

#### Problem-based Learning

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#### The problem as point of departure

- 'The problem' points at something not understood on the basis of something understood.
- 'The problem' is always owned by somebody PBL requires it to be owned by the learner.
- 'The problem' thus denotes a specific relation between the learner and certain reality aspects (the problem field) that the learner sees as problematic – *in an academically or educationally interesting way*.
- Helping the learner to extract 'the problem' from the problem field is one key competence for the PBL supervisor; cf. 'point of departure'





In PBL learning cannot get started before/unless learners have identified the problem that shall serve as motor for their learning efforts





#### Projects organized in groups

• 'Projects' mean 'student-initiated and student-designed, empirically based investigation activities aimed at solving the problem'.



## The project is supported by courses

... but the project is what counts as most important (cf. 'supported by')

 High quality PBL presupposes a proper quantitative balance between, and temporal sequencing of, project activities and course activities







- The triangle simply states that, on the one hand, the problematic aspects of 'the problem' may be derived mainly from
- ✓ 'theory', i.e. existing textbook knowledge;
- ✓ 'person', i.e. learner;
- 'situational context', including human role-bearers involved in that context ...
- Yet, at the same time PBL requires that more than one of those three problem platforms are involved



#### Problems may be derived from theory

- A PBL problem can have a theoretical angle based on students' reading and course participation
- Problems are dogmatically required to be 'authentic' meaning that they must be understood, by the learner, as also having relevance "outside of Academia", i.e. for situational contexts (small-scale, large-scale), or for the learners themselves (e.g. "How can I/we make personal sense of theory A or concept B?")
- As mentioned earlier, the quantitative balance between, and temporal sequencing of project activities / course activities are of vital importance for the PBL climate of a given educational context.



Problems may be derived from situational contexts

- The situational context angle may be expressed mainly through a need for intervention or construction
- e.g. "How may undesirable state A be overcome and/or replaced by desirable state B?"
- or "How may technical gadget C, serving such and such purposes, come to life?
- or mainly through a need for understanding or theoretically reflected description
- e.g. "Why or how is event D happening the way it is?



Problems may be derived from person(s), i.e. learner(s)

. . .

- O PBL is structured as small-scale research activity. But the educational purpose of this research activity is to drive personal learning processes
- O The personal learning needs that guide PBL project work may have their main focus on acquisition of
  - ✓ general, scientifically corroborated knowledge (textbook++) ...
  - ✓ skills acquisition ("How to ... ?" with no specific regard to context)
  - competence development (skilled problem-solving -*in-complex-situational-context*)
- In the collaboration process between student and supervisor (tutor, mentor) specific attention must be paid to personal aspects of the students' learning process





Student responsibility for learning: This PBL aspect is what must constantly be negotiated as part of project supervision



Donald A. Schön's triadic model for professional training has three training modes:

- ✓ Follow me;
- ✓ Joint Experimentation;
- ✓ Hall of Mirrors
- High quality supervision requires competence in all three training modes
- ... and competence in blending them skillfully in response to evolving supervisory needs
- ... and competence in keeping them nicely separated through process means; cf gamemaster concept



#### Follow me

- The easiest training mode to explain (according to its name), and *therefore* mentioned first
- Supervisor demands student's obedience wherever such obedience is unquestionably warranted
- To the extent that Follow me is overemphasized, i.e. beyond what is *unquestionably necessary*, the PBL quality of the supervisory relationship gets impaired



#### Joint Experimentation

- O In Joint Experimentation leadership / followership is reversed
- O Supervisor's followership is not uncritical but critical attitudes are not expressed by means of criticism (fault-finding), but through intellectual challenges, queries for clarification, expressions of bewilderment ...
- O In other words:
  - The student(s) is/are in practice acknowledged as owner(s) of the problem – and the ongoing re-structuring / re-making of the problem
  - The supervisor shows his/her worth by suggesting possible improvements to the students' way of understanding and/or investigating the problem



#### Hall of Mirrors

- In Hall of Mirrors the two relational partners, student(s) and supervisor, do a shared scrutiny and/or negotiation of their relationship, i.e. move from the gameplayer to the gamemaster position ...
- ... either because one or the other or both experience the relationship as, possibly, sub-optimal and in need of improvement, learning-wise
- or out of learning-motivated curiosity: "What is going on between us? – What professional learning can we extract from our ways of collaborating?"







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