

STUDENT-CENTRED CURRICULUM: IMPROVING STUDENTS' LEARNING OR JUST “THE EMPEROR’S NEW CLOTHES”

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Reform process at Faculty of Agriculture (FoA), Belgrade University

Inputs:

- Introduction of reformed study structure adapted to requirements of the Bologna declaration in 2007/08
- Assistance of 2 TEMPUS and few WUS projects
- Improved learning environment, teaching equipment, e-learning
- Faculty and its study programs were accredited in 2008 for next 5 years by the National Accreditation Commission
- In the period 2003-2007 30 teachers of the FoA completed the course on interactive teaching methodology

The subject of this paper is to assess the extent to which the reforms have been put into practice

Our focus in this analysis is on 2 important parameters:

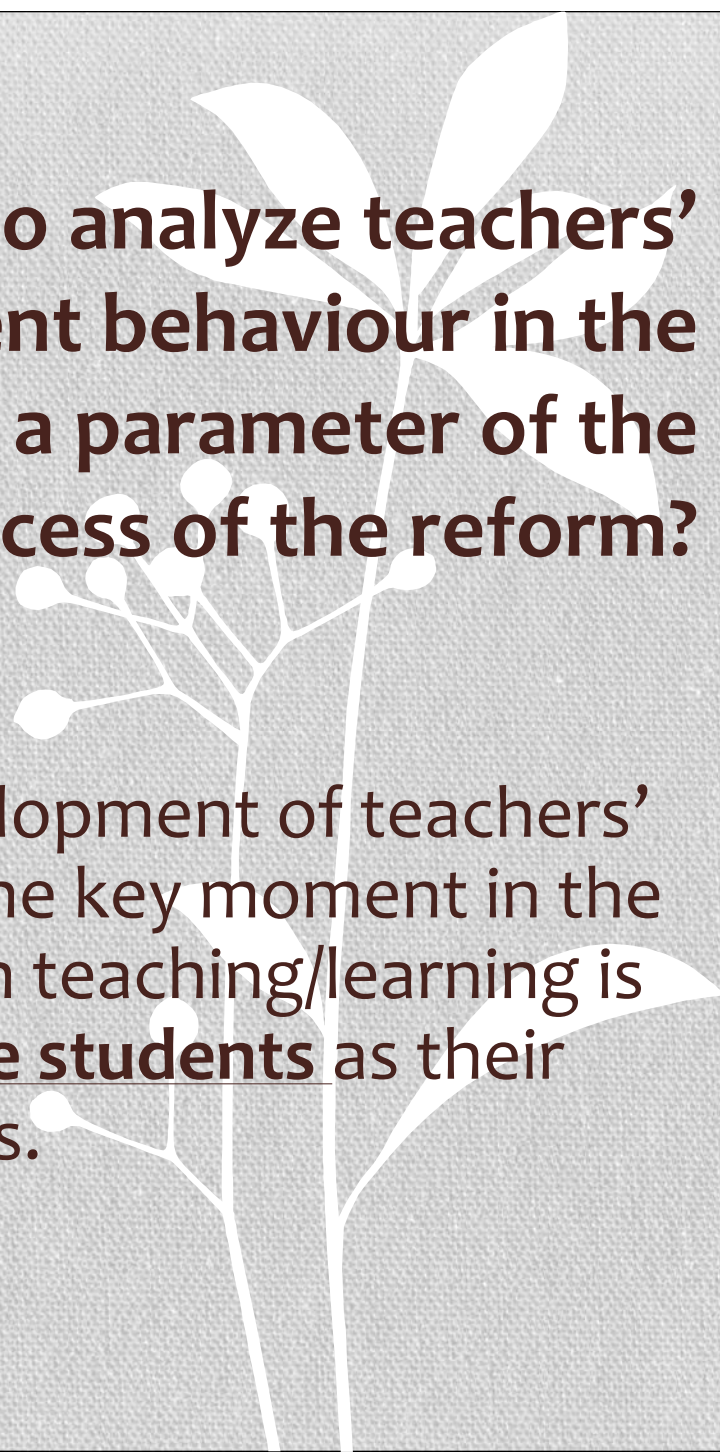
- Changes in syllabi - one of most important of all reform documents.
- Teacher`s perception of students behaviour in the “reformed” teaching process



Why we need to analyze syllabi documents?

- Syllabus is the most important document since it defines all aspects of the teaching /learning process (goals, learning outcomes, content, teaching and evaluation methods)
- The syllabus should, also, determine the roles of both, students and teachers in the teaching process.



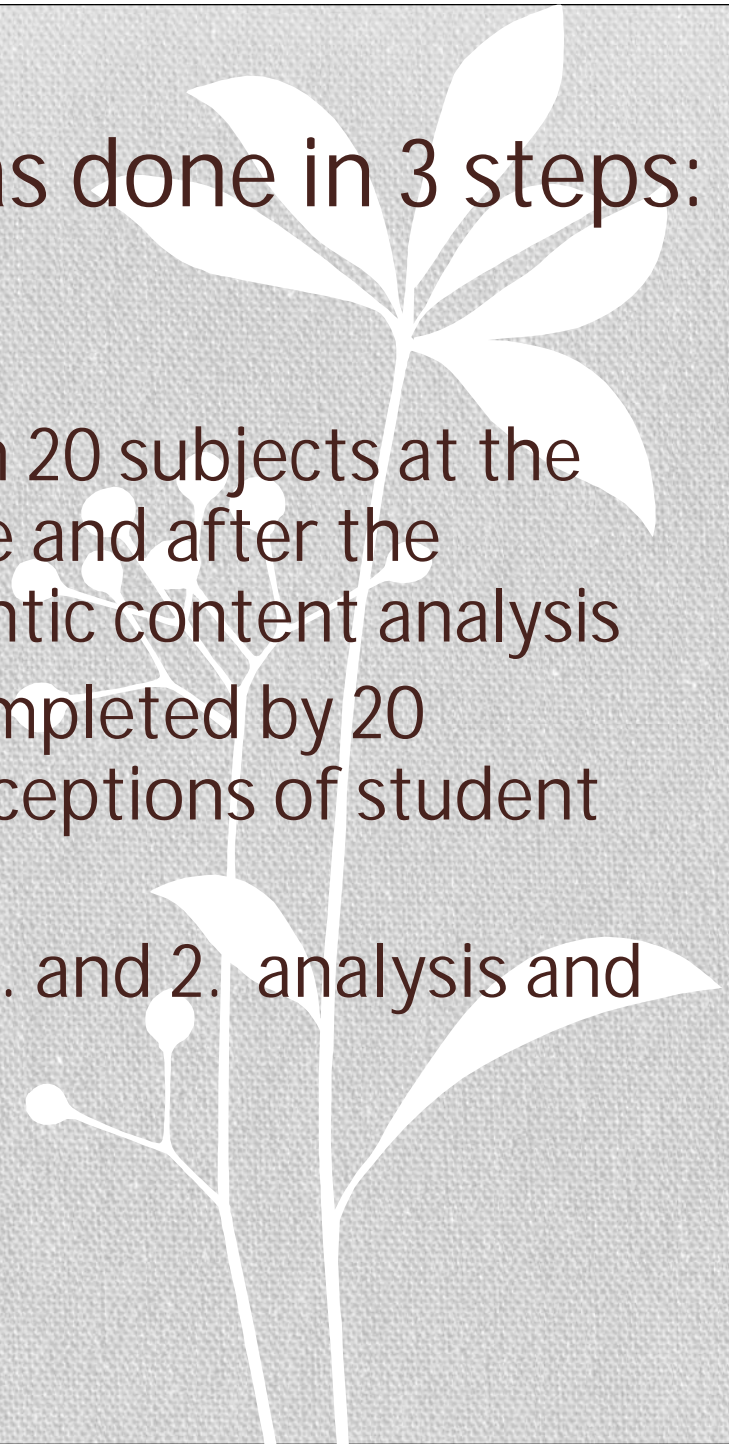


Why do we need to analyze teachers' perception of student behaviour in the teaching process as a parameter of the success of the reform?

- Extensive research on the development of teachers' competences has shown that the key moment in the change of the teacher's view on teaching/learning is when **teachers start to perceive students** as their partners in the teaching process.

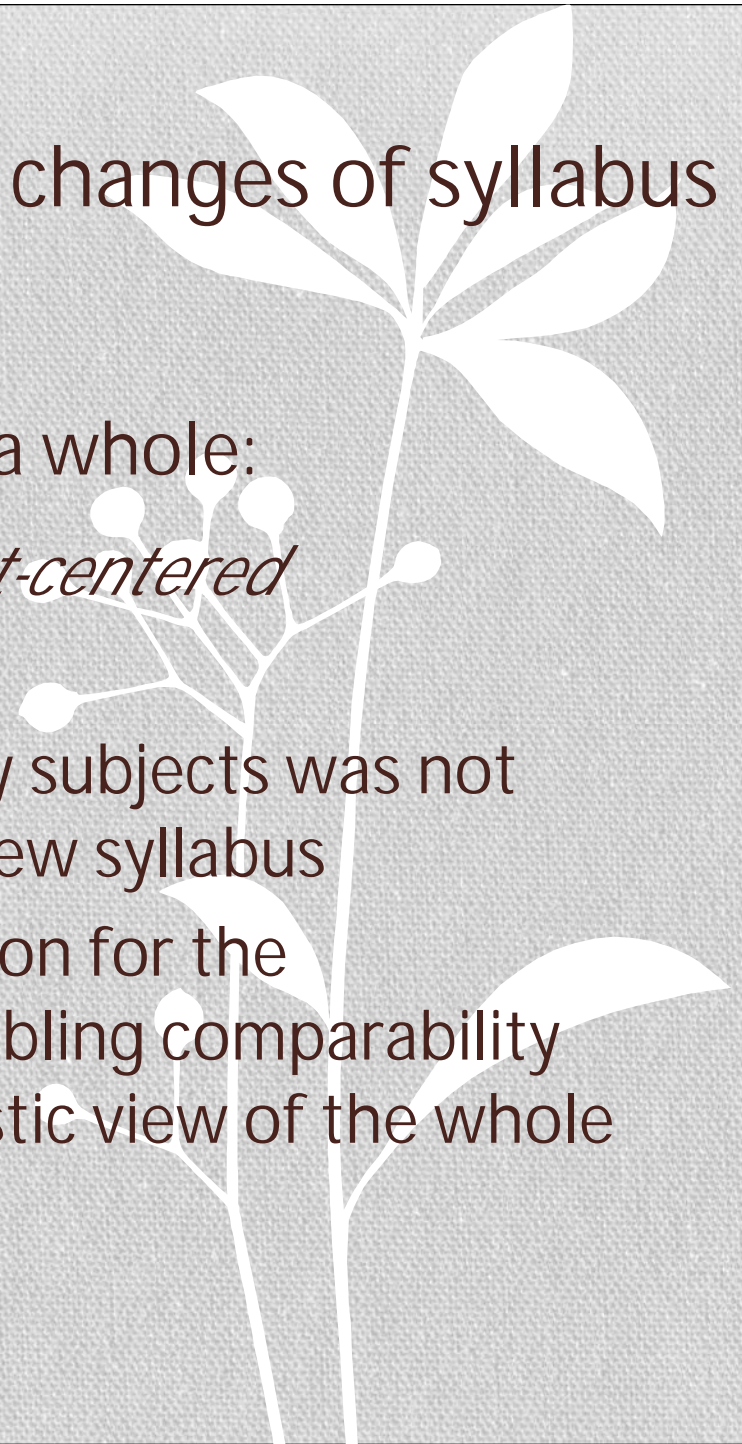
Analysis was done in 3 steps:

1. Comparison of programmes in 20 subjects at the Faculty from the period before and after the curricular reforms using semantic content analysis
2. Analysis of questionnaires completed by 20 teachers to establish their perceptions of student activities during their lessons
3. Comparison of the results of 1. and 2. analysis and conclusions



1. Step: Analysis of the changes of syllabus

- a. Analysis of the document as a whole:
 - New type of document: *student-centered*
 - Number of new segments
 - Form of the document for every subjects was not strictly defined, as it is for the new syllabus
 - Consequences: useful information for the teaching/learning process + enabling comparability among subjects + enabling holistic view of the whole study programme



POLJOPRIVREDNA TOKSIKOLOGIJA

Uvod u toksikologiju. Definicije i predmet. Toksične susptancije, biosistem i toksični efekti. Broj časova: 2 + 0

2. Metode u toksikologiji. Eksperimenti in vivo i in vitro i testovi toksičnosti. Metodologija analize toksičnih supstancija u namirnicama i životnoj sredini Broj časova: 4 + 9

3. Izloženost toksičnim supstancijama. Učestalost, putevi i procena. Broj časova: 2 + 3

4. Toksikokinetika. Transport kroz telesne membrane, resorpcija, raspodela, metabolizam i izlučivanje. Broj časova: 6 + 3

...

NAČIN I USLOVI POLAGANJA ISPITA:

Ispit se polaže usmeno. Uslov za izlazak na ispit je prethodno položen ispit iz Posebne fitofarmacije.

LITERATURA:

1.Milošević M.P. i S. Lj. Vitorović: »Osnovi toksikologije sa elementima ekotoksikologije«, Naučna knjiga, Beograd, 1992. godine.

2.Amdur, M. O., J. Doull and C. D. Klassen (Eds.) Casarett and Doull's Toxicology. The Basic Science of Poisons. Fourth Ed., Mc Graw-Hill, Inc., New York, 1991. godine.

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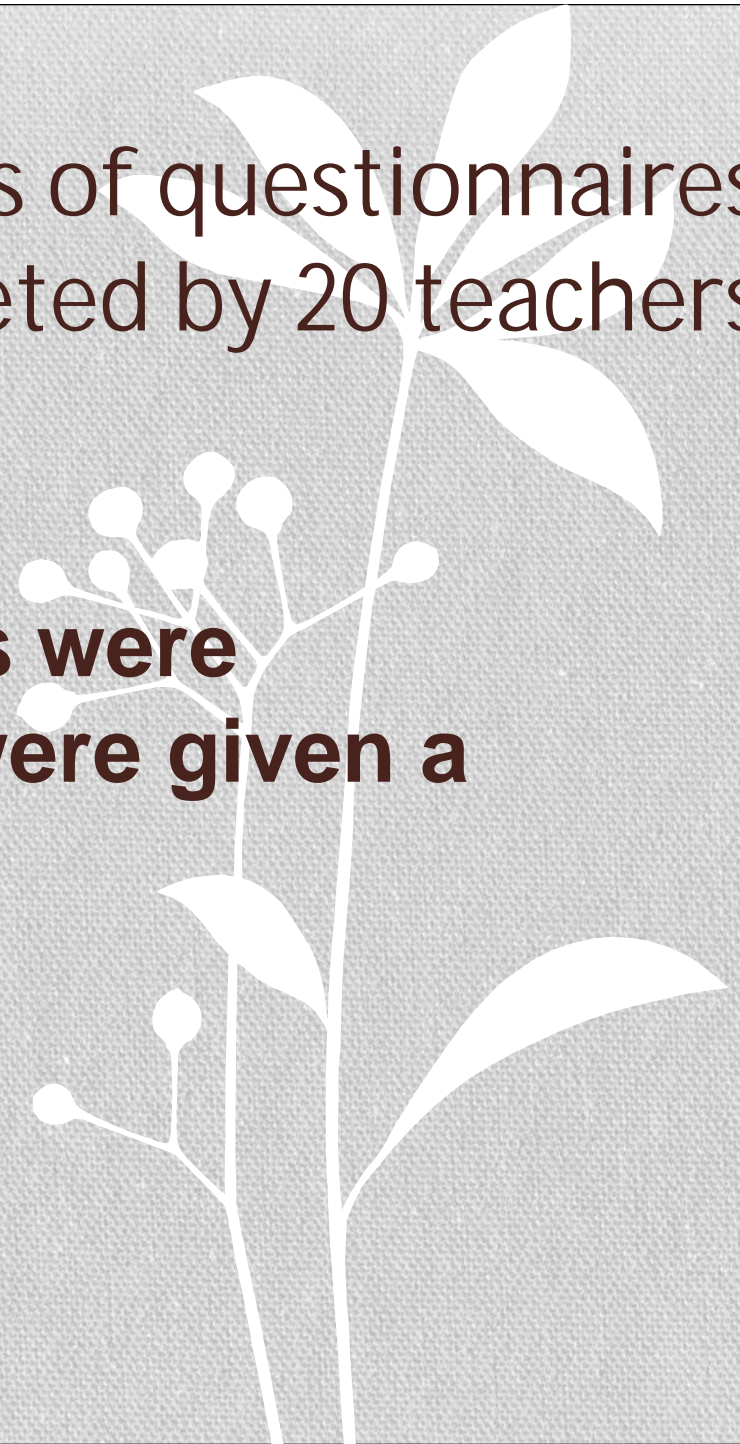
Студијски програм : ФИТОМЕДИЦИНА		
Врста и ниво студија: Дипломске академске студије		
Назив предмета: ПОЉОПРИВРЕДНА ТОКСИКОЛОГИЈА СА ЕКОТОКСИКОЛОГИЈОМ		
Наставник или наставници: Каран Ж. Весела		
Статус предмета: Обавезни		
Број ЕСПБ: 6		
Услов: -		
Циљ предмета: а) знања/разумевања основа токсикологије и екотоксикологије и примене принципа ових дисциплина у изучавању пестицида и других токсичних материја које се примењују или доспевају у процесе пољопривредне производње и до човека; упозна са могућим директним и индиректним ефектима токсичних супстанци на људе, биљни и животињски свет. б) вештина : за безбедну употребу пестицида и за процену, спречавање и разумевање ризика од професионалне и непрофесионалне изложености токсичним супстанцама и штетних последица деловања током промета и примене за здравље људи и животну средину.		
Исход предмета Студент треба да покаже познавање: основних и изведених параметара токсичности пестицида за различите организме и њихов значај; могуће путеве професионалне и еколошке изложености организама и факторе од којих зависе; општих принципа ресорпције, транспорта, расподеле, метаболизма и излучивања из организама и животне средине; општих принципа механизма токсичног деловања и могућих интеракција са биолошким системима; услова за безбедну примену пестицида; општих принципа у процени опасности и ризика за организме и животну средину базираних на односу доза-ефекат и процени опасности.		
Садржај предмета Теоријска настава :Увод у токсикологију и екотоксикологију; Токсичне супстанције - појам, подела, особине; Токсиколошка и екотоксиколошка проучавања од ћелијског нивоа до заједница и екосистема; Основни и изведени токсиколошки параметри и њихов значај; Изложеност токсичним супстанцијама (путеви, фактори од којих зависи); Токсикокинетика токсичних супстанција (ресорпција, дистрибуција, метаболизам, излучивање, кумулација, магнификација, адаптација); Токсикодинамика т.с. (механизми деловања отрова, однос дозе и деловања, синергизам и антагонизам; Мутагене, карциногене, тератогене и ембриотоксичне супстанције и ефекти; Непосредна штетна деловања пестицида и заштита здравља људи; Основни принципи процене опасности и ризика за здравље људи од остатака агрохемикалија у храни и води за пиће; Основни принципи процене опасности и ризика за животну средину. Практична настава: Тестови токсичности. Одређивање средње смртне дозе/концентрације (LD-50, LC-50). Одређивање дозе без штетног ефекта (NOEC). Ресорпција кроз кожу; Одређивање активности ензима AChE; Одређивање односа токсичности и изложености (TER) и интерпретација резултата.		
Препоручена литература Виторовић, С., Милошевић, М. (2002): Основи токсикологије са елементима екотоксикологије. Визартис, Београд.; Допунска литература: Каран, В., Мојашевић, М.: Практикум (on line)		
Број часова активне наставе _____ Остали часови:-		
Предавања: 3	Вежбе: 2	Студијски истраживачки рад:
Методе извођења наставе		
Класична предавања, методе интерактивне наставе (групне), вежбе		
Оцена знања (максимални број поена 100)		
Предиспитне обавезе	Поена 40	Завршни испит Поена 60
активност у току предавања	10	писмени испит -
практична настава	10	усмени испт 60
колоквијум-и	
Тест-ови	20	
семинар-и		

b. Detailed analysis showed:

- Some segments are the same: content, literature, number of classes, strict division of the types of classes (lectures and practicals), ways of examination
- New segments appearing for the first time: Type and level of studies, subject status, number of ECTS, goals, learning outcomes, teaching methods, evaluation of student's knowledge
- Segments which were changed (differ significantly either in form or in content): number of classes defined in details, new terms defined, in addition to lectures and practicals such as: other forms of teaching and student's research work, "the rest".

Step 2 of analysis: Analysis of questionnaires
completed by 20 teachers

**Teachers whose subjects were
previously analysed were given a
simple questionnaire:**



Lecturer name: _____

Subject (degree course): _____

Study level (year): _____

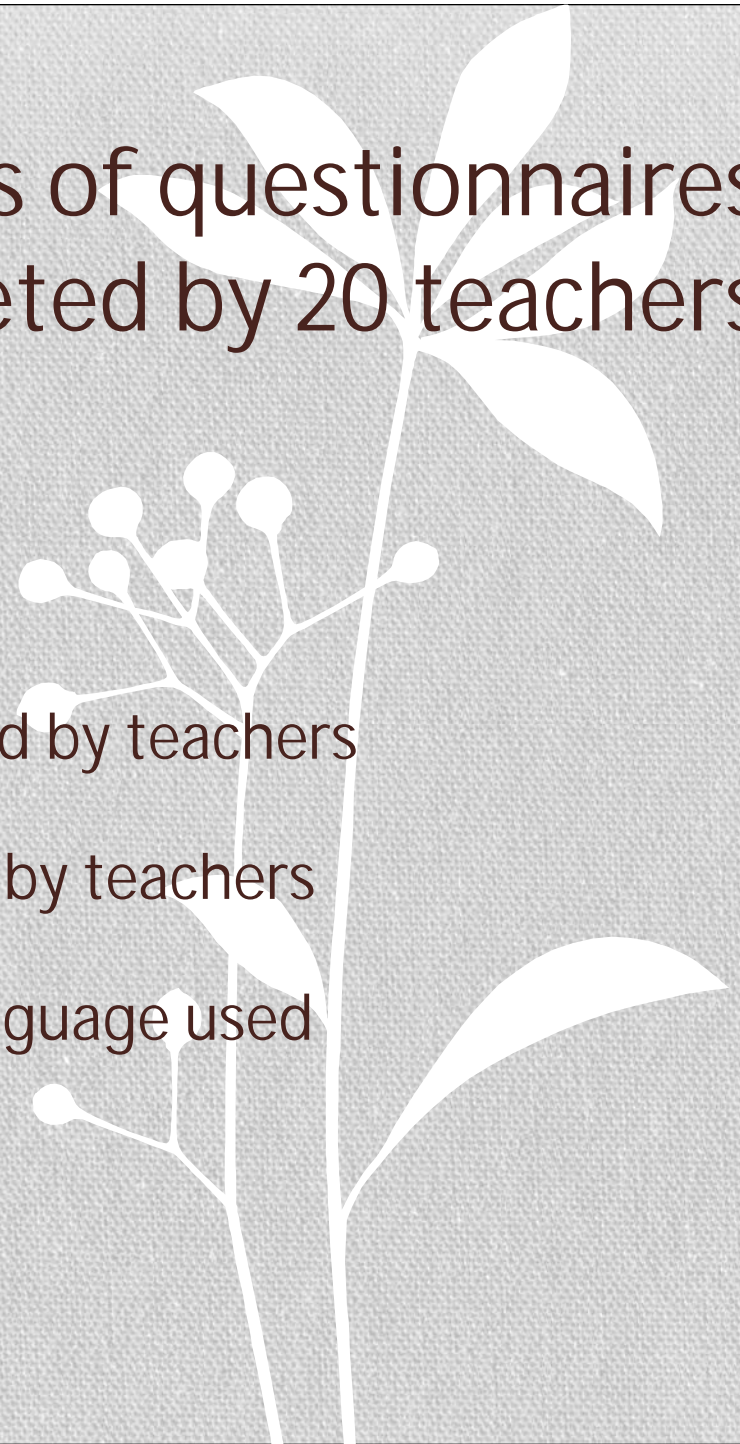
Number of students on the course: _____

<i>List of student activities during the lecture course</i>	<i>Percentage of time during the lecture course that the activity is carried out</i>
Total time during the lecture course	100

Step 2 of analysis: Analysis of questionnaires completed by 20 teachers

We have analysed:

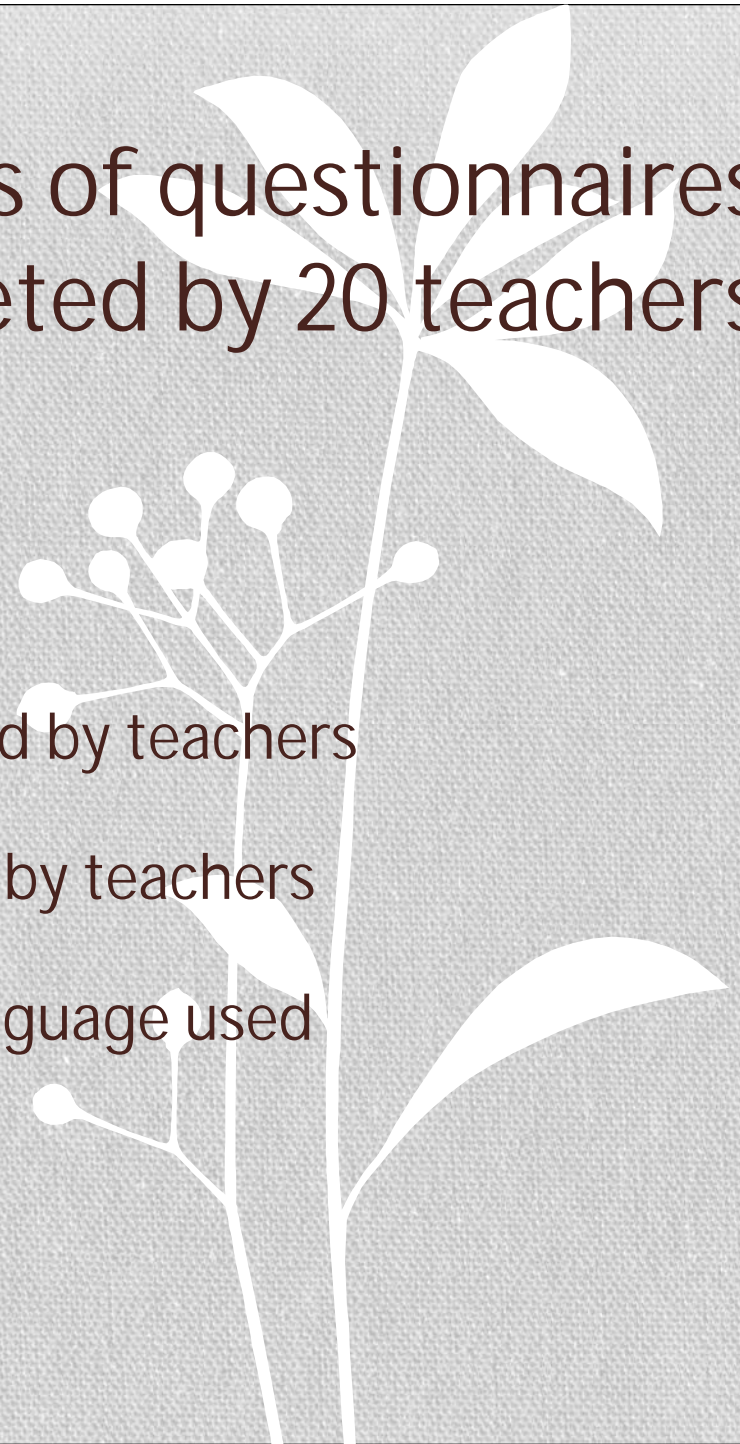
1. Number of student activities listed by teachers
2. Variety of student activities listed by teachers
3. Definition of student activities language used



Step 2 of analysis: Analysis of questionnaires completed by 20 teachers

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1. Number of student activities listed by teachers
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Number of student activities

- Total number of activities listed is high (40 different activities found in questionnaires)
- However, number of activities per teacher is relatively small as presented below:

Number of activities	Number of teachers
1	2
2-5	11
6-8	5
9-11	2

Variety of student activities



Most teachers list classical student activities:

1. ...listen
2. ...answer the questions
3. ...work on seminar (usually means preparing a PowerPoint presentation for a talk!)
4. ...solve the test

Some new, not previously used activities were listed by few teachers: case study analysis, problem solving, discussions on some topics, participation in workshops, group work...

Definition of student activities



1. Instead of listing activities some teachers listed emotional manifestations of students (pleasure, content, requests...)
2. Mixing student's and teacher's activities with content of the teaching unit ("preparing students for the topic...")
3. Different levels of generalisation
4. Description of the student's activities not precise (it is not clear who is doing what)
5. Only a few teachers have precisely defined student learning activities during class

Step 3: **Comparative analysis of the results from steps 1 and 2**

- The first analysis showed a significant improvement **in the study programme document** - syllabus concerning the student-centered orientation of the teaching/learning process
- The second analysis of questionnaires showed that **teacher perceptions of students' learning activities** during the class **have changed a little - they do not understand sufficiently teaching/learning process**
- Majority of university teachers are not competent to perform successfully student-centered curriculum, eg. to create **learning opportunitites** during their classes

Conclusion



Without reform of teachers' competences, and education system support there is no effective reform of the study process, and the Bologna process might become merely a story of the ***“Emperor's new clothes”!***