APPENDIX 6

SUPPORTED PROBLEM-BASED LEARNING FACILITATORS' GUIDE

FACULTY OF HEALTH SCIENCES

UNIVERSITY OF CAPE TOWN

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Contents

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Guidelines for an open learning climate in SPBL sessions: thanks to Liverpool Medical School

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Foreword

The writing of this guide is a developmental project. The Education Development Unit (EDU) will continue to add necessary and useful information and guidelines based on our on-going interaction with Course Convenors and yourselves as Facilitators. Your comments and feedback will form an important part of the development of this handbook.

Introduction

The aim of this guide is to introduce facilitators to:

1. Core features of the new MBChB curriculum at Faculty of Health Sciences (FHS), University of Cape Town (UCT)
2. Supported Problem-based Learning, one of the educational methods used in the new curriculum
3. The process of facilitation in Supported Problem-based Learning in practice.

Core Features of the New MBChB at FHS, UCT

The new MBChB at FHS differs from the previous curriculum in the following fundamental respects:

a) Curriculum Goal: The MBChB Graduate is a Generalist Practitioner competent to practice at Primary, Secondary and Tertiary Levels of Health Care.

b) It is an Outcomes-based curriculum: Learning outcomes or graduate competencies determine what is to be achieved and assessed and therefore what is to be taught and learnt. Consequently the choice of instructional and assessment methods are to be aligned with the competencies contained within the 'Graduate Qualities' document in Appendix A.

c) A key consequence of FHS Outcomes-based curriculum is the emphasis on Performance-based assessment, particularly in the senior clinical years.

d) The educational philosophy has shifted from teacher-centred to student-centred. As a consequence multiple educational methods that aim to assist students evolve into self-directed learners in order to promote life-long learning are being employed.

e) It is a Primary Health Care-led curriculum: the principles and approach of PHC are being integrated from the first to the final semesters.

f) A biopsychosocial approach has been adopted to promote whole-person-care. A key implication is that relevant psychosocial sciences are integrated with the basic health and clinical sciences (Note: 'social' includes the cultural, economic and political).

g) The pre-clinical and clinical curricula divide has been replaced by the gradual integration of the clinical with the basic health sciences from the first semester.

h) A significant component of the syllabus (content) has been reorganised in terms of a core that is (body) systems-based rather than disciplinary-based to promote horizontal (within a year) and vertical (between years) integration of the psychosocial and public health with the basic health and clinical sciences.

i) The content is selected primarily in terms of relevance to the South African Health needs i.e. the most common diseases and illnesses and areas of greatest health need.

The implications of (e) to (g) above is that assessment methods need to be selected to enable assessment of students' capacity to apply theory to practice and integrate knowledge from contributing disciplines.

Supported Problem-Based Learning at FHS, UCT

As can be seen in the Table below, Supported Problem-based learning (SPBL) is one of a number of educational methods used to promote self-directed learning (SDL)[1]

Educational Method	Semester	Course Title
Supported PBL	1 to 5	Life Cycle; Transitions in Health; Integrated Health Systems
Facilitated small group, co-operative learning	1 to 5	Becoming a Professional; Becoming a Health Professional; Becoming a Doctor
Project-based Learning: a) Research Modules b) Group Research and Health Promotion Projects	 4, 6 & 8 7 & 8	 Various subjects Public Health and Primary Health Care
Community-based Education & Service Learning: Clinical practice and internship in the form of the Apprenticeship model: learning and teaching occurs primarily at clinical locations distributed between Primary, Secondary & Tertiary Levels of Care. Where on-campus teaching and learning does occur, it is mainly in an interactive mode between learners and tutors/facilitators.	2 to 5 ; 7 & 8 6 to 12	Becoming a Health Professional; Becoming a Doctor; Public Health and Primary Health Care Clinical Blocks, e.g. Psychiatry with Geriatrics and Paediatrics, with varying degrees of integration between these blocks; integration also occurs with the basic health sciences and is reflected in integrated assessments.

Supported Problem-based Learning (SPBL) consists of

a) small group discussions of cases following a structured 8-step PBL process
b) educational activities to support the small group discussion.

The cases are scenarios or vignettes that are derived from clinical settings. In the earlier years cases are more likely to be scenarios than problems-to-be-solved, as students do not yet have sufficient knowledge to solve clinical problems. As students progress through the curriculum they should increasingly be given cases that are authentic clinical problems-to-be-solved.

The cases are the vehicle by which students acquire the knowledge, skills and attitudes that make up the curriculum objectives applicable to those particular courses (see above) and lay the foundations for learning in the Apprenticeship Model adopted in the clinical years. This reflects the horizontal and vertical integration of curriculum objectives.

Consistent with the relevance requirement of the new curriculum, the main criterion for selecting cases is the prevalence of health needs in the South African or African contexts. The cases, supporting activities (see below) and curriculum objectives encompass the core knowledge to develop a generalist graduate competent to practice at the three levels in the South African health care system. Hence design teams and teaching staff are requested to avoid including the unusual or unique conditions when discussing the cases and providing support activities. Expansion of core to the unusual or unique is to be taken up in postgraduate studies. In the clinical years there are some serious conditions that may not

[1] Self-Directed Learning: The process by which students develop a range of skills that will enable them to regulate and take increasing responsibility for their own learning, for example, research skills, time management and goal setting. In the process students evolve a critically reflective disposition to acquiring and applying knowledge. See Miflin, B (2004) Adult Learning, self-directed learning and problem-based learning: deconstructing the connections in *Teaching in Higher Education*, 9:1, 43-53

be common, but that students need to recognise for referral.

The cases are written by curriculum design teams consisting of the participating disciplines relevant to the particular course. In the first two semesters the cases are theme based: Life Cycle and Transitions in Health. In semesters 3 to 5, the cases are 'body' systems-based. All cases have been written in order to encourage students to integrate clinical, basic health, psychosocial as well as public health sciences' concepts, questions, problems and themes or issues. The scope and depth of integration varies between cases, semesters and year levels.

The small group discussions of cases are augmented by supporting activities and resources, for example: lectures, tutorials, practicals, prescribed readings, recommended readings, e-learning, etc. that provide varying degrees of support to the cases. Every effort is made to provide the support activities timeously for students to benefit from and apply in their case session discussions.

The aim of the small group discussion of cases is to facilitate dialogues

- Amongst Students
- Between students and the supporting activities
- Between students and the facilitator.

The purpose of promoting multiple dialogues is to enable students to gradually take responsibility for their own learning by:

- deploying prior learning
- identifying what they do not know
- identifying what they are uncertain about
- identifying what they are unclear about
- identifying misconceptions
- using the above to set learning objectives
- pursuing the learning objectives, refining them and on the basis of accumulated learning, developing deeper insights.

Some of the main assumptions about how learning occurs that underlies FHS's approach to SPBL are:

Shotter (2003) on the need for dialogic interaction and the creation of dialogically structured events:

> *"How do we see that we don't know? How do we see beyond the surface appearance of things? How do we see connections and relations within a living whole, a whole constructed or created from many fragmentary parts, all picked up in the course of one's continuous, living, responsive contact with a particular circumstance in question, whether it is a text, a person"* (ibid, p17), a diagrammatic representation of some aspect of anatomy?
>
> *"Is learning possible without at least, disorientation and confusion", (ibid) a sense of a puzzle?*[2]

Lederman (2003) on misconceptions:

> *"I believe that one can structure learning processes that train the mind to make this clear separation between what we do know and understand and what we have casually included as knowledge which is knowledge faux. In the misconceptions of children: light does not travel, it shines. Heat does not flow, it feels. Misconceptions abound".*[3]
>
> The small group discussion or multiple dialogues at FHS is structured in terms of a deliberate

[2] Shotter on the need for dialogical interaction and dialogically structured events: Shotter, J (2003) 'Joint Action, and the Chiasmic Inter-relating of Spontaneously Responsive, Bodily Activities' in *The Book of Problems or What We Don't Know About Learning*, Association for Educational Communications and Technology, http://www.learndev.org/BOP-AECT2002.html

[3] Lederman, L (2003) 'Can We Know Too Much' in *The Book of Problems or What We Don't Know About Learning,* Association for Educational Communications and Technology,

sequence of eight steps that are a modification of those adopted at the University of Maastricht, Netherlands. These will be elaborated below.

A gradualist approach to increased student responsibility for their own learning at FHS is predicated on

- Many South African school-leavers being under-prepared for the kinds of learning required at university level. This may change in due course as a result of the recent restructuring of the schooling system.
- The kinds of higher-order cognition required at university level take time to develop, for example, synthesis, evaluation, testing hypotheses, theorising, etc.

The approach to learning entailed in SPBL is unfamiliar to most students entering the Faculty.

PBL APPROACH	**TEACHER-CENTRED APPROACH**
Courses are designed to explicitly promote active student learning	Course design fosters a passive approach to learning among most students
Students are expected to learn to integrate knowledge across disciplines	Students follow the direction of teaching which tends to be discipline-based
Greater direction is given concerning what to learn and how to learn	In theory, lecturers give direction to students about what to learn but not always how to learn. In practice, in the traditional MBChB, less direction is given to students regarding what to learn and how to learn than is currently the case in the new curriculum.

Thus, your role as a facilitator is to

- Introduce students to the process of group discussion of cases (using the 8-step process)
- Assist their development in the skills and attributes necessary for effective group interaction
- Introduce and provide support for students' development of higher-order cognition.

Facilitating the Group Process

Core considerations for facilitators when facilitating the group process are

- Fostering an environment that balances individual and group needs
- The need to be mindful that group dynamics change as members of the group learn to work and interact together and therefore skills required to facilitate may vary in the life-span of a group **(Appendix B** provides some valuable suggestions for developing your skills as a facilitator).
- Helping students to

    - develop confidence in their own abilities and the process of SPBL entailed in the eight steps
    - use the steps rigorously and systematically so that students' approach to learning and studying is structured and focussed
    - respect team work
    - deal with criticism
    - monitor and evaluate their own and the group's process in learning

For students new to SPBL, you as facilitator are a key to their successful use of time and resources. From the beginning you can help foster a climate in which they feel comfortable to participate maximally. The philosophy of student-centred learning requires that the rules by which the group agrees to operate (ground rules) are developed, articulated and protected by the students. Examples of

guidelines or ground rules you can give students for promoting an open working climate in the SPBL sessions:

- compulsory attendance
- always be on time
- say what is on your mind
- there is no such thing as a stupid idea or question
- it is important to express your thoughts
- recognise that knowledge is acquired by identifying what you don't know and therefore need to explore
- express your opinions if they differ from the consensus of opinions
- encourage other members to participate
- listen to each other
- treat each other with respect.
- appreciate and respect that we come from diverse cultural, linguistic and educational backgrounds
- efforts to express oneself clearly in English which may not be one's home language may take time and requires a supportive, empathetic environment to gain confidence in developing English-speaking language competency for functioning in academic and health services environments
- fulfil your group responsibilities
- co-operate with the chair and scribe
- raise suggestions and concerns to promote group learning and work

Confidentiality: Address how the group will handle personally sensitive information that may be introduced in the course of discussion.

Facilitating Higher-Order Cognition

You will have information that gives you an overview of cases the students are studying. This will enable you to steer the group in the appropriate direction where necessary. Your role is ***not*** to give information didactically. Rather, it is to use your subject knowledge and knowledge of cognate areas, as well as experience of constructing knowledge in your subject area, to facilitate students' development of higher-order cognition in all subject areas.

When facilitating the development of higher-order cognition, as facilitators you need to USE your **subject knowledge** AND knowledge of **cognate subject** areas AS WELL AS experience of **constructing knowledge** in your subject area to **LISTEN** to students' attempting to acquire understanding within and between the contributing disciplines, and guiding them when they are not able to help each other. In order to assist and guide students you need to

a) **LISTEN** to what students are identifying as questions or limitations in their knowledge
b) **ASSESS** whether students are using prior knowledge that is **NAÏVE** or based on **MISCONCEPTIONS**
c) **LISTEN TO HOW** students are **REASONING:** are they exploring connections between ideas with scientific rigour or are they remaining superficial and descriptive?
d) **ASK THE KINDS OF QUESTIONS** THAT ENCOURAGE STUDENTS TO
    - LOOK for and EXAMINE **conceptual links** between their prior knowledge, support activities, cases and discussion within the group
    - RE-EXAMINE their **misconceptions**
    - APPLY theory or principles to cases and to other contexts
    - UNDERSTAND THE USE OF DEFINITIONS in the **development of hypotheses**
    - SUBSTANTIATE knowledge **claims**
    - DEVELOP A CRITICAL STANCE towards data sources, evidence, etc.

As a facilitator you need to be mindful of promoting students' progression and increasing competency in both group process and higher-order cognition. The table below indicates a rate of progression that has been reviewed and endorsed by current course coordinators, and should guide your practice as a facilitator.

The main difference between facilitating in the first year (Generalist Facilitation) and subsequent years (Domain/Specialist Facilitation) is that in later years

- less attention may need to be given to the group process due to increased student proficiency; it is, however, possible that a group may be dysfunctional for a variety of reasons in later years and would thus need assistance in managing group dynamics
- questioning and facilitating becomes more demanding as
    - the Basic Health and Laboratory Sciences, Psycho-Social, Family Medicine and Public Health contributions deepen
    - expectations of students' ability to integrate and apply knowledge from these subjects to a single case increase, as well as applying principles to different contexts
    - the body of discipline-based prior learning becomes more developed and complex.

Some important attributes of SPBL Facilitators

Facilitators should:

- be well informed about the process of SPBL
- be well informed about the running of the semester
- encourage students to explain things to each other
- encourage the group members to consider each other's points of view
- challenge students to substantiate and reflect on their own views
- be appreciative of linguistically and educationally diverse backgrounds and the challenges these pose for all students in the group process
- show respect for students' opinions
- try to help students identify how their behaviour affects the group learning process.

STUDENT PROGRESS IN THE SPBL PROCESS

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SEM 1	**SEM 2**	**SEM 3**	**SEM 4**	**SEM 5**
Students are: 1) introduced to SPBL and begin to learn through practice	Students begin to consolidate learning how to do SPBL	Students consolidate learning and practice SPBL on the basis of experience	Students are experienced in SPBL	Students are confident in SPBL and are Self-Directed Learners (SDLs)
2) introduced to group process	Students practice group process	Proficient in group process	Expert in group process	Expert in group process
3) introduced to higher-order cognition	Develop higher-order cognition	Expanding higher-order cognition	Deepen higher-order cognition	Higher-order cognition with confidence
GENERALIST FACILITATOR **Uses Knowledge base to:** a) monitor learning process b) promote students rigorous following and use of 8 SBPL steps c) promote students' dealing with the limitations in higher-order cognition d) facilitate critical- and scientific reasoning at an introductory level		**DOMAIN/SPECIALIST FACILITATOR** **Uses Knowledge base and research experience to:** a) monitor learning process b) monitor limitations in higher-order cognition c) promote students' dealing with the limitations d) facilitate critical- and scientific reasoning with increasingly complex material, and possibly clinical reasoning if it is integrated earlier		

The Supported Problem-Based Learning Process

You will have approximately ten students in your group, and in most cases there are three SPBL sessions per case that span either two or three weeks.

As outlined in Appendix B, Bentley suggests three broad categories that shape the role of the facilitator: Supportive, Persuasive and Directive. Irrespective of which of these modalities you judge necessary at a particular moment in the group process, giving students' responsibility is a fundamental function and aim of an effective facilitator. In the SPBL context, giving students responsibility from the start is what underlies the chairing and scribing roles allocated to students' .The chairperson guides the discussion; and the scribe records relevant and key issues. These roles should be allocated to different students at each session to enable each student to gain experience in the respective roles. Appendix E provides an elaboration of the roles of chairperson and scribe, and elucidates the difference in roles between chairperson and facilitator.

Experience and the literature shows that students appreciate a strongly structured approach at first. The 'Eight-Step' process is intended to assist in this regard.

THE EIGHT-STEP PROCESS: AN OUTLINE WITH NOTES

NOTE:
THE STEPS PRESENTED BELOW ARE WRITTEN FOR STUDENTS WITH NOTES TO GUIDE THEM. THE NOTES ALSO FUNCTION AS CUES FOR YOU AS FACILITATORS TO ASSIST THE CHAIRPERSON AT RELEVANT POINTS.

STEPS:

1. Clarify:

Make sure that everyone understands the meaning of words, terms and phrases. This should brief.

Notes:

- At this stage you are looking only for a basic understanding or simple definitions to make communication easier amongst yourselves. You may want to reach a deeper understanding or meaning of particular terms by discussing or explaining them (conceptual analysis). Keep that for the step relating to Interrogation and Analysis.
- Be sure to raise each and every item that needs clarification in this first step. It will assist the group more if you ask basic questions of clarification now, and not in later stages when the group should be engaged in deeper analysis and explanation.

2. Identify key issues:

Decide on and record the '**key issues**' arising from the specific case. Motivate briefly why something should be regarded as key if there is not initial agreement.

Notes:

- The motivation should relate to the case under consideration and be kept brief. Your group needs to reach general agreement about what to identify as key issues.
- Try to be as specific as possible, for example, if the case is about pregnancy at 6 weeks, specify the stage of pregnancy and not just 'pregnancy'.
- A mind map can be helpful here. This can be used again in steps 3 & 4 when you elaborate on your prior knowledge and look for connections.

(**'Key issues'** are the issues that you identify as being important to understanding the case.)

3. Record Prior Learning; Interrogate and Analyse

Put forward/table ideas, views, concepts acquired previously that you consider relevant to the key issues and concepts identified in this context. Examine and probe what has been put forward.

Notes:

- It is not enough to say that you know something. You need to clearly state the content of that knowledge.
- Draw on your existing body of ideas, information and views to select what is relevant for the case.
- Remember that at this stage, your prior learning may be untested. You are putting it forward so that others can consider it.
- Deal with each key issue in turn. Record prior learning, then discuss, explore and evaluate for validity in relation to other members` knowledge. Challenge what has been put forward.
- As you proceed with recording, interrogating and analysing your prior learning, you might already start identifying limitations in your knowledge.
- Flag them and come back to them in the steps that follow.
- Remember:
    - You only really know what you know, or for that matter, what you may be uncertain about or have misunderstood when you hear other people's reactions to your thinking and ideas.
    - It is therefore important for all members of the group to state what it is they do know in order that the group as a whole and the facilitator have the opportunity to constructively and critically examine what each member says they know.

4. Describe connections and Prioritise:

Look for and describe connections between the different points. Suggest and explore explanations. Groups should consider possible causative, associative, hierarchical connections.
Prioritise: decide what is most important to pursue, focusing on limitations that you have identified in your knowledge.

Notes:

- This discussion may lead to new issues being raised and added to the list of issues in step 2.
- When ideas are grouped together, it makes it easier to examine possible explanations.
- Using the mind map created in step 2 can be very helpful to emphasize the connections between key issues. You need to state how and why these issues are connected.
- Make sure that your discussion is related to the case.
- There may be some areas of revision involved in what you are identifying. Prioritise limitations which point you to new knowledge, not those which require only revision.

5. Formulate Learning Objectives:

List the limitations in your knowledge that you have identified during the previous steps. Identify any additional limitations **from your discussions.** Formulate tasks that you must perform to deal with each limitation. These are Learning Objectives (LOs). Check that the LOs relate to the case.

Notes:

- Formulate Learning Objectives using **action words (e.g. List, describe, analyse). These will guide you on the breadth and depth of the knowledge** you will be required to explore in order to understand the case at this point in your studies. (see Appendix F)

6. Evaluate:

Group interaction; part played by participants; what promoted and what hindered learning.

Notes:

- Identify what is working and not working to promote your learning. This is the opportunity for you to agree to the best ways of proceeding more efficiently.

STEPS 1- 6 MAKE UP SPBL SESSION 1

Notes to Facilitators Regarding the First SPBL Session:

You may encounter a range of experience and prior knowledge within your group. It is important to tap this resource, as it is the foundation of the group's learning. At first, students may be reluctant or fearful to expose what they feel is their ignorance. An open and supportive working climate will help them. It is vital that you work with the chairperson to create this kind of environment.

A practical tip for getting step 1 underway is for the chairperson to ask for a volunteer to read the case out loud to the group.

7. Go and Learn:

Gather information and ideas from reliable sources to deal with the limitations. Use the full range of useful resources. Organise responses to each Learning Objective, making summarised notes.

Notes:

- The SPBL process will collapse if you do not go and search for new knowledge to meet your Learning Objectives.
- Use **ALL** the resources at your disposal, such as the **resource pack, lectures, practicals, and group discussions**. When reading you should take note of the learning objectives and the context of the case. Make notes relating to each learning objective **in your own words.** These notes should be a **summary of your understanding** of the learning objectives. This is an important step in becoming a self-directed learner.
- All students should prepare responses to all Learning Objectives. Without doing so, you will not be in a position to listen critically, probe and challenge, and assess the accuracy of what others are saying.

8. Report-Back (PBL Session 2 or 2a and 2b):

Present what you have learnt. Identify your sources, explaining what you now know and how it clarifies and/or corrects and/or builds on what you knew before. This should be new knowledge not a repetition of the prior learning elaborated in session 1. Thoroughly probe reports and examine differences, justifying conclusions. Apply the results of your study and discussion to the case.

For each LO:
Evaluate the accuracy and relevance of new (and prior) knowledge.
Identify further limitations in knowledge related to the case and emerging from the new knowledge.
Refine Learning Objectives. This can mean revising original LOs and/or formulating new LOs.

(See **Appendix D** for a discussion of each learning objective diagrammatically illustrated).

Notes:

- The best way for you to find out if you really understand and know what you have researched is to try to explain this to the group in your own words and with minimal use of your notes. If you are confused or stuck, someone else in the group will help you, just as you will be expected to help them if they are stuck. You need to present what you have learnt, identifying your sources and **explain what you know** and **how it clarifies or builds on or changes what you knew before.**
- If your group, with the help of the facilitator, is unclear or uncertain at this stage about any issue or concept that you have been discussing, the group needs to formulate a specific question around the uncertainty. Some individuals need to be mandated to go to the relevant subject expert for assistance.

Notes to Facilitators Regarding the Second SPBL Session

The aim of the second session is to check on progress and to develop students' understanding. The students must state the sources and references they have used. They then report back on what they have discovered. It's not enough for students to say *that* they know, but rather to elaborate on ***what*** they know and ***how*** they know.

All information brought back to the group is evaluated critically, particularly in relation to its accuracy and relevance. Accuracy can be tested against questions like: What is the evidence for that?" Does that fit with what we discussed last week?"; "How could you check that?". Relevance is tested against the learning objectives and the case.

It should be possible for students to refine their ideas, discarding those that are neither useful nor accurate. They should also be able to develop ideas by more closely applying them to the case. At the end of the discussion of each LO students should state clearly how the LO information relates to the case. They should also compare their new knowledge with their prior knowledge in session 1:
- What did you not know/understand about this?
- What misconceptions have been clarified or corrected?
- What new knowledge/insights have you gained?
- What do you still need to know?
- How does this link to other LOs you have discussed?

This will undoubtedly uncover some areas of uncertainty or misunderstanding, and possibly indicate other areas that need investigating. The group then needs to further *clarify their learning objectives*, re-prioritise if necessary, and identify further measures necessary to meet these learning objectives. They then go away again to work. It is useful to move through each objective in the same manner.

During report back, the intention is for students to speak to each other in an informed way. They should not read large sections from texts. Students should develop their own summarised notes in relation to each learning objective. They can use these notes as an aid in their report back to the group.

When students clarify their learning objectives, this could entail:
- better understanding of existing learning objectives
- revising existing learning objectives
- formulating new learning objectives
- identifying more clearly what needs to be done to meet specific learning objectives.

8. Report-back and Evaluate (SPBL Session 3):

Same process as SPBL session 2.

Evaluate group interaction; part played by participants; what promoted and what hindered learning.

Notes to Facilitators Regarding the Third SPBL Session:

The third and final session in the SPBL cycle is there to 'tie everything together'. The students *report back in a similar manner to the second session*, without using notes if possible. The information should be familiar to them by now. Discourage 'mini-lectures', but encourage discussion. Try to ensure that everyone takes part, preferably without resorting to going around the table. During this final session students can identify further avenues to pursue, understanding that time and other resources may not allow for that. Students should evaluate the acquisition of their knowledge over the duration of the case. What was unknown and is now known, familiar and understood. What new insights have they gained? What knowledge has been deepened and broadened?

(See **Appendix C** for a summarised version of the steps in the (SPBL) process).

Notes: About SPBL in general

There are four things that need to be emphasised, as they are crucial if SPBL is going to work for you and your group.

- The success of each step and your overall learning depends on how thoroughly you do the preceeding steps. **Don't take short-cuts and don't jump steps.** Doing this will only create confusion and uncertainty later in the process and require you to go backwards to sort it out.

- You need to say what you know and how you know it. Don't just say "We did that at school" or "We all know what a … is". Talk about what you know, compare ideas with your fellow group members, see if there are any differences of opinion. Challenge and explore expressed views, ideas and facts.

- Remember to try and work out why you think something. Where did you get the idea? Does it hang together with other things you know? Does it make sense? Do the other people in the group think the same? If not, why not?

- **Evaluation is a crucial part of the SPBL process.** SPBL works best when you take responsibility for your own learning. This means that you must individually, and with your group, keep your attention on your own learning process You need to discuss how you, the group and the process is working at the end of EVERY session. **This evaluation must become a guide to action**. It must help you identify and develop the learning strategies and activities that work best, and help to deal with problems in your individual and group learning processes. As an SPBL facilitator you must help them do this.

Preparation for SPBL work

At relevant points throughout the Semester facilitators will be briefed for their SPBL work. At these briefing sessions, facilitators will be given:

- an overview of all structured learning activities such as information on lectures, practicals and workshops.
- details on the cases, including key issues and concepts.
- opportunities to review the PBL sessions, improve the content and process of facilitation through critical self-reflection and discussion, and identify training needs.

Evaluation of SPBL

The Faculty evaluates its programmes with a range of methods, including student feedback, to allow problems to be dealt with as soon as possible, to improve curriculum design and process, and to promote student and staff development. For this reason, allow for extra time at the end of each session for feedback regarding the SPBL experience. Students will *evaluate* the performance of the group, the chair, scribe and facilitator in the group as well as what helped or hindered learning.

Evaluations will have semi-formal (discussion) as at the end of each session, and formal (written) aspects.

Formal written evaluations.

a) Evaluation of the SPBL process
Once a semester students will complete a computerised evaluation of the case and the supported learning activities. The results are made available to the design team.

b) Individual student evaluation in the SPBL process
Once a semester, usually mid semester, the facilitator will also evaluate individual students' participation in the SPBL process. You and the student will complete the same student self evaluation forms independently. You may will be required to initiate one-on-one discussions with each student in your group once you have seen and reflected on the students' evaluation forms. A student's underestimation of their ability is as important as overestimation.

Informal evaluations

In addition to the formal feedback from the students about the SPBL process, it is also important to encourage them to regularly analyse the group process and their progress at learning. This may be done at the end of *every* SPBL session. Rather than relying only on general questions, such as, "How did you feel?" try to be specific, and think about possible questions for the evaluation whilst you are listening to the students' discussions.

For example, " Even though I tried to get you to follow through a reasoning process, you all ignored my attempts. Why was that? What was happening that I perhaps missed?"

" I noted that at a particular point when you were discussing……., everyone seemed to run out of steam, but refused to take a break. Discussion was very superficial at that stage. How can we remedy such a situation in future?'

Dealing with Problems in SPBL

There are a number of problems that groups might experience at some time or another.

It is important to recognise that problems can be dealt with, usually by asking the group to deal with difficulties themselves. They have been involved in working out the ground rules and so should willingly protect them. It is the job of the chairperson to try and make his or her colleagues respect the ground rules. Sometimes, of course, that will be very difficult, and the job of the facilitator is to assist the chairperson in doing so.

It is quite likely that most students will experience personal problems at some stage of their undergraduate career. In some cases this will affect their work. As you will see the individual students in your group more regularly than anyone else, you will be well placed to identify potential problems at an early stage.

Support for Facilitators

The EDU and course convenors will run regular briefing, debriefing and training sessions, and facilitators are strongly urged to attend as many as possible. Dates will be circulated to facilitators (by the course convenor).

Facilitator absences

If you know in advance that you cannot attend a SPBL session, or if you are sick, then it is your responsibility to inform the Courser Convenor who will make arrangements for a colleague to act in your place.

Support for Students

Personal support for students is available, mainly through the personal mentor scheme. This can be accessed through Ms. Veda Naidoo or Dr. Cynthia Sikakana (see useful telephone numbers – Page 14)

You are not the student's personal mentor, so you need not assume responsibility for helping the individual student. Referral is an appropriate response. If you suspect a personal problem, then you should consult, or suggest the student consult the Course Convenor.
You can also refer a student directly to specific services within the University.

Absent students

Semester activities are compulsory. Each facilitator will be expected to keep a register of attendances of SPBL sessions and note absences. The Course Convenor will keep a record of these registers and take action where appropriate.

The whole of the undergraduate medical course is designed to help students develop core competencies. Each organised learning activity is of value (in terms of learning and personal development). For these reasons, all semester activities are core and compulsory. Students will be expected to attend all learning activities (SPBL sessions, workshops, practicals, lectures) and only valid reasons for absence will be accepted. If students are likely to be absent, for personal or medical

reasons, it is their responsibility to inform their group facilitator as soon as possible. Valid Medical Certificates or written explanations for other reasons for absence must be given to Ms Tarryn- Lee Jamey, in the Undergraduate Student office. Absence, without any given reason, on two or more occasions must be reported to the Course Convenor who will report to the relevant Head of Department.

These rules may appear to be harsh in a mature and student-centred environment, but they are designed to reflect the future intended professional standing of students.

In exchange for their attendance the Faculty will give students all possible educational and academic support.

If you have too few students to run a meaningful session, then negotiate with them the best course of action; re-schedule the session (perhaps without you), or reschedule the work between sessions. As soon as everyone is together again, try to get to the bottom of any problem.

Useful Telephone Numbers

Portfolios	Person	Telephone	Email
Director of the Education Development Unit	Ms. Nadia Hartman	406 6630	Nadia.Hartman@uct.ac.za
Senior Secretary Education Development Unit (EDU)	Ms. Nondumiso Mginywa	406 6646	Nondumiso.Mginywa@uct.ac.za
Curriculum Development Education Development Unit	Ms. Melanie Alperstein	406 6669	Melanie.Alperstein@uct.ac.za
Information Technology & Education Education Development Unit	Mr. Gregory Doyle	650 3990 650 6507	Ken.Masters@uct.ac.za
Portfolio Manager – Student Support	Dr Cynthia Sikakana	406 6480	Cynthia.Sikakana@uct.ac.za
Deputy Portfolio Manager – Student Support	Dr Anwar Mall	406 6227 406 6168	Anwar.Mall@uct.ac.za
Undergraduate Administrative Officer	Ms Veda Naidoo	406 6559	Veda. Naidoo@uct.ac.za
First Semester Course Convenor	Dr Geney Gunston	406 6249	Geney.Gunston@uct.ac.za
Second Semester Course Convenor	Dr Geney Gunston	406 6249	Geney.Gunston@uct.ac.za
First and Second Semester Secretary	Mr. Keith Flandorp	406 6710	Keith.Flandorp@uct.ac.za
Third Semester Course Convenor	Dr Charles Slater	406 6276	Charles.Slater@uct.ac.za
Fourth Semester Course Convenor	Dr Jenny Ramesar	406 6562	Jennifer.Ramesar@uct.ac.za
Fifth Semester Course Convenor	Dr Jenny Ramesar	406 6562	Jennifer.Ramesar@uct.ac.za
Third to Fifth Semester Secretary	Ms. Ayesha Dantie	406 6363	Ayesha.Dantie@uct.ac.za

Appendix A

QUALITIES OF UCT MEDICAL GRADUATES

1. Our graduates are committed to delivering safe and effective care.

- They are skilled in the medical sciences and understand the scientific foundation of medical practice and public health practice.
- They possess sound clinical and patient management skills, are able to recognize and manage common medical conditions and emergencies, and are competent in the performance of core clinical procedures.
- They are committed to improving quality and safety in patient care, are committed to the most effective use of limited resources, and their practice will wherever possible be evidence-based.
- They will make effective use of all health-related resources and sources of information, including electronic information technology.

2. Our graduates are committed to patient-centred care

- They respect their patients' values, preferences and expressed needs, and will engage their patients as equal partners in decision-making.
- They are compassionate, empathetic and committed to advocacy on behalf of their patients.
- They understand the importance of personal, socio-economic and cultural factors in determining health and in limiting the effectiveness of their own interventions.
- They are sensitive to their patients' personal, ethnic, social-economic, religious and cultural background, and will seek to overcome the limitations on effective patient-centered care which result from differences in language, social status and cultural background.

3. Our graduates are committed to life-long learning.

- They are committed to a lifetime of critical self-appraisal and improvement.
- They will continuously seek out, appraise and assimilate new knowledge in order to remain abreast of developments in the health sciences, and will incorporate these developments into their practice.

4. Our graduates are open-minded, critical thinkers and effective problem-solvers.

- They will prove skilled in problem identification, analysis and management, both in the specific sense of clinical diagnosis and management, and in the broader sense of problem-solving in relation to research, practice management, administration and health promotion.

5. Our graduates are professional, ethical, honest and humble.

- They understand the moral and ethical principles on which medical practice is based as well as the legal responsibilities of the profession.
- They practice in accordance with the highest standards of both ethics and professionalism.
- They will acknowledge their limitations and their need for ongoing professional growth.
- They acknowledge the equal status of their patients and of their colleagues in other health-related professions in both health promotion and health provision.
- They are able and prepared to recognize stress- and health-related problems in themselves and in their colleagues, and seek or offer support as appropriate.
- They appreciate their role in promoting respect for human rights and incorporate this into their professional practice.

6. Our graduates are able to communicate and collaborate effectively.

- They possess good written and verbal communication skills.
- They are able to establish professional and caring relationships with patients, patients' families and the communities in which they practice.
- They are able to communicate health-related information effectively to their patients, colleagues and to decision-makers within society.

Approved by the MBChB Programme Committee August 2004

GRADUATE PROFILE FOR THE NEW MBChB CURRICULUM SUBMITTED FOR SENATE APPROVAL IN 2001

To produce a basic undifferentiated doctor with the requisite attitudes, knowledge and skills to enter the pre-registration period with confidence, and equipped for life-long learning.

The Context

The Faculty of Health Sciences will continue to strive to be an outstanding Faculty within the University of Cape Town. It will offer educational programmes to a diverse and talented student-body, equipping students with the attitudes and professional values, knowledge and skills required for life-long learning and competent clinical practice. The educational principles laid out in the University's Academic Planning Framework (APF), against which our programmes have been measured, will be integrated into the educational process.

The change of name from Faculty of Medicine to Faculty of Health Sciences indicates a substantial shift in the Faculty's understanding of its role in the training of health professionals. The emphasis on health rather than disease requires a comprehensive educational approach. This approach would have to create a balance between preventive, promotive, curative, protective and rehabilitative health care in order to meet the health needs of the country.

This comprehensive approach is encapsulated in the principles of Primary Health Care (PHC). The PHC philosophy incorporates:

1. Integration of basic sciences with clinical practice and population health.
2. A team approach to health care involving the various health disciplines.
3. Interfaculty and intersectoral collaboration.
4. Application of individual and population perspectives in teaching, research and health care delivery.
5. A comprehensive approach at all levels of health care namely: quaternary, tertiary, secondary and primary.
6. An awareness of complementary and informal health systems in South Africa.

Due regard will be afforded to the cultural, economic, political, social and scientific context within which our graduates will work. The University of Cape Town and the Faculty of Health Sciences have clearly defined their role in participating in the reconstruction of the country. There is a stated commitment to contribute to redressing past imbalances of race, gender and class and to developing a culture of human rights.

Profile of the UCT MBChB Graduate

(adapted from the Global Minimum Educational Requirements of the International Institute of Medical Education)
Submitted to SAQA 2006

GMER – based 7 Competency Domains

1. Professional values, attitudes, behaviour and ethics

1.1 Recognition of moral and ethical principles and legal responsibilities in medicine

1.2 Professional values such as excellence, altruism, responsibility, compassion, empathy, accountability, honesty and integrity, and a commitment to scientific methods

1.3 Commitment to constructive relationship between the health care professional, the patient and the family with respect for patient's welfare, cultural diversity, beliefs and autonomy;

1.4 An ability to apply the principles of moral reasoning and decision-making to conflicts within and between ethical, legal and professional issues including those raised by economic constraints, commercialization of health care, and scientific advances

1.5 Self-regulation and a recognition of the need for lifelong learning with an awareness of personal limitations including limitations of one's medical knowledge;

1.6 Respect for colleagues and other health care professionals and the ability to foster a positive collaborative relationship with them

1.7 Plagiarism, confidentiality and ownership of intellectual property

1.8 Recognition of ethical and legal issues in medical issues &patient documentation,

1.9 Commitment to effective planning and time management

1.10 Flexibility to adapt to uncertainty and change

2. Scientific foundation of medicine

The graduate must possess the knowledge required for the solid scientific foundation of medicine and be able to apply this knowledge to solve medical problems. The graduate must understand the principles underlying medical decisions and actions, and be able to adapt to change with time and the context of his/her practice. In order to achieve these outcomes, the graduate must demonstrate a knowledge and understanding

2.1 Normal structure and function

2.2 Molecular, cellular, biochemical and physiological mechanisms that maintain the body's homeostasis

2.3 Abnormal structure, function and disease

2.4 Normal and abnormal human behavior

2.5 Important determinants and risk factors of health and illnesses and of interaction between man and his physical and social environment

2.6 The human life cycle and effects of growth, development and aging upon the individual, family and community

2.7 Clinical medicine

2.7.1 The etiology and natural history of acute illnesses and chronic diseases;

2.7.2 Relevant biochemical, pharmacological, surgical, psychological, social and other interventions in acute and chronic illness, in rehabilitation, and end-of-life care.

2.7.3 The principles of drug action and it use, and efficacy of varies therapies;

2.7.4 Epidemiology, health economics and health management;

3. Communication skills

3.1 Communicate effectively with patients and families

3.1.1 Listen attentively to elicit and synthesize relevant information about all problems and understanding of their content

3.2 Willing and able to instruct others

3.3 Interact with other professionals through effective teamwork

3.4 Communicate effectively with colleagues, the community, other sectors

3.5 Demonstrate sensitivity to cultural and personal factors that improve interactions with patients and the community

3.6 Communicate effectively both orally and in writing;

3.7 Synthesize and present information appropriate to the needs of the audience

3.8 Create and maintain good medical records

4. Population and health systems

4.1 Important determinants and risk factors of health and illnesses in rural and urban South Africa.

4.2 Interaction between man and his physical and social environment

4.3 Graduates should understand their role in protecting and promoting the health of a whole population

4.4 They should understand the principles of health systems organization and their economic and legislative foundations.

4.5 They should also have a basic understanding of the efficient and effective management of the health care system.

4.6 Recognise important life-style, genetic, demographic, environmental, social, economic, psychological, and cultural determinants of health and illness

4.7 The ability to use the required public health skills to conduct a community health "diagnosis", develop an appropriate management plan and evaluation thereof, relevant to disease, injury and accident prevention

4.8 Local and global trends in morbidity and mortality, the impact of migration, trade, and environmental factors on health and the role of international health organization

4.9 Understanding of the need for collective and integrated responsibility for promotion of public health

4.10 Understanding of the basics of health systems with particular reference to South Africa

4.10.1 Laws, policies & design

4.10.2 Organization & management

4.10.3 Financing and cost containment

4.10.4 Health care delivery

4.11 A willingness to accept leadership when needed and as appropriate in health issues

4.12 An understanding of the mechanisms that determine equity in access to health care, effectiveness, and quality of care

4.13 Use national, regional and local surveillance data as well as demography and epidemiology in health decisions

5. Clinical skills

5.1 Take an appropriate history including social issues such as occupational health;

5.2 Perform a physical and mental status examination;

5.3 Apply basic diagnostic and technical procedures, to analyze and interpret findings, and to define the nature of a problem;

5.4 Perform appropriate diagnostic and therapeutic strategies with the focus on life-saving procedures and applying principles of best evidence medicine;

5.5 Exercise clinical judgment to establish diagnoses and therapies taking into account physical, psychological, social and cultural factors ;

5.6 Recognize immediate life-threatening conditions;

5.7 Manage common medical emergencies;

5.8 Manage patients in an effective, efficient and ethical manner including monitoring and evaluation of outcomes

5.9 Advise patients regarding health promotion and disease prevention;

5.10 Understand the appropriate utilization of human resources, diagnostic interventions, therapeutic modalities and health care facilities.

6. Management of information

6.1 Search, collect, organize and interpret health and biomedical information from different databases and sources;

6.2 Retrieve patient-specific information from a clinical data system;

6.3 Use information and communication technology to assist in diagnostic, therapeutic and preventive measures, and for surveillance and monitoring health status;

6.4 Understand the application and limitations of information technology;

6.5 Maintain records of his/her practice for analysis and improvement.

7. Critical thinking and research

7.1 Demonstrate a critical approach, constructive skepticism, creativity and a research-oriented attitude in professional activities;

7.2 Understand the power and limitations of scientific thinking based on information obtained from different sources in establishing the causation, treatment and prevention of disease;

7.3 Use personal judgments for analytical and critical problem solving and seek out information

7.4 Identify, formulate and solve patients' problems using scientific thinking based on obtained and correlated information from different sources;

7.5 Understand the roles of complexity, uncertainty and probability in decisions in medical practice;

7.6 Formulate hypotheses, collect and critically evaluate data, for the solution of problems.

Appendix B

Facilitation skills for tutors

As a tutor you can play an important role in developing your students' independent learning skills by devolving to them some of the responsibility for their learning. This is a matter of degree; however, most evidence suggests that better learning outcomes are derived from facilitated learning than from directive teaching.

Becoming a facilitative teacher requires a move away from directive, spoon-feeding approaches, towards facilitative approaches to teaching. But what does it mean to be facilitative? In the diagram below, a continuum of interactions is depicted, arrayed according to the level of intervention they embody

Doing nothing Silence Support Questions to clarify	Supportive
Questions to change Questions to move Suggesting choices Suggesting paths Sharing ideas Suggesting action	Persuasive
Guidance Choosing for the group Directing the group	Directive

Table taken from: Bently, T. (1993) *Facilitation: Providing Opportunities for Learning*. London: McGraw-Hill.)

Sometimes it is necessary to be very directive, even when espousing a facilitative style of teaching. So it is important that you recognise that you must use judgement and discretion when deciding whether to operate from the very facilitative or very directive ends of the continuum.

Notwithstanding, under ideal conditions it is better to facilitate than to direct, since directing takes away from the students both control over and responsibility for their learning.

Facilitation tips

Facilitators are skilled in asking appropriate questions. They do not give the answers and they manage groups so all students have the opportunity to become engaged in the learning activity.

The tutor can encourage group self-management by:

- observing and reporting on group processes and thereby opening them up as topics for group reflection
- encouraging all group members to become engaged in the learning activities
- developing 'self-directed learning' activities
- creating awareness of the group's time and project self-management.

Guidelines for non-directive or facilitative interactions:

- Ask open rather than closed questions.
- Pitch questions at an appropriate level for students' understanding, but vary the level to accommodate different individuals' levels of understanding.
- Rephrase your questions if they seem to be unintelligible or have not generated a response.
- Allow sufficient time to get a response (try counting to 10 or 15 before speaking again) and use eye contact to encourage any student 'thinking about' having a go at responding.
- Use probes to follow-up on students' contributions (e.g. "What do think will happen then?" "Tell me more about the viscosity of the emulsion at that stage.").
- Redirect questions to other students ("Mary has argued that..., what do you think Tim?")

Respond to every contribution appropriately:

- Reward the good (including that within a response that otherwise needs work).
- Correct the bad (avoiding ridicule). Try using these questioning techniques to draw out the problems or strengthen up the argument.
- Allow many students' contributions to contribute to a coherent whole answer to the initially posed problem - draw them out by redirecting questions to other students, rather than answering them yourself.

Handling difficult tutorial situations

There are at lease three things you might consider doing in all your group work to help prevent difficult tutoring situations from arising.

- Communicating minimum standards that must apply
- Developing consensus on standards beyond the minimum
- Building trust, team building

Communicating minimum standards

- Use and refer to University policies and guidelines on standards of staff behaviour and professionalism. If you know your rights and responsibilities it is easier for you to deal with difficult student interactions.
- Expect that your School will support you in enforcing appropriate standards that students can be expected to uphold or conform to. Use School guidelines and communicate School expectations and disciplinary mechanisms to students.
- Provide students with examples of appropriate and inappropriate behaviour, showing how they will be handled. It is also useful to workshop these with students.

Developing consensus

- Use the group's own internal self-regulation abilities. If you can get a group to agree to adopt and accept behavioural guidelines, then you can get that same group to police adherence to those guidelines.
- If there are contentious, flexible or alternative standards that might be adopted, you might use design group exercises to generate a set of standards by consensus.
- Incorporate the ability to police, sanction, and report if necessary, into the administration of the group work.

Developing trust and team building

You might try and program time for various activities that are not related directly to the learning or content but help to develop the relationships between the students.

Games and icebreakers

- Games and icebreakers allow students to get to know each other in contexts and through activities that are purely fun. This reduces the tension some students associate with group work.
- Do the games and icebreakers early in the semester for best effect.
- Focus on getting social cooperative interactions that are not related to the course content

Disclosure

- *Appropriate* levels of disclosure are important for building trust, both among students and between yourself and your students.
- Never try to bluff your students if you do not know the answer to a question; honesty is part of appropriate disclosure and shows respect for your students. Admit that you do not know and undertake to find out.

Tricky tutorial situations

If you are going to experience difficult tutorial interactions, are there ways of identifying them in advance and preparing for them? Yes there are. Here are some examples and some suggestions for dealing with them.

What can you expect 'in the Classroom'?	**What strategies can you use?**

Blocking
 	
• Low frustration tolerance
• Immobilisation/hopelessness
• Freezing up/blocking
• Procrastination
 	
Typical student responses:
" It's beyond me."
" S/He's (prof) speaking a foreign language."
" I'm stuck."
	• Determine what the student does know:
	  ○ Through questions and discussions, show the student that s/he is not an empty vessel but already 'partially filled'.
	  ○ Start by using simple units, then build to more complex ones.
	  ○ Offer continual positive reinforcement of successfully completed steps.
	• Use a variety of approaches (examples, diagrams, analogies, computer software).

Confusion (blocking variation)
 	
• Disorientation
• Helpless feeling about the class
 	
Typical student responses:
" I just don't know what to do."
" I don't know what the professor wants."
" I studied for three hours and got a C!"
" I'm not sure where we're going."
	• Above approaches may work.
	• Structure and order the tutoring sessions:
	  ○ Provide beginning, middle and end.
	  ○ Offer study tips for notating, listening, time management, brainstorming paper ideas.
	  ○ Suggest regular lecture/class attendance.
	  ○ Try to give tutee an overview.

Miracle seeking • Global interest concern but little specificity • Enthusiasm regarding being with tutor but fairly passive in actual tutoring process • High (often inappropriate) level of expectation • Evasion or inability to stay 'on task' Typical student responses: *" Will you do this for me?"* *" How do you remember all these terms?"*	• Downplay your role (e.g. "I've had more practice or more courses, that's all"). • Focus repeatedly on the task at hand. • Involve student continually with questions, problems, models. • Stress active participation in the learning process (e.g. have student engage the text: star major concepts, 'highlight' only key terms, write marginal notes, question claims).
Over enthusiasm (miracle-seeking variation) • High expectations of demands on self: talks about limited time, long-range goals instead of immediate tasks • Global interest/enthusiasm often found in older students Typical student responses: *" Look, I'm thirty years old: I don't have the free time these college kids have."*	• Explain counter-productivity of overeagerness. • Be empathic but assure student s/he has time. • Suggest ways s/he can carve out this time with time-management tips (e.g. commuters, or mothers, may tape key-terms, review notes etc to play back in car or between classes at lunch). • Utilise strategies under miracle seeking.
Resisting • Expresses sullenness/hostility/ passivity/boredom • Disinterested in class/work/tutor or defensive posture towards class/work/ tutor/lecturer • Easily triggered anger Typical student responses: *" I don't see why I have to do this over."* *" S/he doesn't go over this stuff but expects us to know it."* *" I won't use this course in life." (on the job, in my major)*	• Allow students five minutes to ventilate frustration. • Spend time building a relationship. • Be pragmatic, yet understanding: "I know these requirements are difficult, but they're required so let's make the best of it." • Establish your credibility/indicate past successes in similar situations (as opposed to 'downplaying role' under miracle seeking). • If the question arises, assure student his/her complaints about a class are confidential. • Avoid fuelling his/her anger, etc (eg. "Prof Blank doesn't give criteria for his grading system; that's really unfair.").

Passivity (often a variant of resisting)
 	
• Non-involvement/inattention/low self-esteem
• Boredom
• Little discussion initiated/few questions
• Intimidated or overwhelmed
 	
Typical student responses:
" My prof said I HAVE to come here."
" History's (or any other discipline) boring."
*" Who cares about stats (or any other course) anyway?"**
	• Empathise with tutee ("You're not crazy about asking questions in class, are you?" or "You really don't want to be here, do you?")
	• Attempt to establish rapport and energise student by connecting the subjects to his/her interests.
	• Show relevancy of subjects to life, other disciplines
	• Use as many mobilising techniques as you can:
	  ○ open-ended questions
	  ○ real or current problems
	  ○ mini-tasks to be completed by the next session (homework).
	• Reinforce all completed activities and successes.

Fragmentation (another variant of resisting) • Inability to concentrate or adhere to task, easily distracted • Overwhelmed by academic/athletic/social demands • Uncertain about having college-level skills, declaring a major, etc Typical student responses: *" My high school did not prepare me for this."* *" I've been away from school for so long."* *" I'm lost in Dr Blank's class."*	• Provide lecture/class calendar and other time-management tips. • Suggest structure in his/her schedule such as making appointments to get to the library. • Give subject-specific study tips on note-taking, listening, reading text, professor expectations, etc. • Give and review with them any appropriate study tips. • Advise regular lecture/class attendance (where they are having trouble). • Notify of current workshops, such as time, stress management. • Make necessary referrals (e.g. Career Counselling Centre, etc)

(Adapted/expanded by Joan L. West (1990) from *Difficult Tutoring Situations* by UCL's Tutor Coordinator Mike Rose (1976))

Small group teaching principles and methods

Smaller classes provide circumstances for the development of students, *educationally, socially and personally:*

Personal

- Building confidence (e.g. in giving seminars, working in pairs/trios/project groups, developing the ability to discuss and argue, to present and justify an opinion etc)
- Make studying at university more enjoyable (for some - introverts may never prefer smaller classes)
- Make studying at university more rewarding (by developing friendships, belonging to social networks, studying with others rather than alone, improving the quality of learning, increasing the scope of learning from high content to higher order reasoning and thinking skills, etc)

Social

- Making friends
- Finding allies
- Networking

Educational

- Problem solving skills
- Reasoning skills
- Development of relevant or appropriate attitudes (e.g. professionalism)
- Speaking skills
- Listening skills
- Leadership
- Cooperation

According to Newble and Cannon (1995) there are three elements necessary for successful small group teaching:

1. Active participation by all the students (requires keeping numbers as low as 5-8, but you can break up groups of 20-30 into smaller groups). Getting everyone involved in a way that is productive and inclusive is one of the major skill areas for you to develop as a small class teacher. You will find a lot of information about this skill area dealing mainly with the issue of students' personal comfort zones (use of icebreakers and games, getting to know names, making the context non-threatening so students feel comfortable venturing their suggestions and ideas).
2. Face-to-face contact to capture para-linguistic communication (gesture, facial expressions etc). This is of course the area that is being practically tested and challenged by the adoption of flexible delivery methods (e.g. the use of computer mediated communication technologies such as email to mediate discussion groups asynchronously).
3. Purposeful activity. Each session should have a purpose and develop in an orderly way. This is another major skill area for you, requiring you to plan tasks that are going to bring about the learning you want students to achieve. Remember all the while that there are many skills students may be learning (such as the social and personal skills) while they are working through tasks that seem on the face of it to be concerned with content. Staying mindful of what your students can and are learning because they are doing small class activities is very important because it allows you to self-consciously build into your planning both the specialist disciplinary content and the small group skills you want them to learn.

Reference

Newble D. and Cannon R. (1995) *A Handbook for Teachers in Universities and Colleges: A Guide to Improving Teaching Methods* (3rd ed.) London: Kogan Page.

http://www.tedi.uq.edu.au/teaching/tutor/resources.html

Good Thinking vs. Poor Thinking

ASPECT:	THE GOOD THINKER:	THE POOR THINKER:
General Traits	• Welcomes problematic situations and is tolerant of ambiguity. • Is sufficiently self-critical; looks for alternative possibilities and goals; seeks evidence on both sides. • Is reflective and deliberate; searches extensively when appropriate • Believes in the value of rationality and that thinking can be effective.	• Searches for certainty and is intolerant of ambiguity. • Is not self-critical and is satisfied with first attempts. • Is impulsive, gives up prematurely, and is overconfident of the correctness of initial ideas. • Overvalues intuition, denigrates rationality, believes that thinking wont help.
Goals	• Is deliberative in discovering goals. • Revises goals when necessary.	• Is impulsive in discovering goals. • Does not revise goals.
Possibilities	• Is open to multiple possibilities and considers alternatives. • Is deliberate in analyzing possibilities.	• Prefers to deal with limited possibilities; does not seek alternatives to an initial possibility. • Is impulsive in choosing possibilities.
Evidence	• Uses evidence that that challenges favoured possibilities. • Consciously searches for evidence against possibilities that are initially strong, or in favour of those that are weak.	• Ignores evidence that challenges favoured possibilities. • Consciously searches only for evidence that favours strong possibilities.

Allan A. Glatthorn and Jonathan Baron

WORKING DEFINITION: *Critical thinking* is reasonable, reflective thinking that is focused on deciding what to believe or do.

Critical thinking so defined involves both dispositions and abilities:

A. Dispositions
1. Seek a clear statement of the thesis or question
2. Seeks reasons
3. Try to be well informed
4. Use credible sources and mention them
5. Tale into account the total situation
6. Try to remain relevant to the main point
7. Keep in mind the original or basic concern
8. Look for alternatives
9. Be open-minded
    a. Consider seriously other points of view than one's own ("dialogue thinking"
    b. Reason from premises with which one disagrees – without letting the disagreement interfere with one's own reasoning ("suppositional thinking")
    c. Withhold judgement when the evidence and reasons are insufficient
10. Take a position (and change a position) when the evidence and reasons are sufficient to do so
11. Seek as much precision as the parts subject permits
12. Deal in an orderly manner with the parts of a complex whole
13. Be sensitive to the feelings, levels of knowledge and degree of sophistication of others.

Robert H. Ennis

from Developing Minds: A Resource Book for Teaching Thinking

Appendix C

SUMMARISED VERSION of the STEPS IN THE (SPBL) PROCESS

1. Clarify (5 -10 minutes):
Make sure that everyone understands the meaning of words, terms and phrases. This should be brief.

2. Identify Key Issues (10 -15 minutes):
Decide on and record the key issues arising from the specific case. Motivate why something should be regarded as key if there is no initial agreement.

3. Record Prior Learning; Interrogate and Analyse:
Put forward/table ideas, views, concepts acquired previously that you consider relevant to the key issues and concepts identified for this case. Examine and probe what has been put forward.

4. Describe connections and Prioritise (+/- 10 minutes):
Look for and describe connections between the different points. Suggest and explore explanations. Groups should consider possible causative, associative and hierarchical connections.
Prioritise: decide what is most important to pursue, focusing on limitations that you have identified in your knowledge.

5. Identify gaps and formulate learning objectives
List the limitations in your knowledge that you have identified during the previous step. Identify any additional limitations from your discussions. Formulate tasks that you must perform to deal with each limitation. These are Learning Objectives (LOs). Check that the LOs relate to the case.

6. Evaluate
Group interaction; part played by participants; what promoted and what hindered learning.

STEPS 1- 6 MAKE UP PBL SESSION 1

7. Go and Learn
Gather information and ideas from reliable sources to deal with the limitations. Use the full range of available resources. Organise responses to each LO, making summarised notes.

8. Report-back (SPBL Session 2 or 2a and 2b)
Present what you have learnt. Identify your sources, explaining what you know and how it clarifies and/or corrects and/or builds on what you knew before. This should be new knowledge not a repetition of the prior learning elaborated in session 1. Thoroughly probe reports and examine differences, justifying conclusions. Apply the results of your study and discussion to the case.

For each LO:
Evaluate the accuracy and relevance of new (and prior) knowledge. Identify further limitations in knowledge related to the case and emerging from the new knowledge. Refine LOs. This can mean revising original LOs and/or formulating new LOs.

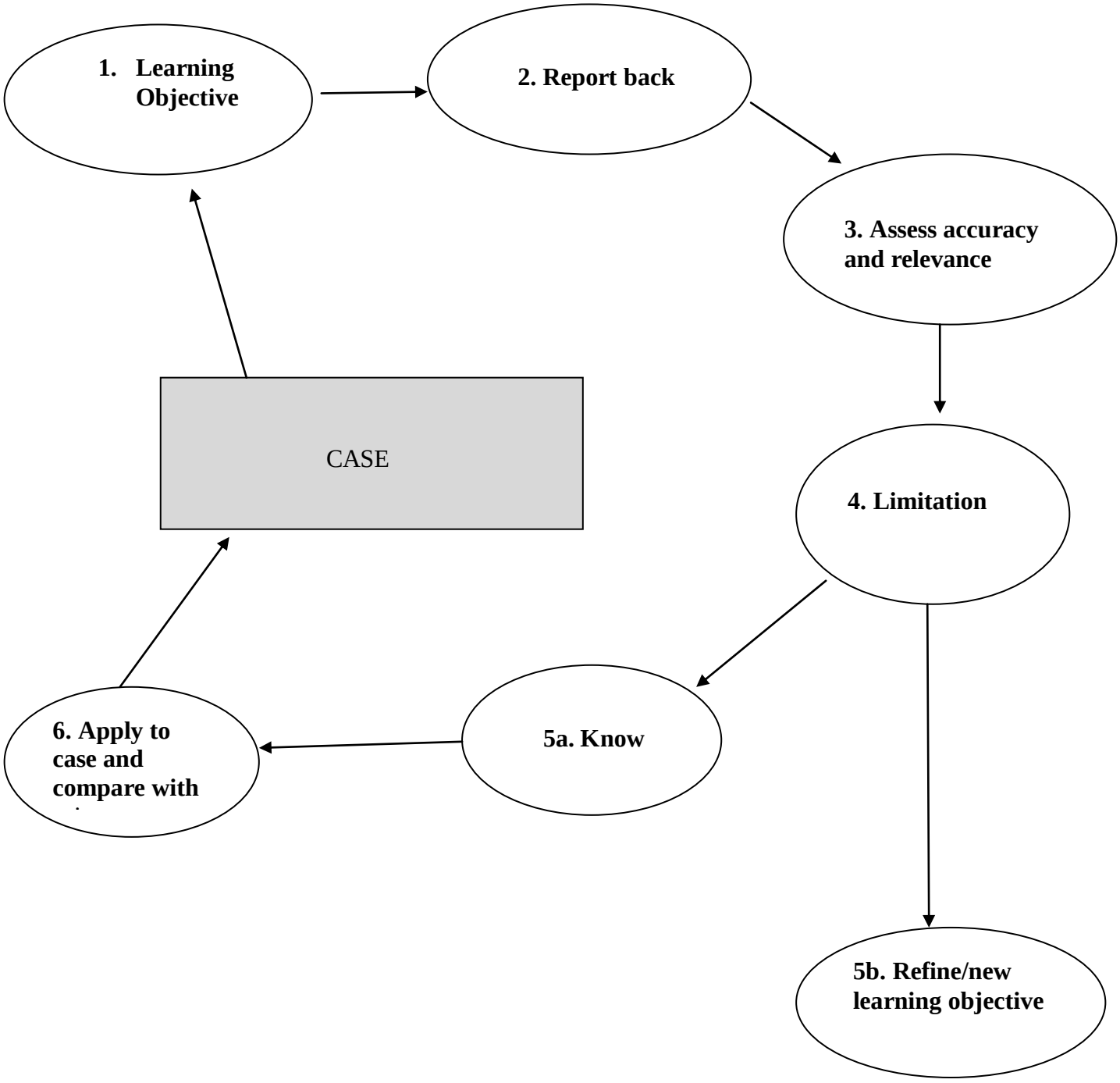
Report-back and evaluate (SPBL SESSION 3)

Same process as SPBL session 2.

Evaluate Group interaction; part played by participants; what promoted and what hindered learning.

Appendix D

Diagram illustrating a discussion/report back on a Learning Objective (PBL sessions 2 & 3)



Appendix E

ROLE OF SCRIBE

- Listen to group discussion
- Record group discussion through summarizing and organizing information discussed
- Check accuracy with group

ROLE OF CHAIRPERSON

- Take group through PBL session
- Ensure steps/process is followed
- Manage discussion
- Ensure everyone has an equal opportunity to speak
- Encourage all group members to participate
- checks scribe's recorded summaries with the group
- keeps time

ROLE OF EACH GROUP MEMBER

- Take responsibility for observing and promoting ground rules
- Listen, ask, challenge, question and share opinions and information
- Assist and support participation and learning amongst other group members
- Chair or scribe in some sessions
- Assist and support chair and scribe in other sessions
- Raise appropriate points in evaluation

ROLE OF FACILITATOR

- Monitor observance of ground rules
- Monitor PBL process
- Guide process where necessary
- Intervene where necessary to ensure that ground rules and SPBL steps (learning process) are being followed
- Monitor role being played by chair and scribe
- Assist and support chair and scribe to play their roles
- Monitor group interaction and participation by members
- Assist and support group members to play their roles.
- Raise appropriate points in evaluation

Appendix F

GLOSSARY OF SOME ACTION WORDS

DEFINE – give the precise meaning in a concise manner

LIST – means to **name**

DESCRIBE (BHS) – create a picture to give someone who doesn't know what it is. An Idea/concept or thing: what it does, it's structure (what it made up of) and function (the role it plays)

IDENTIFY – **select from** a given body of information

OUTLINE – this is not a list, but is a **short summary** of what you have identified

EXPLAIN – **give reasons** for the factors selected/your view
WHY (something happens *because*……)
HOW (something happens in the following way…….)

DISCUSS – briefly state the factors/ your view and explain/give reasons for the factors you have selected or the view you have adopted

ANALYSE – establish and describe the way in which **different parts** of a **whole** are **connected**, and the way in which the whole is connected to factors around it

COMPARISON AND CONTRAST - (Comparison) Identify or establish the similarities and differences and (Contrast) analyse the differences

EVALUATE – make an **informed judgement** about the **value** of the material for a **given purpose (effectiveness)**

The use of action words in assisting students in formulation learning objectives.

Action words

- cannot be used in isolation
- they are part of a statement of learning need, formulated as an objective. Equal attention needs to be given to the action words as well as the whole statement: see criteria below.

Criteria for Formulating Learning Objectives (LOS)

4 criteria for evaluating good or poor quality LOS:

Appropriate Action Word	indicates depth/detail
Keyword	highlights the content of a certain topic
Concise	includes an aspect of the certain topic that should be studied" (should not be vague or global))
Unambiguous	described in a way that it is clear to all students in the group and they interpret the learning issue in the same way.

Examples:

1) **High on all characteristics**

'Describe how the **cellular immune response** works against **viruses and bacteria**.'

'Describe how' (**depth/detail** as well as an **unambiguous task)** indicates the need to address **the functioning** of the cellular immune response **(keyword)** specifically in relation to working against viruses and bacteria **(concise).**

2) **High on keyword only**

'Search for something about the **herpes virus**, symptoms etc.'

'Search for something about the **herpes virus,** symptoms etc.' (Keyword is clear, but it is inconcise and the task is ambiguous – once you have searched, what do you do)?

'Search for something (ambiguous task) about the **herpes virus**
(keyword clear), symptoms etc (not concise).'

(Keyword is clear, but it is not concise and the task is ambiguous –Search, but what then? What is something? 'Symptoms etc.' is very unclear.)

3) **Concise, but moderate on keyword and ambiguous and no indication of depth/detail (action word)**

‘What is the cellular immune response?’

[See Marianne M. van den Hurk et al (2001) Quality of student generated learning issues in a problem-based curriculum. *Medical Teacher*, Vol. 23, No.6, 2001 – modified by EDU]

Melanie Alperstein, Nadia Hartman
EDU. August 2005

Appendix G

FACILITATOR CHECKLIST AND PROBES:

The checklist is an aide for you, as a facilitator, to monitor the PBL process.
The probes are to assist you, as the facilitator, to help students process information beyond a superficial level. The probes are general questions that should assist students to interact effectively and critically with the materials they are dealing with. We have put particular probes under the different steps in the PBL process, but some may be useful in more than one of the steps.

(Probes are boxed in italics)

1. CLARIFY

- Does the group drift into discussion instead of simply defining?
- Are there times when it becomes obvious, later in the process, that some students have carried uncertainty about particular terms and words?

Probes:
To ensure clarity, when appropriate, you could ask: *" can anyone rephrase that; explain it in a different way; what do you mean by……? can you give examples?"*

2. IDENTIFY KEY ISSUES

- Are these being linked explicitly to the case, or are students guessing?
- Are these being linked to the case or are students using other cues?
- Are students explaining why and how they come to identify them as key issues?

Probes:

"Where does that key issue come from? How does it link to the case?' (if not evidently linked to the case)"

"Are you sure you have picked up everything?"

Sometimes there are learning objectives that are on the same issue as a previous case. Students often dismiss the issue because 'they have done it before' a probe could be: - *"if you look at the case, are you sure it is the same, could it be different and building on your prior knowledge?"*

3. RECORD PRIOR LEARNING

- Are students actually deploying prior learning?
- Are all students participating?
- Are students silencing themselves when they are uncertain instead of making tentative suggestions?
- Are they dealing with each and all key issues identified?

Probes:
"Tell us what you know." Who knows anything about ….." "can you tell us more?'

" What does anyone else think; does anyone have anything to add? Tell us more; give some examples."

" If you look at the case again, have you covered all key issues?"

4. INTERROGATE AND ANALYZE

- Are students using the ideas and information identified in steps 2 and 3?
- Are they questioning and probing suggestions from themselves and each other?

- Are they assessing the status of possible information?
- Are they making disagreements explicit?
- Are they exploring and pursuing disagreements?
- Are they dealing with each and all key issues identified?

Probes:
"Do you have any suggestions, thoughts or assumptions, hypotheses?"

"Why would that be so? How can that be? Are you sure – can you give an example?"

" Do you have evidence to support it: Is this consistent with what you have heard, experienced, read?"

"Where did you get that from/how do you know that?"

"Do you all agree; does anyone have a different viewpoint?"

5. FORMULATE LEARNING OBJECTIVES

- Are the limitations being drawn out of the preceding steps?
- Are they being linked to the case?
- Are they being prioritised?
- Are reasons being given, discussed and agreed for the prioritisation?
- Are they covering the full range of key issues identified?
- Are they identifying limitations or just turning key issues into questions
- Are they identifying limitations or just guessing LO's? Are LO's popping up from nowhere?
- Are they identifying limitations or trying to second guess the design teams
- Are they identifying the depth to which they choose to go?

Probes:
" It seems you need to know more about this/ check the accuracy of this – should this be flagged as a limitation?"

"What is the connection between the issues being discussed and the case?"

"Why are you using that action word? What do you want to know about this?'

6. EVALUATE

- Are students identifying and discussing specific problems?
- Are students giving feedback regarding the role of the chair, scribe and facilitator?

7. GO AND LEARN

8. REPORT-BACK

- Are students bringing new knowledge (or repeating what they said in steps 3 and 4)?
- Have they prepared that knowledge to fill identified limitations, or are they simply repeating what they heard in lectures and read?
- Are they challenging each other to determine the status of that knowledge?
- Are they giving sources?
- Are they identifying and dealing with disagreements?
- Are they assessing their prior learning in light of the new knowledge?
- Are they all dealing systematically with all LO's?
- Are they relating their new knowledge back to the case?
- Are they refining and adding to LO's (clarifying limitations, identifying new limitations)?

Probes:
"How does this link to what was discussed in PBL 1, does it support, build on, or correct what was discussed in PBL1?"

"How does that information (mentioned from lecture, pratical, reading etc.)? apply to the case?'

"How does that connect or compare with what you said, thought in the first session?"

At any stage, if students are going astray, in circles, appear confused - refocus them.

Probes: - ***"Can someone summarise the discussion up to this point? " "How is this related to ….?"***

If they are plain tired and have lost concentration ***– stretch, energise, take a short break.***

OVERALL

- Are you interfering if students skip steps and tasks?
- Are you interfering if the chair is not chairing?
- Are you interfering if the scribe is not scribing?
- Are you interfering if the group members are not playing their role?
- Are you interfering if some areas and issues identified through the process are being ignored?
- Are you interfering if groups' members are not dealing with any and all of the problems identified above?
- Are you avoiding interference because you are "not allowed to teach"? Do you avoid interfering in the process when you should because "I'm not allowed to teach"?
- Are you teaching?
- Are you favouring the process around issues and areas of your subject expertise?
- Are you promoting evaluation about group dynamics **and** reflection on the learning process?
- Are you allowing practices and routines that deviate from the process?
- Are you bringing problems and issues to facilitator meetings?
- Are you attending the whole of each facilitator meeting?
- Are you attending the whole of each PBL session?
- Are you listening through the whole of each PBL session?
- Are you monitoring the process and raising appropriate points in evaluation?
- Do you think your students are clever if they "get the Faculty Learning Objectives?
- Do they?
- Do you think that they can start skipping steps (accelerated PBL) after they have some experience
- Do they?
- Do you think the LO's can be left imprecise because they will get the LO's (Faculty semester 1, collated semesters thereafter) anyway?
- Do they?
- Do your students think it's a good idea to divide up the LO's so that they don't all have to cover each of them?
- Do you?

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EDU - 2003

Appendix H

Categories of Questions to Facilitate Thinking and Reasoning in SPBL Sessions

1. Definition*: accuracy and precision*

What is meant by ….? Does everybody agree that all the elements or components of ?'s definition are relevant to ….? Does anyone think there are additional elements or components needed to complete the definition? Does anyone have an alternative or different definition?

2. Connections or Relationships between ideas*:*

2.1 Generic:

- ***Hypothesis generation and the notion of reasonable speculation CAUSATION: sufficient and necessary conditions for causation in contrast to ASSOCATION; Chance/probability***

e.g. How does intravenous drug use affect the immune system? in contrast to Are you implying/hypothesising that intravenous drug use affects the immune system? (introduces the notion of hypothesis to make the student aware of the kind of thinking act in which they are engaged) If the student answers yes, then how does intravenous drug use affect the immune system?

Are there conditions under which X may not lead to that effect? Are their conditions under which intravenous drug use may not have?…effect on the immune system?

- ***Duration or sense of time***

At what stage/time did … happen? (bacteria enter the blood stream)? Would it have a made a difference if it occurred or was noted at an earlier or later stage/time? Is … an immediate or delayed responses? How long would it take for symptoms to manifest normally?

- ***Spatial, particularly 3-Dimensional***

- ***Hierarchical relations: superordinate from subordinate; main ideas from supporting detail or examples***

Which of the factors are the most significant? A follow-up question could be: If …. are the main factors, what are the contributing factors?

- ***The relationship between structure and function, that includes enabling students to move from the macro to the micro***

Micro-macro: socio-economic:
If you consider the socio-economic conditions of patient x, what are the implications for
a) him/her being able to manage his/her condition?
b) or for the management you suggest?

- ***Transfer: To promote transfer within and between contexts:***
    - ***Example: Hypothesise the abnormal from the normal***
    - ***Case to case:***
        - Is there a case that you have done before to which these principles might be relevant?
    - ***Case to the system (recognize principles and relationships across boundaries)***
    - ***System to system (recognize principles and relationships across boundaries):***
        - Would this have any effect on any other system, and how?
    - ***Other?***
- ***Application: To apply theory to practice***

How would you distinguish whether this patient's obesity is endocrinal (genetic) or life-style-related?
A follow-up question could be: What are the sources/evidence for your choice of theory/explanation?

- ***Other?***

2.2 Specific to Medical Science

- ***The relationship between signs and symptoms on the one hand and pathogenesis and pathological changes on the other***
- ***Other?***

3. Critical Disposition

- ***Reliability of sources***

How reliable is … information or report? Does the rest of the group think the evidence for this information or report is credible – what sources were consulted? Are the references used in the source wide-ranging or self-referential?

Is … the best source/author on this issue?

- ***Validity in argument(s)***

If … and … does it follow that … will be the case? Does the group agree with ?'s conclusion?/Does the group agree that ?'s conclusion follows logically from …?

- ***Evidence-base of arguments/responses***

What are your grounds for assuming that …..? What is the evidence for …. (grounds student provides)? Is that an assumption or do you have evidence?

- ***Ability to engage the validity of multiple conclusions***

Is it possible that … and … may also follow from …?

- ***Other?***

Appendix I – Core Readings on PBL

1. Wood, D. F., (2003) ABC of learning and teaching in medicine: Problem based learning, *British Medical Journal*, 326, pp. 328-330

2. Davis, M. H., Harden, R. M. (1999) AMEE Medical Education Guide No. 15: Problem-based learning: a practical guide, *Medical Teacher*, 21 (2), pp. 130-140

3. Azer, S.A., (2005) Challenges facing PBL tutors: 12 tips for successful group facilitation, Medical Teacher, Vol.27, No. 8, pp.676-681