

# STUDENT SELF-EVALUATION OF CO-LECTURE ACTIVITIES

**Darinka Sikosek**  
University of Maribor, Slovenia  
E-mail: darinka.sikosek@uni-mb.si

## Abstract

*This article argues a greater stress to student-centered, active-learning approaches in teacher education beginning already in lectures by the subjects of DCEM<sup>1</sup> methodological module. Our approach in increasing lecture's activity of students is involving them as teacher's co-lecturers. In order to monitor the efficiency and quality improvement of their outcomes-teacher's activities, we make use of the students'-co-lecturers, as well as students-listeners feedback, which continuously takes place at the end of a program of specific curricular units. Students self-reflections are confronted with teacher's trainer noticings. Some significant findings are interpreted in compliance with teacher competences. CO-lecture's activities are valued regarding to optional AADIDG<sup>2</sup> didactic principles.*

**Key words:** teaching skills and competences, student autonomy, self-evaluation, students-colecturers.

## Introduction

Implementing the curricular aims of the DCEM methodological module is carried out by the application of generic competences from the pedagogical-psychological-didactic subject module<sup>3</sup> as the areas of knowledge and acquisition, as well as key subject-specific competences. The standard determination of acquired professional target competences is defined in the program under the didactic parameter "Students obligations". Actual realisation of the above mentioned methodological module includes also the lectures as one of traditional form of university instruction. The improvement of our lectures by DCEM subjects is an introduction to the students as teacher's co-lecturers. This approach may be interpretative as one of students' opportunities for the enlargement of their lecture's activities and consecutive promoting their better understanding of curricular contents. Actually, students are more motivated and internalize subject's contents more effectively when they find themselves bearing in active roles (Challen and Brazdil, 1996).

Beside teacher's competences we pay full attention also to the didactic principles which could be taken into consideration by performing co-lectureship learning situations. There are at least AADIDG didactic principles which students-teacher's co-lecturers have learned.

For successful developing of teacher's competences it is important for both student-to-teacher and student-to-student dialogue (Challen and Brazdil, 1996) that enables students an understandable teacher-students co-lectureship. On the other hand, this partnership offers both to the students and to teacher-trainers to become aware of their practice and to discover new

---

<sup>1</sup> DCEM abbreviation means the following subjects: Didactics of Chemistry, Experiments and Natural Activities-Mentorship.

<sup>2</sup> AADIDG abbreviation means the following didactic principles: Activity, Autonomy, Differentiation and Individualisation, Democracy, Gradual study.

<sup>3</sup> As equal component is the syllabus of any pedagogical program carried out at the Faculty of Science and Mathematics (one of entities of former the Faculty of Education), University of Maribor, is the pedagogical-psychological-didactic subject module (Pedagogy, Psychology and Didactics).

possibilities. At the same time there is also an affirmation of each other as professionals what contributes to creating positive working relationships (Mulford, 2006).

In our research we have developed an active approach of students' lectures' attendance (participation) called students-teachers co-lecturers. Performing a lecture's role during academic curricular lectures provides a number of teachers' competences by Bologna process. In this role they participate in the following groupings: a teacher-trainer-student pair, a student-student pair or student-student team.

In order to monitor the efficiency and quality improvement of lectures' activities we make use of the students'-participants feedback or self-reflection, communicated to teacher-trainer who ensures the collection of continuous feedback, which takes place at the end of a program of specific curricular units. Analysis of applied checklist included six methodological parameters, namely: Organisation, Aims/professional knowledge/skills, Didactic principles, Communication, Performance conditions, Quality of the teacher-trainer's work and his/her personal characteristics and Others.

A running evaluation of the students-as co-lecturers' model (gained from student feedback) confirms greater student interaction with the acquisition of content as well as students' persuasive experiences of didactic principles, especially implementation of the activity and democracy principles.

## Methodology of Research

### *Research Methods and Instruments*

As a basic descriptive empirical method we use continuous monitoring, and inquest of an optimal operational "model" for lectures, we use an inquiry method called "Three by three evaluation". The students evaluate the quality of lectures by giving feedback according to three descriptive evaluation parameters: (a) good, (b) bad, (c) suggestions, marked as the following evaluation pointers: (a) positive opinion (+), (b) negative opinion (-) and (c) suggestions for improvement (④).

### *The Sample of Students Polled*

Students' self-evaluation of quality in lectures activities produces real continuity in my strategy for teacher education. Among the feedback providers, there are students from all current academic year generations. As an illustration, some evaluation summaries were gathered during the study process from two student generations who finished the lecture programmes for the subjects "Didactics of Chemistry" and "Experiments" in the academic year 2003/04.

In terms of the quality of lecture activities, the sample of selected generation consisted of 40 student respondents who completed the checklist for "Three by three evaluation". Analysis of results including students' most frequent and most important opinions (Sikošek, 2007) about good and bad points, as well as their suggestions for improvement is continued, is done according to the following methodological parameters: (1) organization, (2) goals/teacher's knowledge/skills, (3) didactic principles (participation, democracy and so on), (4) communication, (5) performance conditions, (6) quality of teacher-trainer activity and his/her personal characteristics, and (7) other.

### *Analysis and processing of feedback information (evaluation opinions).*

Processing of statistical feedback data from the "lecture" questionnaire was done using the Excel programme and is presented in frequency tables in the next chapter.

## Results of Research

*What does feedback from students as active lecture listeners tell us?*

Didactic analysis of respondent's feedback, classified as points A, B, C is presented in the frequency tables A, B, C.

**Table A: To praise / to point out the following aspects**

No.	Answer	f	f%
<b>Parameter 1: Organisation</b>			
1.	Including student-co-lecturers	10	76.9
2.	Timetable order	2	15.4
3.	Perfect organisation	1	7.7
Total		13	100.0
<b>Parameter 2: Aims/professional knowledge/skills</b>			
1.	Ensuring the extent of professional knowledge	1	12.5
2.	Student lecturer's contributions	5	62.5
3.	Opportunity for revising and deepening knowledge	1	12.5
4.	Experimental lecture through discussion	1	12.5
Total		8	100.0
<b>Parameter 3: Didactic principles</b>			
1.	Large share of active "listeners"	9	40.9
2.	Including students as co-lecturers	10	45.5
3.	Discussable learning	1	4.5
4.	Lecture contributions for becoming accustomed to independent individual activities and customized study	2	9.1
Total		22	100.0
<b>Parameter 4: Communication</b>			
1.	Good (personal) attitude towards students	3	27.2
2.	Communal attitude	1	9.1
3.	Cooperative communication about task	7	63.7
Total		11	100.0
<b>Parameter 5: Performance conditions</b>			
1.	Given handouts	7	100.0
Total		7	100.0
<b>Parameter 6: Quality of the teacher-trainer's work and his/her personal characteristics</b>			
1.	Teacher's tolerance for different interpretations	3	10.8
2.	Teacher-trainer's systematic performance, gradated study (pace), clarity, tempo	9	32.1
3.	Teacher-trainer's expertise, good preparation	5	17.8
4.	Illustration of didactic situations, applied-experience knowledge	2	7.2
5.	Use of various didactic materials (e.g. MM, powerpoint)	9	32.1
Total		28	100.0
<b>Parameter 7: Others (in random order)</b>			
1.	Learning of abstract thinking	1	33.3
2.	Teacher-trainer's response to co-lecturer's SOS in problem solving situations	1	33.3
3.	Use of English terminology	1	33.3
Total		3	100.0

**Table B: The following comments/criticism were stated**

No.	Answer	f	f%
<b>Parameter 1: Organisation</b>			
1.	Occasional prolongation of class time	6	40.0
2.	Large amount of individual preparation	3	20.0
3.	Too short deadlines for lecture contributions	1	6.6
4.	Three hours duration of lecture	3	20.0
5.	Early class hour in timetable	1	6.6
6.	Too few hours for the subject	1	6.6
Total		15	100.0
<b>Parameter 2: Aims/professional knowledge/abilities &amp; skills</b>			
1.	Too small a selection of colloquium problems/tasks	1	100.0
Total		1	100.0
<b>Parameter 3: Didactic principles</b>			
1.	Occasional difficulty reading handouts	8	66.6
2.	Over-emphasis on detail	2	16.6
3.	Transparency boredom	1	8.3
4.	Too much content in scheduled lectures, occasionally	1	8.3
Total		12	100.0
<b>Parameter 4: Communications</b>			
1.	Too many abbreviations	4	80.0
2.	Efficiency of group work instruction	1	20.0
Total		5	100.0
<b>Parameter 5: Performance Conditions</b>			
1.	Too many: (a) miscellaneous tasks, (b) shared partial tasks, (c) too much time consumed;	1	10.0
2.	Unsuitable lecture room	2	20.0
3.	Heavy program demands of the double major	2	20.0
4.	Problems with carrying out of individual group work (various locations)	1	10.0
5.	Large quantity of lecture obligations	2	20.0
Total		10	100.0
<b>Parameter 6: Quality of teacher-trainer's activities and his/her personal characteristics</b>			
1.	Teacher-trainer's occasional impatience with answer from the selected student	1	11.1
2.	Occasional problems understanding student's initial instructions or sometimes incomprehensible instructions from the co-lecturers instructions	5	55.5
3.	Barely comprehensible or incomprehensible questions	2	22.2
4.	Teacher-trainer's bad mood (because of student absence from class)	1	11.1
Total		9	100.0
<b>Parameter 7: Others (in random order)</b>			
1.	English insertions	3	75.0
2.	Interruptions necessitated by turning off the light	1	25.0
Total		4	100.0

**Table C: The following suggestions were stated**

No.	Answer	f	f%
<b>Parameter 1: Organisation</b>			
1.	Varying amount of homework from week to week	1	9.1
2.	Lecture schedule (3 times a week, laboratory didactic practicum for lecture)	2	18.2
3.	Notice board for assignments and instructions, deadlines	1	9.1
4.	Extension of deadlines for handing in lecture contributions	1	9.1
5.	More hours for lectures, regardless of semester rearrangement, carrying out of school experiments and fewer home or independent activities	3	27.2
6.	No scheduling lecture and laboratory didactic practicum on the same day	1	9.1
7.	Field examinations	1	9.1
8.	Regular schedule of analysis and consultation	1	9.1
Total		11	100.0
<b>Parameter 2: Aims/professional knowledge/abilities &amp; skills</b>			
1.	Simulation of special macro-didactic situations (e.g. checking and assessing)	1	16.6
2.	More examinational problem solving tasks	1	16.6
3.	Demonstrations of laboratory techniques (video, MM)	2	33.3
4.	Independent lecture study obligations should be defined as the content of laboratory didactic practicum	1	16.6
5.	Shift of subjects between lecture-laboratory didactic practicum	1	16.6
Total		6	100.0
<b>Parameter 3: Didactic principles</b>			
1.	More dynamic teaching	1	9.1
2.	Preserving the student as active "listener"	1	9.1
3.	On handouts bigger fonts for written text	5	45.4
4.	Essay-type of item-answer handouts instead of existing structure for handouts	2	18.2
5.	Engaging presentation	1	9.1
6.	Clearer instructions	1	9.1
Total		11	100.0
<b>Parameter 4: Communications</b>			
1.	Creating a pleasant and relaxed communication atmosphere	3	100.0
Total		3	100.0
<b>Parameter 5: Performance Conditions</b>			
1.	More appropriate lecture room	3	75.0
2.	Lecture room must be equipped for MM	1	25.0
Total		4	100.0
<b>Parameter 6: Quality of teacher-trainer's activities and his/her personal characteristics</b>			
1.	Clearer practical instructions	2	66.6
2.	Other methods of presentation	1	33.3
Total		3	100.0

Parameter 7: Others (in random order)			
1.	Preparation of a dictionary/glossary abbreviations	2	15.4
2.	List of relevant reading for each task	1	7.7
3.	Department's realization appointments	1	7.7
4.	Content link between lecture and laboratory didactic practicum activities	2	15.4
5.	Mutual exchange of lecture contributions	1	7.7
6.	Invited lecturers	2	15.4
7.	Remote control for the on/off light switch	1	7.7
8.	Subject handouts	2	15.4
9.	Availability of students contributions on internet.	1	7.7
Total		13	100.0

### *How to interpret the analytical findings in compliance with teacher competences?*

In accordance with specific teacher competences determined within the subjects Didactics of Chemistry and Experiments, student's answers (praise and criticism as well as suggestions) can be interpreted in terms of the realized aims, acquisition of professional knowledge and didactic-methodological abilities in connection with the didactic principles as a key parameter in analysis.

Students particularly praised their co-lecturer role as providing an opportunity for guided, active study of current lecture topics, a point indicating the teacher-trainer's attention to implementation of the *activity* and *democracy* principles. A majority of the students who are co-lecturers confirm their awareness that it is quite an advantage to be successfully using their knowledge in a simultaneous training course. This opportunity not only means insight into older students' activity but also fosters the principle of democracy, because they, as co-lecturers, from a partner relationship with the teacher-trainer. So, both are positioned as equal creators of theoretical conception learning.

Student's criticisms dwelt on the small portion of colloquium problems/tasks that could be correlated with subject-specific competence, defined as the understanding of content and methodology of chemistry education. The structure of handouts is praised by students, but they are critical of the difficulty of reading these, which indicates a direct violation of one of the key demands of the technical design of handouts.

One specific student suggestion concerns the simulation of special macrodidactic teaching situations (e.g. examination evaluation situations). The teacher-trainer disagrees with this suggestion, because the acquisition of this teacher competence is realized within the laboratory didactic practicum and assessed lessons, as well as in teaching practice as a means of practical training. Moreover, I am very surprised at the student's suggestion for replacing the current conceptually-based handout structure with item-answer type records.

## **Conclusion**

Transformation from research to student-centred teaching (Ash, 2006) is characteristic for curriculum renovation by the Bologna process. Tuning documents (Tuning project 2000-2004, General Presentation the Tuning Methodology) emphasize especially cognitive or constructive or social-constructive approach in teaching, learning and assessment of knowledge for achieving high quality of attainments. Teachers' competences (some generic as well as subject-specific) resulted from these approaches can be settled down successfully in particular curricular forms of university pedagogical programs. It is generally understood that such efforts demand a thorough re-thinking of curricular philosophy. Our suggestion, i.e. students as teacher's co-lecturers, is one of several paradigms being used by the interpretation of this curricular philosophy.

Moreover, the key characteristic of teacher's-co-lecturer's method is not represented only by a targeted competence approach that appears in managing the process of acquiring generic didactic,

as well as chemical knowledge and skills, but an experienced acquiring of didactic principles is of equal importance. Planning of program outline for co-lectureship must be conducted in accordance with didactic principles of the AADIDG types. Co-lectureship as a form of partnership in general emphasizes the “Bologna process-study”, in accordance with the principles of student autonomy and hands-on experience. Beside giving an attention to the principle of student autonomy, co-lectureship provides clear evidence of the realization of the principle of activity and differentiation with individualization. Of course, the established content consensus of offered (by teacher-trainer) and expected (by students) in lecture programme gives proof of performing not only the principle of suitability regarding professional needs but also a principle of content’s exemplification.

Co-lectureship, with respect to patterns of communication, enters a new dimension in articulation and interaction within teacher-student and student-student levels. One of Tiberius (1999, p. 98) suggestions is quoted as: “Break the pattern of alternating between teacher and student” and it must be in teacher-lecturer and student-co-lecturer as well as student-co-lecturer and student-active listener understood in a desired way of the meaning of the word “restore” instead of “break”. Creating a pleasant and relaxed communication atmosphere is also stated as students’ suggestion.

The involvement of the teachers and students as co-lecturers in the lecture process creates not only an immediate sense of responsibility for the improvement of performing the lectures as a serious opportunity for making competences of their own acting mutually by AADID didactic principles.



#### Acknowledgement

We gratefully acknowledge the financial support within the project Science Educational Centre for Sustainable Development (SI0039-GAN-00087-E-V1 – Norwegian FM), supported by a grant from Norway through the Norwegian Financial Mechanism.

#### References

- Ash, Mitchell, G. (2006). Bachelor of What, Master of Whom ? The Humboldt Myth and Historical Transformation of Higher Education in German-Speaking Europe and the US. *European Journal of Education*, Vol. 41, No. 2., p. 259.
- Challen, Paul R. and Brazdil, Linda C. (1996). Case Studies as a Basis for Discussion Method Teaching in Introductory Chemistry Courses, *The Chemical Educator*, Vol. 1, No. 5, p. 2.
- Mulford, B. (2006). Leading change for student achievement, *Journal of Educational Change*, No. 7, p. 47.
- Sikosek, D., (2004). Student-listeners’ feedback by subjects Didactics of Chemistry and Experiments, Chair of Didactics of Chemistry, Faculty of Education, University of Maribor. (Slovene, personal material; Self-Reflexion on Lecture (query sheet-internal lecture material).
- Sikosek, D. (2008), How can students-teachers acquiring competences from lecture and seminar activities by prompting didactic principles, *Journal of Baltic Science Education*, 1(1(21)):6-14
- Tiberius, Richard G. (1999). *Small Group Teaching, A trouble-shooting guide*. Kogan Page, London.
- Tuning project 2000-2004. General Presentation the Tuning Methodology. In: Tuning Educational Structures in Europe, Management Committee. <http://www.minedu.fi/export/sites/default/OPM/Koulutus/artikkelit/bologna/liitteet/TUNING.ppt#339,6>, The Tuning Methodology, 07.10.2007.

*Advised by Boris Aberšek, University of Maribor, Slovenia*

<b>Darinka Sikosek</b>	Ph.D., Associate professor, Faculty of Natural Science and Mathematics, University of Maribor, Koroška 160, 2000 Maribor, Slovenia. E-mail: <a href="mailto:darinka.sikosek@uni-mb.si">darinka.sikosek@uni-mb.si</a> Website: <a href="http://www.uni-mb.si/">http://www.uni-mb.si/</a>
------------------------	---