

# PBL settings in initial SLT education: recent developments, findings relative to 3 student cohorts

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## Context of introduction:

**International evaluation by Professors B. Dodd and X. Seron in 2002:**

- PBL proposal, hybrid form (Whitworth, Franklin & Dodd, 2004)
- Ref. to positive findings on widely-used PBL in medical education & other clinical settings (cf. meta-analysis Albanese et al., 1993)

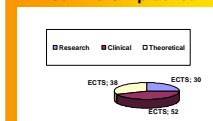
**Implementation Bologna Accords: Masters programme, as of 2006 (conformity with CPLoL Malmö resolution 2005)**

- Tutor training, discussion groups/role play
- Annual intake 20+ (= 2 groups of 10-12 students)
- Recommendation that we introduce PBL tutorials:
  - Implement '7-Jump' sequence
  - Use « real » clinical vignettes (video excerpts + selected data on clinical background/assessment)
  - Recruit tutors amongst experienced clinicians

## Masters course : General structure

B.Sc. in Psychology (180 ECTS)			M.Sc. in Speech Therapy (120 ECTS)	
B1 Course work in psychology	B2 Course work in psychology	B3 Course work in psychology	M1 Lectures 2 Block courses	M2 2 clinical placements 40h/10 weeks 2 block courses Clinical tutors sessions
Linguistic Sciences Educational Sciences - pre-required courses -			Psycholinguist - pre-required courses -	Research colloquium - research project -

## Clinical content, including PBL seminars + practicum



### What is Problem-based learning?

- Constructivist learning theories
- Contextualised learning
- Tapping into:
  - \* Life experience and common sense
  - \* Prior academic knowledge
  - \* Issues students share

(Schmidt & al. 2000)

### What makes a PBL tutorial different from a Group Meeting?

Following regarded as **key activities** in the PBL process

(Haik & Maguire, 2000):

- Defining and analyzing
- Brainstorming and formulating hypotheses
- Testing hypotheses
- Identifying learning issues
- Sharing knowledge



### PBL's specificities in SLT

#### Strong link between theory and clinical/professional practice through :

Object of study : populations and disorders (developmental and acquired impairments, « transversal » topics)  
Approach to learning : not exhaustive, collaborative, adaptive; favouring future interdisciplinary communication and ways of appraising efficacy of treatment

#### Goals : transferring capacities from PBLs to clinical practice

- Core competencies focused on in PBL to enable autonomous clinical reasoning :
  - \* Analysing the problem
  - \* Hypothesizing
  - \* Searching for appropriate resources
  - \* Proposing therapy measures and their assessment

Tutoring is a good way to support students' learning process in the PBL model; tutors are experienced clinicians in SLT

### 3 distinct roles – students acquire practical experience of each role during PBL tutorials



'7-Step Jump' (Norman & Schmidt, 1993)



# PBL tutorials

### Concept Mapping: a promising tool for effective conceptual reasoning?

Background & rationale: attested as effective aid to conceptual learning (N. Sparrow, 2008)  
- Studies on PBL in Medical Education (Albanese et al., 1993)  
- Recent data on efficiency in group contexts, incl. SLT



### E-learning platform used to:

- Communicate and exchange documents and practicalities with students
- Enable students to communicate amongst themselves

### Getting started... working on group dynamics: an on-going process

Recently introduced initial training module:  
- 2 sessions to practise concept map (on shared-personal experiences and goals)  
- Evaluation of group's dynamics and own participation, by session  
- Individual self-rating questionnaires on group and own functioning

## Methodology & Results

**A) Standard step-wise PBL sessions** include synthesis-feedback directly after tutorial. Given time constraints, this requirement was adapted to a questionnaire format, submitted several times during semester to student group.

Questionnaire probes:

- Starter problem-situation (choice, relevance, format of the clinical vignette) and link to students' prior knowledge
- Development of the tutorial (adherence to steps, identification of themes for self-directed research) and group functioning (satisfaction with roles, attitude of tutor etc.)
- Ressources, references and « traces », i.e. methods used to chart information (notes, schemata, e-learning etc.)
- Relations with prior clinical practice (practicum experience and projections into future practice)
- Plenty of free space left for comments and suggestions

Following data analysis, written feedback provided to students and tutor of each PBL thematic module. Questions and answers conveyed to students (either orally or in written form), to enable progressive adjustment throughout semester/year.

Goals: tap into students' representations of PBL given unusual nature of this learning format in their curriculum (judgement on relevance of PBL experience in SLT education)

### A) Data analysis of questionnaires

2 years + of tutorial experience  
Questionnaires: 5 submitted in 06-07 (received N=14, 11, 8, 11, 5 /24 students), 3 in 07-08 (7, 10, 8 s/ 21 students), 2x (N=19/23 (winter semester) then N=10/23 students (spring semester, not incl. in analysis) in 08-09.  
Average rate/percentage of responses per seminar (N=20 students) = 47%  
Scale: max. 5 points : 1 = very good, 5 = very poor  
\*less representative, a number of atypical circumstantial factors

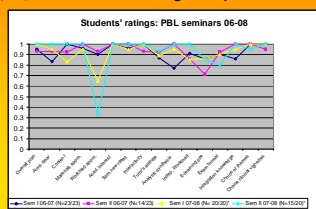
Mean points	2006-2007	2007-2008	2008-2009*
Synthesis vignette	1.68	1.73	1.79
Development and synthesis of tutorial	2.22	2.44	2.02
Clinical synthesis	1.39	1.92	1.37

Quasi-unanimity of students regard PBL format as beneficial to their education

Resources: students comment difficulty accessing resources in general, particularly in 2006-2007 - due to variety of factors, (e.g. library access).

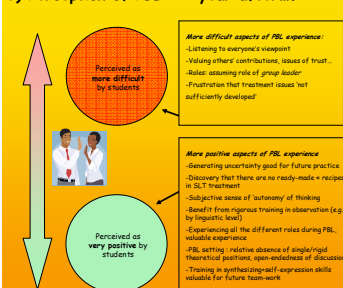
**B) Beyond this, in our University, provision of systematic anonymous course evaluation by Rectorate (ADEVEN) - students fill out end-of-semester 'satisfaction questionnaires' for all courses**

### B) Questionnaires: during PBL year



### C) Hindsight on PBL experience by students in final clinical placement (M2) : group interview

#### C) Perception of PBL - 1 year after...



## Qualitative analysis & Discussion

### For questionnaires (A)

• Generally satisfactory, on following aspects:

- 1) Regarding clinical vignette  
Students greatly appreciate fact that departure point is a 'real or close to reality' situation, arising from tutors' own clinical practice. Note great variation in support data, preference for data close to clinical reality (e.g. video)
- 2) Teaching format  
Group generally adapts well to PBL functioning ('7-step jump'); at onset, learning period; gradually more at ease, with practice. Tutor's role important in supporting student interventions (not all trained in PBL).

Regarding group participation and dynamics, positive appreciation but more 'nuance', inherent to the process; dealing with different student personalities has immediate and substantial influence on group dynamics

- Recurrent difficulties/problems (time-consuming, excessive work load etc.)

NB. New in 2009: questions formulated by group for session 2; leads to better time-keeping

### Discussion

- Work-load remains substantial, self-directed learning one of PBL's principal goals
- Difficulty on part of students to accept non-exhaustivity and absence of ready-made solutions of. post-qualification interviews → better understood; reality of clinical practice
- Links with clinical reality in terms of content (vignettes) and inter- and intra-professional collaboration: sharing these points with tutors in context of regular planning and discussion meetings

### Future directions:

Study to be pursued in form of interviews with newly qualified SLT's

- First 4 years - focus on:
  - **Content elaboration:** analysis of clinical data: observation and understanding of clinical data (prototypical vignettes, video observation/analysis)
  - **Group functioning:** Interpersonal skill training (group dynamics and functioning of roles, awareness, ability to regulate own tutorial functioning (Cohen-Schotanus & al., 2008))
- In future:
  - Introduction of *tools* (e.g. C-Maps) to enhance hypothesis-driven, consensual reasoning during brainstorming in tutorials
  - Qualitative study of *cognitive processes* at work during the tutorials (Haik & al., 2009); analysis of interactional sequences as theories are evaluated, modified, accepted or rejected during group
  - Tap into clinical needs of newly-qualified SLT's (post-PBL group interviews...), relevant to settings where supervision of freshly qualified SLT's patchy

+ Looking for less costly PBL methods! (Cohen-Schotanus & al., 2008)