The self-assessment of confidence, by one vocational trainee

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SUMMARY. A list of important topics in general practice was constructed and a trainee was asked to indicate his confidence about each topic on a one to five scale. Repeated use showed different confidence ratings by the same trainee, and an attempt was made to correlate factual knowledge by using a multiple choice questionnaire.

Despite important limitations, which are described, this method may be useful in identifying suitable topics for teaching during the trainee year.

Introduction

BOTH trainees and trainer have difficulty in knowing what topics to concentrate on during the trainee year. What does the trainee already know adequately, and how does he become aware of his own deficiencies in knowledge?

This difficulty in defining areas of knowledge and of ignorance in teaching is illustrated in *Knots* (Laing, 1970):

There is something I don't know
that I am supposed to know.
I don't know what it is I don't know,
and yet am supposed to know.
And I feel I look stupid if I seem both
not to know it and not know what it
is I don't know.
Therefore I pretend I know it.
This is nerve-racking since I don't
know what I must pretend to know.
Therefore I pretend to know everything.
I feel you know what I am supposed to know,
but you can't tell me what it is
because you don't know that I don't know
what it is.
You may know what I don't know, but not that
I don't know it,
and I can't tell you. So you will have to
tell me everything.

The dilemma often seems to turn on the problem of 'where to start', so that various ruses for covering up ignorance and uncertainty on one side, and cross-examination and grilling on the other may be avoided, since each of these lessens the chance of a positive and honest relationship developing between teacher and learner. Many of us may remember episodes of pretending to understand a situation and bluffing our way through a ward round in the hope of not being found out.

The problem is further complicated if the trainee was born abroad and qualified overseas. He may be not only more unsure of his ground but even more afraid to admit his deficiency and unable to use the para-verbal indicators such as voice tone and spacing of words which might give the clue that he is unsure, adding yet another hitch to that Laingian knot.

Such trainees might represent one extreme of uncertainty, the opposite of which is brimming self-confidence. It is clear from experience that not all uncertain people are ignorant, and secure people are not always knowledgeable. The problem is for the trainee and the teacher to establish a factual base, so that a teaching programme can be planned at an early stage.

Aim

I tried to remove the element of confrontation by asking my trainee to rate his own confidence by indicating his most obvious strengths and weaknesses.

Method

The list shown (Table 1) was constructed for this purpose in 1974 during the first Nuffield course, and consists of 340 items about general practice. It is general

Table 1. List of subjects of importance to trainee general practitioners.

Tick appropriate number for confidence in your knowledge and ability in each of the following in general practice (1 = no confidence, 5 = fully confident):

	1	2	3	4	5
Infectious diseases					
Influenza					
Types					
World picture					
Complications					
Special risk groups					
Immunization					
Colds and other respiratory infections					
Incubation period					
Complications					
Immunization against					
Rubella					
Whooping cough					
Diphtheria					
Tetanus					
Polio					
Mumps					
Chicken pox					
Measles					
Diarrhoea and vomiting					
Tropical diseases seen in Great Britain					
Smallpox					
Glandular fever					
Infectious hepatitis (Australia antigen)					
Herpes zoster					
ENT					
Catarrhal child					
Diagnosis					
Management					
Otitis media					
Glue ear					
Tonsillitis, sore throat					
Indication for tonsillectomy					
Child					
Adult					
Chronic stuffy nose					
Sinusitis					
Deafness					
Use of audiometer					
Hay fever					
Desensitization					
House-dust mite					
Ménière's syndrome					
Antibiotics (use of)					
Eyes/red eyes					
Injury and foreign body					
Painful red eye					
Corneal ulcers					
Cataract					
Causes					
Timing of treatment					
Post operative problems					
Squint					
Amblyopia					
Orthoptics					
Glaucoma					
Retinoscopy					
Registration of the blind					
Services for the partially sighted					
Chest					
Chronic bronchitis					
Causes					
Smoking, management					
Acute chest infections					
Pneumonia					
Lobar					
Broncho-					
Virus					
Aspiration					
Asthma					
Juvenile					
Maturity onset					
Allergic alveolitis					
Peak flow meter and vitalograph					
Tuberculosis					
Carcinoma of the bronchus					
Varieties of presentation					
Heart and circulation					
Chronic heart failure in elderly					
Potassium					
Digitalis					
Ischaemic heart disease					
Myocardial infarction					
Prevention					
Diet					
Cholesterol					
Triglycerides					
β Blockade					
High risk features					
Management of attacks					
Transfer to hospital					
Management of dysrythmia					
Treat at home?					
Pros and cons of anticoagulants					
Problems of rehabilitation					
ECG use and interpretation					
Management of post infarction depression					
Adverse reactions of β Blockade					
Hypertension					
Screening					
Peripheral vascular disease					
Chilblains					
Cerebral atherosclerosis					
Management of basilar artery insufficiency					
Venous thrombosis					
Ways of presentation					
Anticoagulation					
Obstetrics and gynaecological					
Antenatal care					
Cranbrook criteria of booking					
General practitioner management of					
Normal labour					
Inertia					
Prolonged second stage					
Perineal repair					
Retained placenta					
Postpartum haemorrhage and antepartum haemorrhage					
Asphyxia neonatorum					
Resuscitation of newborn					
Use of flying squad					
Role of district midwife					
Health visitor					
Social services					
Social security benefits					
Maternity fees					

Table 1. (continued)

	1	2	3	4	5
Family planning					
Withdrawal					
Safe period					
Sheaths					
Pessaries					
Cream					
Foams					
Caps and vimules					
Intra-uterine contraceptive device (IUCD)					
Criteria for use, method of insertion					
Progestergen pills					
Combined pills					
Sterilization					
'Difficult' people in family planning					
Teenagers					
Disguised sexual problems					
Religious difficulties					
Socially unreliable					
Menstrual disorders—dysmenorrhoea					
Vaginal discharge					
Menorrhagia					
Menopause					
Post menopause					
Bleeding					
Hormone replacement factors					
Psychological factors					
Infertility					
Male					
Female					
Ovary suppression syndrome					
Abortion law					
Use of hormones					
Venereal diseases					
Cancer cervix and uterus					
Screening (cytology)					
Puberty					
Mastitis					
Male					
Female					
Breast feeding					
Inverted nipples					
Lumps					
Self-examination of breasts					
Paediatrics					
Infant feeding					
Worried mothers					
The child as a symptom					
Developmental assessment					
Management of congenital defects					
Heart disease					
Congenital dislocation of the hip					
Hare lip					
Neural tube defects					
Fibrocystic disease					
Metabolic disorders					
Minor symptoms of a normal child					
Disorders of behaviour in children					
School problems					
School refusal					
Under achievement					
Child guidance					
Brain damaged children					
Enuresis					
Meningitis in infants					
Appendicitis in young child					

	1	2	3	4	5
Cancer					
Early recognition					
Screening					
Terminal care					
Care of relatives					
Relief of symptoms					
Use of radiotherapy					
Cytotoxic drugs					
Abdomen					
Indigestion and peptic ulcer					
Hiatus hernia					
Diverticulosis					
Gall bladder disease					
Piles and fissure					
Obstructive jaundice					
Acute abdomen					
Diarrhoea					
Hernias					
Trusses					
Central nervous system					
Strokes					
Epilepsy					
Headaches					
Migraine					
Tumour of brain					
Multiple sclerosis					
Presentation and management					
Cerebral palsy					
Vertigo					
Rheumatology and orthopaedics					
Rheumatoid arthritis					
Management					
Drugs					
Gold					
Steroids					
Osteoarthrosis					
Back-ache					
Pain in neck and shoulder					
Gout					
Osteoporosis					
Injury management					
Physiotherapy					
Joint surgery					
Postural problems					
Tendon inflammation					
Manipulation					
Fringe medicine—osteopaths					
Psychiatry					
Recognition of disorders					
Depression					
Anxiety					
Reactive tension					
Modes of presentation					
Aggressive }					
Acquiescent } patients					
Jocular }					
Crying }					
Acute psychiatric emergencies					
Suicide					
Schizophrenics					
Mental subnormality					
Community services					
Social services					
Medical social workers					
Clubs and Samaritans					

Table 1. (continued)

	1	2	3	4	5
Mental Health Act 1959					
Family management of mental illness					
Drugs					
Combinations					
Side-effects					
Nocturnal confusion					
Home management					
Insomnia					
Alcoholism					
Alcoholics Anonymous					
Drug addiction					
Drug dependence					
Marital problems					
Sexual problems					
Awareness of doctor/patient relationship					
Family dynamics					
Old age					
Middle age					
Young					
Endocrine disorders					
Diabetes					
Thyroid					
Obesity					
Hidden problems					
Anorexia nervosa					
Skin diseases					
Atopy					
Warts					
Infectious verrucas					
Infestation—scabies					
Urticaria					
Angioneurotic oedema					
Psoriasis and complications					
Yeast and fungal infections (skin and nails)					
Varicose ulcers					
Seborrhoea, eczema					
Malignant skin disorders					
Genito-urinary					
Cystitis					
Trigonitis					
Urinary infection					
Laboratory diagnosis					
Prostatic disorders					
Nephritis					
Cancer					
Haematuria					
Urinary retention and incontinence					
Drugs which can cause retention					
Minor surgery					
Septic finger					
Boils					
Warts					
Minor injuries					
Repair of laceration					
Ingrowing toenails					
Choosing place for treatment					
Surgery					
Hospital					
Organization and equipment of treatment room					
CSSD					
Analgesic and anaesthesia					
IUCD insertion					
Laboratory services					
Investigation of anaemia					
Surgery use of haemoglobinometer					
X-ray department					
Use and abuse					
Therapeutics					
Principles of management					
Supervision of therapy					
Control of therapy					
Repeat prescription					
Prescription charges and exemptions					
Scheduled drugs					
Drugs register					
Dispensary management					
Synergistic reactions					
Antagonistic reactions					
Drug companies' representatives (samples)					
Drug costing					
Analgesics					
Anti-inflammatory drugs					
Antibiotics					
Psychotropics					
Cough mixtures					
Oral contraceptives					
Digitalis					
Diuretics					
Steroids					
Bronchodilators					
Skin preparations					
Anticonvulsants					
Vaccines					
Haematinics					
Hypotensive agents					
Diabetic control					
Antihistamines					
Anticoagulants					
Administration					
Family practitioner committee functions					
Temporary residents					
Work certification					
Maternity benefits					
Maternity claim forms					
Law re: death certificates					
Cremation					
Economics of general practice					
Ancillary staff (ANC 1)					
Problems amongst					
Ancillary staff					
Doctors					
Doctors and ancillary staff					
Accounting					
Practice meetings					
Age/sex register					
Other registers					
Cross checking systems					
Variety of record systems					
Practice team					
For and against					
Jealousies					
Methods and criteria for liaison and referral					
Health centres					
The doctor as a patient					
Problems of special relationship					
Extras					
Appointment systems					
Services for the disabled					
Battered baby (suspected)					

rather than specific and each 'molecule' can be regarded as being composed of 'atoms' of more detailed knowledge. Modifications of this original list are now being used in many different training schemes.

The trainee was given the list after two months spent acclimatizing in general practice and asked to indicate his score on a one (no confidence) to five (full confidence) rating. The whole rating list was completed in about 15 minutes. It was repeated after a further four, and then eight, months in the practice.

At the time of the third scoring a 50-item multiple choice questionnaire (MCQ) was completed as well, of the type previously used by the Royal College of General Practitioners, in which only one out of five answers was correct. Negative marking was not used.

Teaching

Tutorial teaching was then concentrated on those items in which the trainee had indicated low confidence. It later became clear that subjects identified as "very high confidence" also required tutorial work.

The trainee also attended special supplementary teaching, such as an obstetric training day release course and discussion groups on the doctor/patient relationship.

Results

During the year, those topics on which teaching had been selectively concentrated were given higher rating scores by the trainee. Scores for subjects on which no teaching had been given remained unaltered.

Secondly, there was a shift in ratings away from scores of five to four, particularly in the second test, and then back to five again in the third test.

This suggests that teaching was effectively raising the trainee's confidence in those topics selected as a result of the questionnaire, and that this is not a simple matter of a general increase in personal confidence as the untaught topics remained with low scores.

In subjects where the confidence score diminished, this presumably illustrates the impact of general practice experience on topics which had previously been viewed only with the eyes of hospital practice. Alternatively it may indicate the general lowering of a trainee's confidence in his own capabilities which often occurs in the early part of the trainee year.

The trainee scored 31 out of 50 (62 per cent) on the multiple choice questionnaire at a time when his mean confidence score was 4·05 out of 5 (81 per cent of the maximum).

The MCQ was not closely matched with the items on the scale, and hence one would expect a disparity between the results in the confidence rating and the MCQ score. When items in the MCQ which were not related to the grid were removed there was a closer alignment between the confidence rating and MCQ scores.

If this system is to be used more generally it will be worth while producing an item based MCQ with which to attempt to contrast a test score with a confidence score.

Discussion

It is possible that doctors perform best when they have confidence in their ability, and they may refer, reject, or ignore problems which they do not understand. There is, however, an uneasy complex relationship between self-confidence and sensitivity.

Low confidence scores could indicate ignorance but could also indicate increased sensitivity to problems. Similarly a high confidence score could indicate either adequate knowledge or simply that the trainee has never been challenged deeply enough about the topic concerned.

Hence it may be necessary to explore not only those subjects with a low confidence rating but also those in which the highest confidence scores are given.

Limitations of the method

The list is limited to my own personal suggestions and obviously can be improved by discussion with colleagues. The items are not of uniform size or importance and need further modification.

The multiple choice questionnaire could not be matched closely to the list of items and there were considerable difficulties in method in correlating results. It may be necessary to devise new multiple choice questionnaires in order to examine factual knowledge objectively by this method in relation to confidence ratings by trainees.

This list can, of course, be used for a variety of purposes by trainers, but in my opinion it will be of no use in any form of summative or terminal assessment.

I would be pleased to co-operate with other trainers and trainees in modifying and defining this instrument further as I am sure that many other trainers and trainees will have found other and perhaps more useful items to include; I would welcome information about them.

Reference

Laing, R. D. (1970). *Knots.* London: Tavistock Publications.

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Addendum

Pressure of space prevents us from showing blank spaces in Table 1 which were left between sections on the original questionnaire for trainers and trainees to add further topics.