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PROBLEM BASED LEARNING IN A TECHNICAL FIXED PROSTHODONTIC CURRICULUM

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Faculté de Chirurgie Dentaire (FCD) Paris5

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INTRODUCTION

The approach by problem based learning enables students to reach the skills expected by the teachers. That is why, last year, we introduced a problem-based learning approach in the technical fixed prosthodontics preclinical works, with the agreement of our Dean.

OBJECTIVES

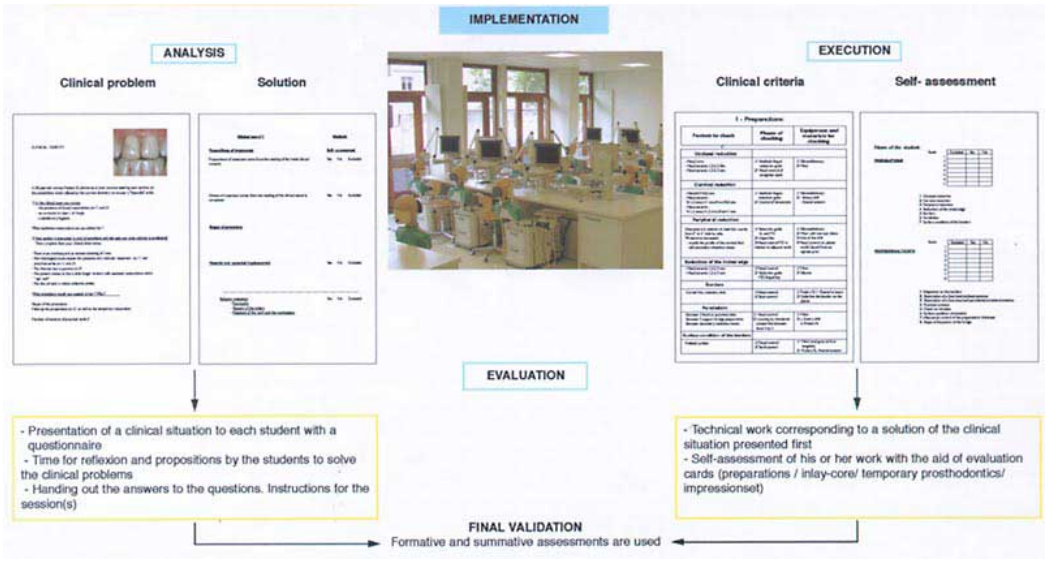
To enable students:

1. to analyze the types of problems with which he or she is confronted,
2. to make up strategies of resolution,
3. to execute the tasks constituting the chosen strategy effectively
4. to assess the results with an appropriate method

To enable teachers:

- to give students autonomy

OVERVIEW (details in text below)



IMPLEMENTATION

ANALYSIS:

Clinical problem
CLINICAL CASE N°1

A 25-year-old woman, Madam O., shows up at your practice seeking your opinion on the possibilities offered by the current dentistry to recover a "beautiful" smile.

In the clinical exam you notice:

- the presence of tinted restorations on 11 and 21
- an occlusion in class 1 of Angle
- a satisfactory hygiene

What aesthetic restorations can you advise her?

Your patient is interested in your propositions and she asks you what solution is preferable?
Then complete your clinical observation.

- There is an overhang and an incisive covering of 1mm
- The radiological exam reveals the presence of a radicular treatment on 11 and proximal caries on 11 and 21
- The thermic test is positive on 21
- The patient wishes to find a little longer incisors with aesthetic restorations which "age well" (vieillissent bien)
- The line of neck is visible while she smiles

What procedure would you suggest to her? Why?

Stages of the procedure:
Make up the preparation on 21 as well as the temporary restoration.

Number of sessions of practical work: 2

Travaux pratiques de Prothèse conjointe 2000-2001 - doc. 14 octobre 2000 Discipline de Prothèse conjointe - G. Girot, D. Dot, G. Tirlet, P. Tramba et l'ensemble des assistants.
Avec la collaboration de: R. Benbelaïd, N. Eid. Prothésiste: O. Corruble - Secrétariat: M. Loiseau

ANALYSIS:

Solution
CLINICAL CASE N°1

Student:

Propositions of treatments	**Auto-evaluation**		
Propositions of treatment come from the reading of the initial clinical scenario	Yes	No	Excluded
Choice of treatment come from the reading of the clinical scenario completed	Yes	No	Excluded
Stages of realization			
Material and materials implemented	Yes	No	Excluded
Behavior evaluation	Yes	No	Excluded
- Punctuality			
- Respect of the orders			
- Neatness of the work and the workstation			

- Presentation of a clinical situation to each student with a questionnaire
- Time for reflexion and propositions by the students to solve the clinical problems
- Handing out the answers to the questions. Instructions for the session(s)

EXECUTION:

Clinical criteria

1 - Preparations:

Factors to check	**Means of checking**	**Equipment and materials for the checking**
Occlusal reduction		
- Metal : 1mm - Metal-ceramic : 1,5 to 2 mm - Ceramic-ceramic: 1,5 to 2 mm	1/ Vestibulo-lingual reduction guide 2/ Visual control of antagonist teeth	1/ Silicone/bistoury 2/ Miror
Cervical reduction		
- Metal : VLP = 0,5 mm - Metal-ceramic: V:1,2 mm, L=1 mm, Prox=0,8mm - Ceramic-ceramic: V:1,5 mm, L=1,5 mm, Prox=1 mm	1/ Vestibulo-lingual reduction guide 2/ Control of dimensions	1/ Silicone/bistoury 2/ - Rotary drill - Enamel scissors
Peripheral reduction		
Clearance is in relation to insertion course from 3° to 5° side by side. *if clearance increased: - modify the profile of the cervical limit - add secondary retention means	1/ Reduction guide VL and MD 2/ Lingual key 3/ Visual control MD in relation to adjacent teeth	1/ Silicone/bistoury 2/ Miror with a one eye vision 3/ Axis of the drill 4/ Visual control on plaster model issued from an alginate print
Reduction of the incisal edge		
- Metal-ceramic: 1,5 to 2 mm - Céramic-ceramic: 1,5 to 2 mm	1/ Visual control 2/ Reduction guide MD Lingual key	1/ Miror 2/ Silicone
Borders		
Curved line, constant, clean	1/ Visual control 2/ Tactil control	1/ Probe n°6 / - Enamel scissors 2/ Underline the border on the plaster
Parallelism		
Between 2 axial or proximal sides Between 2 support bridge preparations Between secondary retention means	1/ Visual control 2/ Locating by translation comparison between faces 2 by 2	1/ Miror 2/ a. Rotary drill b. Probe n°6
Surface condition of the borders		
Polished surface	1/ Visual control 2/ Tactil control	1/ Miror (red grain drill or tungsten) 2/ Probe n°6, Enamel scissors

EXECUTION:

Self-assessment
Name of the student:

PREPARATIONS

Tooth	Excluded	Yes	No
1			
2			
3			
4			
5			
6			
7			

1. Occlusal reduction
2. Cervical reduction
3. Peripheral reduction
4. Reduction of the incisal edge
5. Borders
6. Parallelism
7. Surface condition of the borders

PROVISIONAL TOOTH

Tooth	Excluded	Yes	No

1			
2			
3			
4			
5			
6			
7			

1. Adaptation to the borders
2. Restoration of a fonctional occlusal anatomy
3. Restoration of a fonctional and parodontal peripheral anatomy
4. Proximal contacts
5. Check on intrados
6. Surface condition of extrados
7. Afterwards control of the preparation's thickness
8. Shape of the pontic of the bridge

- Technical work corresponding to a solution of the clinical situation presented first
- Self-assessment of his or her work with the aid of evaluation cards (preparations / inlay-core/ temporary prosthodontics / impressionset)

EVALUATION

FINAL VALIDATION
Formative and summative assessments are used

AFTER 1 YEAR OF PROBLEM-SOLVING : report on the teaching

CONTRIBUTIONS

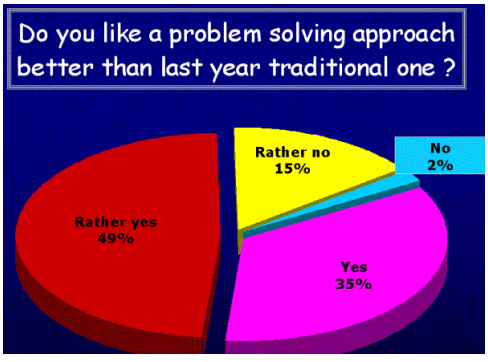
- need to grade teachers
- common discussion of clinical problems

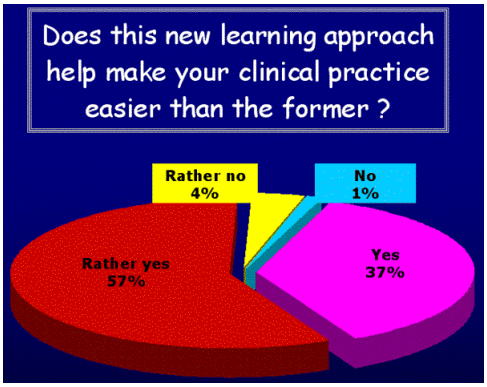
REQUIREMENTS

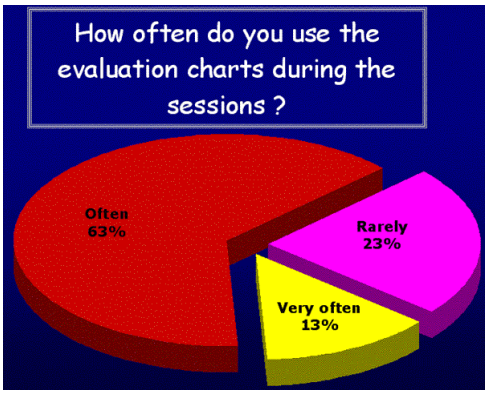
- time required by teaching
- time for training the teaching team

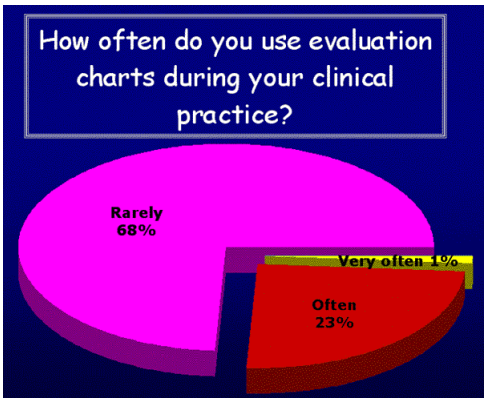
WHAT DID THE STUDENTS THINK ABOUT THE COURSE?

An anonymous questionnaire handed out to 101 students made us aware of their opinion on this new form of teaching.
The main results were:









CONCLUSION

This mode of learning seems to meet a favorable echo among students. The results of the summative process of the first session of exam were:

- 92 % of success in the analysis and the planning treatment
- 69 % of success in the execution (period of learning, need to clarify better rules of the game).

This new approach by problem based learning in technical works must be developed because it provides a helpful method of learning for all students in their preclinical technical works. Nevertheless we need more time to assess the real impact of this teaching on the student's clinical practice.

LITERATURE

- Problem solving and problem-solving education in dentistry. J.J. ten Bosch. eur J Dent Educ 1997; 1: 18-24

This poster was submitted by Daniel DOT, MD.

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Poster Faksimile:

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Dept. of fixed Prosthodontics, University of Paris 5, France.

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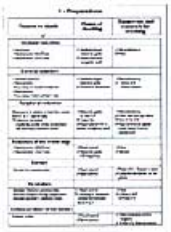

Self- assessment

EVALUATION

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Number of answers : 101
Specific point: These students had received both traditional and new forms of teachings

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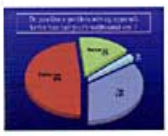

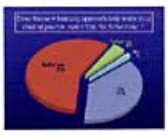

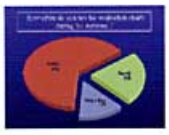

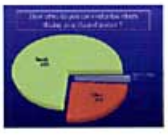

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