims. We will disseminate the work as a whole to the practitioner and academic communities within health and social care, and to policy makers at all levels. Secondly there is much to be gained by differentially targeting communities with aspects of the review particularised to certain professions and organisations. This will apply to international and national publications, conference presentations, and workshop sessions.

The complete review will be published electronically through the BEME Collaboration. Others relevant journal outlets include The Journal of Interprofessional Education, Medical Teacher, Medical Education, The Journal of Advanced Nursing, Education for Health, Issues in Interdisciplinary Care. There are advanced plans for presentations and workshops at conferences in North America, Scandinavia, and the United Kingdom.

## Funding and Acknowledgements

A minor grant has been obtained for this work from the West London Research and Education Network. Support has also been through the universities employing the JET members.

Our thanks go to these organisations and to members of The Centre for the Advancement of Interprofessional Education for their encouragement.

## Statement concerning conflicts of interest

None

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5. Brashers VL, Curry CE, Harper DC, McDaniel SH, Pawlson LG, Ball JW. Interprofessional Health Care Education. *Issues in Interdisciplinary Care* 2001;3(1):21-31.
6. Hargedon J, Staniforth M. *A Health Service of all the talents: developing the NHS workforce. Consultation Document on the Review of Workforce Planning*. London: Department of Health, 2000.
7. Zwarenstein M, Reeves S, Barr H, Hammick M, Koppel I, Atkins J. Interprofessional education: effects on professional practice and health care outcomes (Cochrane Review). 1 ed: The Cochrane Library Oxford: Update Software., 2001.
8. Belfield C, Thomas H, Bullock A, Eynon R, Wall D. Measuring effectiveness for best evidence medical education: a discussion. *Medical Teacher* 2001;23(2):164-170.

## Attachment 1: Curriculum vitae

 

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Higher Certificate in Social Studies, 1958 University of Nottingham
Education M. Phil. (Applied Social Science), 1969 University of Nottingham
Qualified Social Worker, Home Office Probation Training Centre, 1959
Cropwood Fellow, Summer 1969, Institute of Criminology, University of Cambridge

**PRESENT PORTFOLIO:**
Emeritus Professor in Interprofessional Education, School of Integrated Health, University of Westminster.
Visiting Professor in Interprofessional Education, School of Health, University of Greenwich
Principal Lecturer, School of Health and Social Care, Oulu Polytechnic, Finland
Chairman, UK Centre for the Advancement of Interprofessional Education
Editor-in -Chief, Journal of Interprofessional Care.

**PREVIOUS PROFESSIONAL APPOINTMENTS**
1959-1963 Probation Officer, Nottinghamshire.
1963-1966 Seconded to Home Office Research Unit.
1966-1969 Seconded by Inner London Probation Service to direct a pilot project in prison after care.
1969-1971 Regional Co-ordinator, National Association for the Care and Resettlement of Offenders.
1972-1989 Assistant Director, Central Council for Education and Training in Social Work (CCETSW).
1989-1992 Director, Centre for Interprofessional Studies, University of Nottingham.
1992-1997 Special Professor, School of Social Studies, University of Nottingham.
1989-1997 Panel Member, Charities Aid Foundation Consultancy Service.
1997-1998 Associate Dean, Department of Postgraduate General Practice, North Thames (West), University of London
1997-2000 Research Co-ordinator, Centre for Community Care & Primary Health, University of Westminster.
1998-200 Professor of Interprofessional Education, Centre for Community Care & Primary Health, University of Westminster

**EXTERNAL EXAMINING:**
MA in Community and Primary Health, University of Westminster.
Postgraduate Certificate and Diploma in Community Care, University of Dundee
MA Interprofessional Studies in Health and Welfare, University of Central Lancashire. .
MA Collaborative Community Care, University of Central England
PhD theses for the universities of Dundee, Sunderland and York

**MEMBERSHIP OF EDITORIAL BOARDS:**
British Journal of Social Work, 1974-78.
Journal of Social Welfare Law, 1978-1989.
Social Work in Europe, 1994 to present. (Advisory Board)
Journal of Interprofessional Care, 1992 to present

**PUBLICATIONS:**
The following abbreviations are used:

BBC: British Broadcasting Corporation
CAIPE: UK Centre for the Advancement of Interprofessional Education
CCETSW: Central Council for Education & Training in Social Work
HMSO: Her Majesty`s Stationary Office
ISTD: Institute for the Study and Treatment of Delinquency
NACRO: National Association for the Care & Resettlement of Offenders
NHSE: National Health Service Executive

**1. BOOK**
Volunteers in Prison After-Care. George Allen and Unwin, 1971

**2. MONOGRAPHS**

Trends and Regional Comparisons in Probation. HMSO, 1966
With Erica O`Leary
A Survey of Group Work in the Probation Service. HMSO. 1966
Social Work in Prison: a Report on Prison Welfare in London. (Ed)
National Association of Probation Officers. 1968
The Role of the Volunteer - a Re-appraisal. NACRO. 1972
Research and Practice: Report of a Working Party on a Research Strategy for the Personal Social Services. (Co-editor with Malcolm Johnson) CCETSW and the Personal Social Services Council. 1980
The Certificate in Social Service - A Progress Report. CCETSW Papers 9.4 1980. With colleagues
The Certificate in Social Service - Second Progress Report. (Ed) CCETSW Paper 9.5 1983
The Certificate in Social Service - the Durham Papers. (Ed) CCETSW Paper 9.7 1984
Mental Handicap - Progress and Prospects in Staff Training. CCETSW Paper 5.3 1985
Perspectives on Training for Residential Social Work. CCETSW Study 8. 1987.
Social Work Education and 1992. CCETSW 1990
Perspectives on Shared Learning. CAIPE. 1994
Shared Learning: Selected Examples from the Literature. CAIPE. 1995. With Ian Shaw
Interprofessional Education in Health and Social Care in the United Kingdom: a Survey. CAIPE. 1996 With Sarah Waterton.
Interprofessional Learning in Primary Care; Developments in North West London. (1998) University of London. With Sandra Gower, Celia McGruer, Joanna O`Connell and Julia Whiteman.
Evaluating Interprofessional Education: A UK Review for Health and Social Care. With Della Freeth, Marilyn Hammick, Ivan Koppel and Scott Reeves. October 1999. British Educational Research Association and the UK Centre for the Advancement of Interprofessional Education

**3. CHAPTERS IN BOOKS**

Voluntary Help. In: The Probation and After-Care Service. Joan King (Ed) Butterworths 1969
Training and Staff Development: New Skills, New Roles. In: The Residential Opportunity: the Wagner Report and After. Terry Philpot (Ed). Community Care, 1989
Countdown to 1992. In: Changing Social Work and Welfare. Pam Carter et al. (Eds) Open University Press. 1992
NVQs and their Implications for Interprofessional Collaboration. In: Going Interprofessional. Leathard, A. (Ed). Routledge. 1994.
Migration: the Challenge for Social Work. In: Facing the European Challenge - the Role of the Professions in a Wider Europe. Vol. 2. Pauline Neale (Ed). 1996. University of Leeds

**4. SECTIONS OF REPORTS**

Myths of Training and Treatment in Custody. In: Myths of Training and Treatment . ISTD. 1969
Introduction to: Developments in Social Work. BBCtv. 1974
Research in Social Work Education (1988) In: Assessing Outcomes: the Development of a Research Strategy in Social Work Education. Universities of Edinburgh and Sheffield
1992 and All That. In: Proceedings of the Conference of the Federation Internationale des Communautes Educative, 1990
Interdisciplinary Education. In: Changing Clinical Education in Primary Health Care. Templeton College, Oxford, 1994
Interprofessional Education in Britain - an Overview. In: Leathard, A. (Ed) Interprofessional Learning and Caring for Needs. London. South Bank University. 1996
Volunteers in Primary Health Care: a Survey in Two English Regions. With Peter Davies, Grant Morrison, Oliver Samuel and Patrick Pietroni. Annex D of Making a Difference: Strengthening Volunteering in the NHS. NHSE 1996
From Multiprofessional to Interprofessional Education: Putting Principles into Practice. In: Learning Together: Professional Education for Maternity Care. NHSE 1997
The Multiprofessional Dimension. In: Hibble, A. (Ed) Higher Education for General Practice. Report on the Second Cambridge Conference. Anglia Deanery for Postgraduate General Practice Education 1998

**5. ARTICLES IN REFEREED JOURNALS**

Professionals and Volunteers in Prison After-Care. Howard Journal. Vol XIII No 2 1971
Measuring up to the EC Directive. Issues in Social Work Education 10 (1 and 2) Spring/Autumn 1990
The Swedish Connection. Issues in Social Work Education 14 (1) Spring 1994 With Doreen Curl

Means and Ends in Interprofessional Education: Towards a Typology. (1996) Education for Health. Vol 9 (3)
Competent to Collaborate; Towards a Competency-based Model for Interprofessional Education. (1998) Journal of Interprofessional Care Vol. 12 (2)
Systematic Review of Interprofessional Education: Towards Transatlantic Collaboration. (1999) With Marilyn Hammick, Ivan Koppel and Scott Reeves. Journal of Allied Health. 28 (2)
A Systematic Review of Interprofessional Education. (1999) With Merrick Zwarenstein, Jo Atkins, Marilyn Hammick, Ivan Koppel and Scott Reeves. Journal of Interprofessional Care. 13 (4)
Evaluating Interprofessional Education: Two Systematic Reviews for Health and Social Care. (September 1999) With Marilyn Hammick, Ivan Koppel and Scott Reeves. British Education Research Journal.
New NHS, new collaboration, new agenda for education. (2000) Journal of Interprofessional Care, 14 (1)

**ARTICLES IN OTHER JOURNALS**

The Role of Volunteers in Prison After-Care. Social Services Quarterly. Autumn 1969
Current Trends in Prison Aftercare. Contact. September 1970
Volunteers - Preparation and Education. With Martin Edis. Health and Social Services Journal September 1974
Caring about Staff Development and Training - Green for Go. Residential Social Work 14 (11) November 1974
Social Work Education and the Role of the Probation Officer. The Probation Journal. December 1976
The Certificate in Social Service. Social Services Quarterly, 1 (3) January/March 1977
A Postscript. Studies in Environment Therapy. Vol. 5 1989
Evaluating Interprofessional Education. CAIPE Bulletin 10. 1995
Objectives and Objectivity in Interprofessional Education. CAIPE Bulletin No 13 Summer 1997

**6. OTHER PUBLICATIONS**

Editorials, book reviews and conference reports, variously for the `Issues in Social Work Education`, `The `Journal of Interprofessional Care` and `The CAIPE Bulletin`.
Unattributed authorship of regulations and guidelines, curriculum studies and information materials for CCETSW. June 2001

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**Professional Associations:**
Fellow of Royal Statistical Society (elected 1990)
Member of the Institute of Learning and Teaching (admitted 2000)
Member of CAIPE. (UK Centre for the Advancement of Interprofessional Education). Elected to Board in 1998
Member of BERA (British Educational Research Association) and of its special interest group in education and training for the professions

**Selected Publications**

Freeth D, Hammick M, Barr H, Koppel I, Reeves S (2002) A critical review of evaluations of interprofessional education. London: LTSN HS&P

Reeves S, Koppel I, Barr H, Freeth D, Hammick M (2002) Twelve tips for undertaking a systematic review. *Medical Teacher* 24 (4): 358-363

Reeves S, Freeth D, McCrorie P, Perry D (2002) 'It teaches you what to expect in future' interprofessional learning on a training ward for medical, nursing, occupational therapy and physiotherapy students. *Medical Education*. **36** (4): 337-345

Reeves S, Freeth D (2002) The London training ward: an innovative interprofessional initiative. *Journal of Interprofessional Care.* **16**: 41-52

Freeth D, Reeves S, Goreham C, Parker P, Haynes S, Pearson S (2001) "Real life" clinical learning on an interprofessional training ward Nurse Education Today **21**(5): 366-372

Freeth D (2001) Sustaining Collaboration Journal of Interprofessional Care **15**(1): 37-46

Freeth D S, Weist A, Roberts C M (2001) Provision of an electronic library at the clinical front line Hospital Medicine **62**(1): 43-45 (R)

Koppel I, Barr H, Reeves S, Freeth D, Hammick M (2001) Establishing a systematic approach to evaluating the effectiveness of interprofessional education Issues in Interdisciplinary Care **3**(1):41-9

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Freeth D, Meyer J, Reeves S & Spilsbury K (1999) Linking interprofessional education to user benefit: of drops in the ocean and stalactites Advancing Clinical Nursing **3:** 127-135

Nicol M J & Freeth D S (1998) Assessment of Clinical Skills: A new approach to an old problem Nurse Education Today **18**, 601-609

Freeth, D. S. & Nicol, M. J. (1998) Learning clinical skills: an interprofessional approach Nurse Education Today **18,** 455-461

Gregg, R., Freeth, D. S. & Blackie, C. (1998) Teenage Health and the Practice Nurse: Choice & Opportunity for both? British Journal of General Practice **48,** 909-910

 

# Dr Marilyn Hammick EdD. MSc. DMS TDCR

**Current position** (from January 2003)
Consultant in Health Professional Education and Research marilyn.hammick@btopenworld.com

**Most recent appointments (1996-2002)**
Senior Lecturer, Centre for Research in Medical & Dental Education, University of Birmingham
This post involved concurrent management research projects including assessment of the predictive nature of selection procedures for general practice registrars, mapping current assessment documents for general practice registrars, outcomes of implementation of genetic literacy of specialist registrars' curricula and the evaluation of national leadership courses for clinical teams. Also responsible for the development of systematic review research amongst staff from the School of Education and the West Midlands Deanery and a taught doctorate in medical, dental and health sciences education.
Principal Lecturer and then Reader in Interprofessional Education, School of Health Care, Oxford Brookes University
Achievements during Readership :
Evaluation of the overlap between the written, taught and received curriculum of a work based learning master's level module for radiographer-led treatment reviews and the impact and effectiveness of the educational intervention in a Cancer Centre.
Evaluation of the poet-in-residence project in the School of Health Care.
In collaboration with colleagues, preliminary work towards a substantial contribution to the literature on interprofessional education and its evaluation: with joint editorial responsibility for one book and a commitment to five chapters in another. These books are due for completion in December 2003.
Completion of a chapter on the development, approval and implementation of interprofessional education.
Completion to publication of a paper on the interprofessional differences in health care practitioners approaches to cancer fatigue for their patients.
Development of the School's professional doctorate and an interprofessional education project, working with the School of Medicine, Oxford University. Supervised research students and work based learning students.

**Current research and consultancy**
External evaluator for two FDTL HEFCE funded projects on interprofessional education.
External evaluator and guest discussant: Graduate Diploma in Post Secondary Studies (Health Professional Education) Memorial University Newfoundland, Canada.
Best Evidence Medical Education Collaboration Steering Group and Topic Review Group member.
Consultant to the 360-appraisal programme for doctors in the West Midlands.
Elected Board Member of the Centre for the Advancement of Interprofessional Education
Editorial board member: Radiography, Journal of Interprofessional Care.
Member of a Joint Evaluation Team investigating systematic review methodologies in education.
Specialist Advisor to Unit of Assessment 11, Other Studies and Professional Allied to Medicine, Research Assessment Exercise 2001.
College of Radiographer's Representative to Royal College of Radiologists Research Funding Panel.

**Recent publications**
Wakefield S, Brown C, Hammick M, Bullock A. (2003) Involving Lay Assessors in the Selection of GP Registrars: an evaluation from the West Midlands. Birmingham: Centre for Research in Medical and Dental Education, University of Birmingham
Freeth D, Hammick M, Barr H, Koppel I, Reeves S (2002) A critical review of evaluations of interprofessional education. London: LTSN HS&P
Hammick M, Barr H, Freeth D, Koppel I & Reeves S. (2002) Systematic reviews of evaluations of interprofessional education: results and work in progress. Journal of Interprofessional Care **16**, 1: 80-4.
Hammick M. & Agbabi P. (2002) Science and Art: Working at a Novel Interface, UK Centre for the Advancement of Interprofessional Education Bulletin **21:** Winter 10-11.
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Hammick M & Robertshaw H. (1999) Interprofessional Work in Cancer Care: Towards TeamWork Through Interprofessional Education, Radiotherapy in Practice. **1**, 1: 27-34.
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# Ivan Koppel

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London, W6, 7HY

**Telephone** 0208-846 7555
**Date of birth** 25 April 1948
**Place of birth** Bratislava, Czechoslovakia
**Nationality** British
**Marital status** Married

**EDUCATION**

| | |
|---|---|
| 1966-1968 | Medical School - Košice, Czechoslovakia |
| 1968-1972 | St Mary's Hospital, Medical School, London W2 |

**QUALIFICATIONS**

| | | | |
|---|---|---|---|
| 1972 | MB BS | 1991 | Dip.Med.Ed |
| 1975 | MRCP | 1992 | M.Med.Ed |
| 1977 | MRCGP | 1992 | FRCGP |

AWARDS

Use of Computers in Cervical Cytology (Pathology Prize), St Mary's Hospital Medical School

1987 Schering Scholarship of Royal College of General Practitioners - to report on courses for young practitioners

1989-1992 MSD Fellowship - concerned with multiprofessional education

1991-1993 RCGP Scientific Foundation Board - to study multiprofessional education

1995-1997 LIZEI Fellowship - to study interprofessional education & teach at University of Westminster

**APPOINTMENTS**

12.72 - 5.73 House Surgeon, Orthopaedics, St Mary's Hospital, London W9

6.73 - 11.73 House physician, General medicine, Edgware General Hospital

1.74 - 4.74 Senior House Officer, Obstetrics & Gynaecology, St Mary's Hospital, London W9

5.74 - 4.77 Hammersmith Hospital Vocational Training Scheme:trainee at Grove Health Centre, Hammersmith Hospital - Senior House Officer in Medicine, Gynaecology, Accident and Emergency, Paddington Green Children's Hospital - Paediatrics

General Practice

3.78 to present Partner at Richford Gate Health Centre

**LEARNING EXPERIENCE**

| | |
|---|---|
| 12.88 - 6.88 | Study for Diploma of Medical Education, University of Dundee |
| 6.91-6.92 | Study for Masters in Medical Education University of Dundee |
| 10.94-present | Enrolled for PhD at Institute of Education, London |

 

**TEACHING EXPERIENCE**

UNDERGRADUATE:

Medical Students

- Throughout hospital jobs
- At the Grove Health Centre from St Mary's and Charing Cross Medical Schools

POSTGRADUATE:

General Practice Vocational Training:

- Trainer 1981-1988
- Course organizer Hammersmith Hospital VTS, 1984-1993

Higher Professional Training:

- Course organizer of North and West London Faculty RCGP extended course for young principals 1987-1988

Multi-professional:

- MSD initiated workshops on Informal Carers in Elderly
- Study days with trainees, health visitors and district nurses
- Various workshops in Riverside area

Research methods in primary care October 1995 - October 1996

Principal lecturer

- Department of Community and Collaborative Practice, School of Integrated Health, University of Westminster, September 1995 - present

**OTHER ACTIVITIES**

Member of LMC since 1982, various committees - LMC & EHH Health Authority

Member of FPC 1984 - 1990

Hammersmith and Fulham Mind - Executive Member since 1984, Chairman 1985-1987

North and West London Faculty RCGP

Honorary Secretary 1987 - 1992

Vice-Chair 1992 - 2001

Chair of Audit & Research group 1994 – 1997

Chair of London Deanery GP 1995 – to present

Education & Training Committee

# Scott Reeves

**Qualifications**
MSc Social Research Methods, London Guildhall University, 1996
Post Graduate Certificate in Education, University of Greenwich, 1994
BSc Applied Social Science, University of North London, 1993

**Recent Posts**
Senior Research Fellow, School of Occupational Therapy, Queen Mary, University of London (secondment from City University) (2002-date)
Honorary Research Fellow, General and Emergency Medical Directorate, Barts and The London NHS Trust (part-time 2001-date)
Research Fellow, School of Nursing & Midwifery, City University (2000-date)
Associate Lecturer, School of Health & Welfare, Open University (1999-date)
Visiting Lecturer, Faculty of Applied Social Sciences, University of North London (1998-1999)
Research Officer, School of Nursing & Midwifery, City University (1998-2000)
Research Assistant, School of Nursing & Midwifery, City University (1994-1998)

**Research Grants**
Involvement in attracting over £150,000 in external research funding into City University: £67,000 from Barts & The London NHS Trust (grant holder, 2001); £5000 from Central and East London Educational Consortium (2000); £14,000 from the Clinical Effectiveness Support Unit (Wales) (1997); £67,000 from the Department of Health (1995);

**Current Research focus**
Evaluations of interprofessional collaboration and interprofessional education

Other Activities
Research Reports Editor, Journal of Interprofessional Care
Member of the North East London Health Authority Research Ethics Sub-Committee
Peer Reviewer, Medical Education
Website manager, UK Centre for the Advancement of Interprofessional Education (www.caipe.org.uk)

**Recent Publications**
Reeves S (forthcoming) Work-based interprofessional education for community mental health teams. In Glen S & Leiba T (eds) Multi-professional Learning for Qualified Nurses: Breaking the Boundaries. Palgrove: Hampshire
Reeves S, Freeth (forthcoming) New forms of information technology, new forms of collaboration? In Leathard A (ed) Interprofessional Collaboration: From Policy to Practice in Health and Social Care. Routledge: London.
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Reeves S, Freeth D, McCrorie P, Perry D (2002) 'It teaches you what to expect in real life' interprofessional learning on a training ward for medical, nursing, occupational therapy and physiotherapy students. Medical Education 36:337-344.
Zwarenstein M & Reeves S (2002) Working together but apart: barriers and routes to nurse-physician collaboration. The Joint Commission Journal on Quality Improvement, 28:242-247.
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Freeth D, Reeves S, Goreham C, Parker P, Haynes S, Pearson S (2001) "Real life" clinical learning on an interprofessional training ward. Nurse Education Today 21: 366-372

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Koppel I, Barr H, Reeves S, Freeth D, Hammick M (2001) Establishing a systematic approach to evaluating the effectiveness of interprofessional education. Issues in Interdisciplinary Care, 3:41-49.
Reeves S (2000) Community-based interprofessional education for medical, nursing and dental students. Health and Social Care in the Community, 8:269-76.
Zwarenstein M, Reeves S (2000) What's so great about collaboration? British Medical Journal 320:1022-23
Reeves S, Freeth D (2000) Learning to collaborate. Nursing Times 96:41-42.
Reeves S, Meyer J, Glynn M, Bridges J (1999) Co-ordination of interprofessional health care teams in a general and emergency directorate. Advancing Clinical Practice 3:49-59.
Barr H, Hammick M, Koppel I, Reeves S (1999) Evaluating interprofessional education: two systematic reviews for health and social care. British Education Research Journal 25:533-544.
Reeves S, Pryce A (1998) Emerging Themes: an exploratory research project of a multidisciplinary education module for medical, dental and nursing students. Nurse Education Today 18(7):534-541.

## Attachment 02: JET IPE REVIEW – Quantitative Data Abstraction Sheet – v6 with explanatory notes

| CRITERIA | COMMENTS |
|---|---|
| Ref. No: | |
| Citation | |
| Type (jnl, grey lit) | State whether paper has been obtained from a journal/grey literature |

| Educational Initiative | |
|---|---|
| Aim/objective of IPE | State aims/objectives (e.g. collaboration; quality of care; flexible workforce; economies of scale or Unspecified). (Also note if aims/objectives are explicit or implicit) |
| Type of IPE | e.g. formal, informal, or a mixture of both |
| Content | e.g. common, collaborative, or a mixtureSee note 1 |
| Duration | Months, Days, hours … |
| Method of learning/ teaching | State all methods used, e.g. Received (didactic); Exchange based (participatory); Observation (site visits); Action based (problem-solving); Simulation (role playing); Practice based (placements);<br>Audit; Guideline develop/implement (this last method used widely in TQM/CQI)<br>N.B. Need to be clear in differentiating between 'PBL' as an educational approach and 'problem-solving' as a leaning/teaching method |
| Location | Workplace, college, hospital / clinic / community / urban / rural<br>Also country of origin (US, UK, etc) |
| Participants (number & type) | e.g. social workers, health care managers…community workers…doctors… etc<br>State number from each professional group |
| Sector | Which broad area of health/social care (e.g. acute, community) |
| Level / stage | Undergraduate / graduate / in service |
| Qualification | e.g. whether certificate or not / validation / accreditation |
| Context | e.g. triggers for IPE; helps & hindrances (description of any 'interesting' contextual details). Also following Harden (1998) could include: characteristics of students, topic covered and 'learning situation' |
| Rationale for IPE | State conceptual underpinning of the study (e.g. androgogy, TQM, CQI, audit).<br>Also state whether rationale implicit or explicit (N.B. only classify as explicit where specific theory identified). N.B. In instances of TQM/CQI where practice is altered as result of intervention, term as 'learning organisation' |

| Outcomes Transcribe the actual outcomes in form given - e.g. proportions in each group who achieve…some outcome<br>More than one outcome may be given - collect all. | |
|---|---|
| Explicit/implicit | Are they implicit or explicit? |
| Level 1: Reaction | See note 2 |
| Level 2a: Attitudes | See note 2 |
| Level 2b: Skills | See note 2 |
| Level 3: Behaviour | See note 2 |
| Level 4a: Practice | See note 2 |
| Level 4b: Patients | See note 2 |
| Other/unspecified | State any other outcomes, or if outcomes are unspecified |

| Methods of evaluation | |
|---|---|
| Aim of Evaluation (Implicit/explicit) | What are the evaluation aim(s)?<br>(Also state whether aims of evaluation implicitly or explicitly stated) |
| Research Design | RCT, CCT, CBA, ITS; specify if qualitative or quantitative; other – BA, BDA, action research, longitudinal, contemporaneous, retrospective – specify when, post-IPE (see note 3) |
| Data collection method | SPECIFIC TYPES - Interviews, questionnaires, other measures – observation, patient outcomes |
| Source of data | Whether from students, patients, course organisers/author's description |
| Data analysis method | Qualitative, quantitative – detail of type |
| Number of groups (in study) | how many arms in *study* - e.g. 1 intervention, 2 controls |
| Unit of study | (1,2 or more levels ) i.e. individuals *as students or professionals* and/or clusters of subjects- e.g. organisations, classes/groups of students or professionals |
| Method of allocation | Describe how subjects allocated to group. |
| Allocation concealment | Judge if the study was designed in such a way that the researchers could not bias which subjects went |

| | |
|---|---|
| | into the intervention group, or the other group<br>Score adequate (A), unclear (B), inadequate (C) or not used (D). |
| Blinding | Judge if subjects and evaluators unaware of which subjects got intervention<br>Score adequate (A), unclear (B), inadequate (C) or not used (D). |
| Power calculation | Was there a calculation made of how big the study needed to be to detect the expected difference? |
| (Original) Sample size | How many participants in each group? (may be at two levels) e.g.: number of classes, number of students |
| Loss to follow up | How many dropouts from each group |
| Significance measures | The mean and the standard deviation (SD), confidence interval for the mean difference, test statistic (t test, F test, chi-square test, etc.) or a p-value |
| Reported biases | These include selection bias, performance bias, attrition bias and detection bias- leave them for now, unless the authors mention a potential bias or confounder. |
| Strength of design | See note 4 |
| *Strength of no.* | See note 4 |
| *Quality of study* | See note 4 |
| Quality of information | See note 4 |
| Overall weighting | See note 4 |

**Note 1 - Content of IPE**

Based on a slightly modified version of Barr's (1996) typology. For the purposes of JET we are using the following three categories:

- Common (where all students/groups learn the same content)
- Collaborative (where students/groups learn about one another in order to collaborate)
- Mixed (where students/groups receive a mixture of above two)

**Note 2 - Educational Outcomes**

Outcomes are based up an extended version of Kirkpatrick's (1967) model of outcomes. Will also accept / include both the predetermined and unintended outcomes.

*Level 1 - Reaction*

These cover learners' views on the learning experience, its organisation, presentation, content, teaching methods and aspects of the institutional organisation – timetabling, materials, quality of teachers. Second element here is concerned with changes to attitudes to IPE as a result of the event.

*Level 2a - Modification of attitudes/perceptions*

Outcomes here relate to changes in reciprocal attitudes or perceptions between participant groups, towards patients/clients and their condition, circumstances, care and treatment.

*Level 2b - Acquisition of knowledge/skills*

For knowledge, this relates to the acquisition of concepts, procedures and principles of interprofessional collaboration. For skills, this relates to the acquisition of thinking/problem-solving, psychomotor and social skills linked to collaboration.

*Level 3 - Behavioural change*

This measurement will document transfer of learning to workplace, such as support for change of behaviour in the workplace or willingness of learners to apply new knowledge and skills.

*Level 4a - Change in organisational practice*

This relates to wider changes in the organisation/delivery of care, attributable to an education programme.

*Level 4b - Benefits to patients/clients*

This final level covers any improvements in the health and well being of patients/clients as a direct result of an education programme.

**Note 3 - What is a trial?**

A trial involves one or more test treatments, at least one control treatment, specified outcome measures for evaluating the studied intervention, and a bias-free method of assigning patients to the test treatment. The treatment may be drugs, devices, procedures or complex interventions (such as IPE) which are studied to ascertain their effectiveness - this could be with respect to diagnosis, therapy of individual patients, prevention of disease in a community, or, in our IPE study, effects on either educational processes or outcomes, or health outcomes, including measures such as user satisfaction.

Control measures include placebos, active medicine, no-treatment, different dosage forms and regimens, historical comparisons, and, in our case, usual educational practice, no educational practice, or some other suitable explicit comparison.

When randomization is done using mathematical techniques, such as a random numbers table, to assign patients to test or control treatments, the trial is characterized as a RANDOMIZED CONTROLLED TRIAL (RCT). However, otherwise similar trials employing different methods for treatment allocation, such as coin flips, odd-even numbers, patient social security numbers, days of the week, medical record numbers, or other such pseudo- or quasi-random processes are simply designated as CONTROLLED CLINICAL TRIALS (CCT).

EPOC criteria include other designs of evaluation:

INTERRUPTED TIME SERIES STUDIES (ITS), where a number (used to be 2, but has just been increased to 3) of measures of the outcome are made before an intervention is applied to a group, and again, in the same way, and also 3

times, to the same group, after the intervention is over. Statistical efforts are usually made to control for other changes that might have occurred over the period.
CONTROLLED BEFORE/AFTER STUDIES (CBA) where an intervention group is compared to one or more control groups, both before the intervention (to assess for similarity of the groups before intervention) and after the intervention (to assess for differences between the intervention and control groups), changes which are then presumed to be due to the intervention.

***Note 4* - Strength of design**
Although problematic to score the strength of a research of a score between 1-4, this categorisation system should allow a rough idea of research design strength (although it is acknowledged to be in favour of quantitative designs). It is anticipated that in the final write-up quantitative and qualitative approaches will be dealt with separately. In meantime, score as follows:

- RCT, CBS, ITS =4
- Longitudinal, action research, BA, BDA (with control group) =3
- BA, BDA =2
- Post intervention study =1

Strength of numbers
A score (from 1-3) of the strength of numbers of participants/professions involved in study. Score as follows:

- more than 30 participants from at least two professions =3
- between 10-30 participants from at least two professions =2
- below 10 participants from at least two professions =1

Quality of study/ research
Degree of appropriateness of design in relationship to aims of evaluation, clear criteria for selection of students, sources of bias/extraneous factors. On a scale 5 to 1 (lowest =1) - (based on judgement).
Quality of information
Clarity of evaluative procedure including validity and reliability, significance related to response rate, degree of generalisability, educational significance i.e. importance of change. Clarity of context descriptives – both education and study, On a scale of 5 to 1 (lowest =1) - (this is again judgmental).
Overall weighting
This figure is calculated by adding together above four scores (e.g. strength of design, strength of numbers, quality of 0study and quality of information) to provide an overall weighting for each paper.

## *References*

Barr, H (1996) Ends to means in interprofessional education: towards a typology. *Education for Health,* 9(3)
Harden, R (1998) Multiprofessional education: the magical mystery tour. *Medical Teacher,* 20(5)397-8
Kirkpatrick, D (1967) Evaluation of Training. In: Craig, R & Bittel, L (eds) *Training and Development Handbook.* New York: McGraw-Hill.

## Attachment 03: JET IPE REVIEW – Qualitative Data Abstraction Sheet – v2 with explanatory notes

| CRITERIA | COMMENTS |
|---|---|
| Ref. No: | |
| Citation | |
| Type (jnl, grey lit) | State whether paper has been obtained from a journal/grey literature |

| **Educational Initiative** | |
|---|---|
| Aim/objective of IPE | State aims/objectives (e.g. collaboration; quality of care; flexible workforce; economies of scale or Unspecified). (Also note if aims/objectives are explicit or implicit) |
| Type of IPE | e.g. formal, informal, or a mixture of both |
| Content | e.g. common, collaborative, or a mixture - See Note 1 |
| Duration | Months, Days, hours … |
| Method of learning/ teaching | State all methods used, e.g. Received (didactic); Exchange based (participatory); Observation (site visits); Action based (problem-solving); Simulation (role playing); Practice based (placements); Audit; Guideline develop/implement (this last method used widely in TQM/CQI)<br>N.B. Need to be clear in differentiating between 'PBL' as an educational approach and 'problem-solving' as a leaning/teaching method |
| *Location* | Workplace, college, hospital / clinic / community / urban / rural<br>Also country of origin (US, UK, etc) |
| *Participants (number & type)* | e.g. social workers, health care managers…community workers…doctors… etc<br>State number from each professional group |
| Sector | Which broad area of health/social care (e.g. acute, community) |
| Level / stage | Undergraduate / graduate / in service |
| Qualification | e.g. whether certificate or not / validation / accreditation |
| IPE Context | e.g. triggers for IPE; helps & hindrances (description of any 'interesting' contextual details). Also following Harden (1998) could include: characteristics of students, topic covered and 'learning situation' |
| Rationale for IPE | State conceptual underpinning of the study (e.g. androgogy, TQM, CQI, audit).<br>Also state whether rationale implicit or explicit (N.B. only classify as explicit where specific theory identified). (N.B. In instances of TQM/CQI where practice is altered as result of intervention, term as 'learning organisation'). |

| **Outcomes** Transcribe the actual outcomes in form given - e.g. proportions in each group who achieve…some outcome<br>More than one outcome may be given - collect all. | |
|---|---|
| Explicit/implicit | Are they implicit or explicit? |
| Level 1: Reaction | See note 2 |
| Level 2a: Attitudes | See note 2 |
| Level 2b: Skills | See note 2 |
| Level 3: Behaviour | See note 2 |
| Level 4a: Practice | See note 2 |
| Level 4b: Patients | See note 2 |
| Other/unspecified | State any other outcomes, or if outcomes are unspecified |

| **Methods of evaluation** | |
|---|---|
| Aim of Evaluation | What are the evaluation aim(s)? Are aims implicitly or explicitly stated? |
| Sampling* | How was the 'sample' obtained. Size? Justification? Saturation of data? Appropriate to address research aim(s)? |
| Data collection* | Observations, semi-structured interviews, focus groups, etc? Research setting/context? How data recorded? Data collection modified during research? Data collection address research aim(s)? |
| Data analysis* | How was data analysed? (e.g. thematically, triangulation of data, saturation of data). Adequate description? Creditability tests? Analysed with sufficient rigor? If so how? |

| | |
|---|---|
| Research relations* | Researcher considered their own role with informants? Considers own biases? If so how? Why particular research setting selected? |
| Ethics | Have the relevant ethical issues been discussed (e.g. ethical approval obtained)? Provide details |
| Findings* | Clearly presented findings? Sufficient data to support findings? What criteria given for selecting examples from data? |
| Transferability* | Sufficient details from research setting/context to determine similarities/differences? How transferable are finding to wider populations/settings? |
| Relevance & Usefulness* | Addresses research aim(s)? Contributes new insights? Suggests further research? what impacts on policy/practice? |
| Quality of study | See note 3 |
| Quality of information | See note 3 |
| Overall weighting | See note 3 |

**Note 1 - Content of IPE**
Based on a slightly modified version of Hugh's typology (Barr, 1996). For the purposes of JET we are using the following three categories:

- Common (where all students/groups learn the same content)
- Collaborative (where students/groups learn about one another in order to collaborate)
- Mixed (where students/groups receive a mixture of above two)

**Note 2 - Educational Outcomes**
Outcomes are based on Kirkpatrick's (1967) model of four domains but will accept / include both the predetermined and unintended outcomes.

*Level 1 - Reaction*
These cover learners' views on the learning experience, its organisation, presentation, content, teaching methods and aspects of the institutional organisation – timetabling, materials, quality of teachers. Second element here is concerned with changes to attitudes to IPE as a result of the event.

*Level 2a - Modification of attitudes/perceptions*
**Outcomes here relate to changes in reciprocal attitudes or perceptions between participant groups, towards patients/clients and their condition, circumstances, care and treatment.**

***Level 2b - Acquisition of knowledge/skills***
**For knowledge, this relates to the acquisition of concepts, procedures and principles of interprofessional collaboration. For skills, this relates to the acquisition of thinking/problem-solving, psychomotor and social skills linked to collaboration.**

*Level 3 - Behavioural change*
This measurement will document transfer of learning to workplace, such as support for change of behaviour in the workplace or willingness of learners to apply new knowledge and skills.

***Level 4a - Change in organisational practice***
**This relates to wider changes in the organisation/delivery of care, attributable to an education programme.**

***Level 4b - Benefits to patients/clients***
**This final level covers any improvements in the health and well being of patients/clients as a direct result of an education programme.**

**Note 3 - Weightings**
*Quality of Study/Research*
Based on the study design, data collection etc. Assess appropriateness of research design to study aims, issues of typicality, issues of reflexivity, ethical considerations and relevance to different stakeholders. On a scale 5 to 1 (lowest =1)
*Quality of Information*
For example, clarity of approach, sampling, analysis, educational significance i.e. importance of change. Clarity of context descriptives. On a scale of 5 to 1 (lowest =1)

*Overall Weighting*
Combined the two scores together (quality of study and quality of information) to provide an overall weighting for each paper.

* Criteria adapted from Critical Appraisal Skills Programme (CASP), *Questions to help you make sense of qualitative research* (www.phru.org/casp/qualitative.html)