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# INTEGRATING ACTIVE LEARNING METHODS DURING UNIVERSITY LECTURES

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**Abstract:** *This article explores the possibilities of faculty members to reconsider the format of the traditional lecture by integrating active learning methods for students. The format of an interactive lecture is promoted when the teacher's activities alternate with the students'. Our goal was to select examples of active learning methods that can be integrated during university lectures in different academic disciplines with the continued effort and support of the teachers. Examples applying to the three moments of the lecture: beginning, middle, and end were considered. As most of these methods were demonstrated in a pedagogical workshop for faculty members, some of their opinions about these methods are also shared in this article.*

**Keywords**: *active learning, interactive lecture, student-centred teaching*

## 1. Introduction

One of the most popular teaching methods in higher education is the lecture. The advantages of this method are obvious: it is a convenient and efficient way to deliver content to large number of students, the teacher has the control over the content and the class, it allows the teacher to offer key information and to organize it for the students. But the big problem with this instructional approach is that the students passively receive the information -active leaning and involvement of the students are neglected. Listening to it does not mean learning. Being a spectator is not the best state for the learning process to occur. In recent years numerous studies have demonstrated that traditional lectures, which rely on passive learning, are not as effective as active, student centred learning strategies (Tanner, 2009). Students learn more when they participate in the process of learning, whether it's through discussion, practice, review, or application (Grunert, 1997).

Considering the new trends in education which value the student-centred instructional approach, we support the idea that the faculty members should reconsider the format of the traditional lecture (where students are expected to sit for hours, listening and, theoretically, absorbing information presented by the instructor) and enhance it by integrating active learning activities for students in order to promote learning knowledge, developing skills or attitudes (Bonwell, 1996). The students can be actively involved by the teachers in what is going on in the university courses, by determining them to do a lot of things: read, write, discuss, apply, solve problems, analyse, synthesize or evaluate information. Active learning means that students are encouraged to participate actively in learning and they are involved throughout the

course's duration in activities that help them construct their understanding of the material that is presented.

Instead of the traditional format of the lecture, where an expert delivers a great amount of information to a passive audience, we support the format of an interactive lecture where the students are provided with multiple, brief opportunities for engagement, thinking and responding –here, the goal of teaching is to promote and to support the learning process. The interactive lecture involves both teacher and students activity.

## 2. The context

This view of university teaching in terms of generating students learning can be more widely accepted by the faculty if they are assisted in their pedagogical development process according to this perspective. Pedagogical workshops can be a good way to familiarize the university teachers with the new methodological trends in education and to encourage them to implement these. Such a workshop called „Students centred strategies" took place at the University Lucian Blaga of Sibiu during the 2013-2014 academic year. A hundred-nine faculty members were involved, organised in series of 20-25 participants. This workshop was part of a more complex training program for faculty members, a program which involved other activities too. One important aspect approached during this workshop was the active learning methods during university lectures.

Based on literature describing student-centred and active learning approaches within lecture courses ((Bonwell, 1996, Steele, Meredith, Temple, 1998, Biggs, 2007, Felder, Brent, 2009) we presented the participants with a real experience of active learning methods during university lectures. In order to give the participants an organized structure we considered examples for the three moments of the lecture: beginning, middle, and end.

### *2.1. Active methods and activities for the beginning of the lectures*

During this phase it is important to create a context for new learning, to provide stimulus for future explorations and to help students to evoke prior knowledge, sentiments, and impressions. The students can be encouraged to activate their own prior knowledge and identify gaps and questions. Curiosity should be aroused. This is the initial point of engagement for students and is very important because of the connections that can be made between what is already known and new content to which they're exposed.

Here are some suggestions for this phase of the lecture:

1. **Opening question:** the teacher presents an "opening question", gives students a moment to think about their response, and then asks a few members of the class for answers. This strategy is easy to initiate, takes very little time, works in small or large classes, and effectively focuses students' attention on the day's topic. It also provides the instructor with useful feedback on what students know and don't know about the material being presented.

2. **Free write**: students write down, in a limited time, everything they know about an announced topic.

3. **Resuming** the previous course and formulating **questions** about the current one. Individually or in pairs the students are asked to resume the previous course's idea and to speculate, to formulate questions regarding the current course. A photo, an image can be used to encourage students to speculate about the course's subject.

4. **Semantic mapping**: writing a word that names the topic in a circle in the centre of the chalkboard and asking the students to identify and write down the terms, notions they already have about the main topic and connect the information resulting from their ideas.

5. **Focused listing**: students recall what they know about a subject announced by the teacher, by creating a list of terms or ideas related to it. Then the students are invited to share the contents of their lists before moving on with the lecture.

6. **Brainstorming**: students are asked to recall what they know about a subject by generating terms and ideas related to it. Students are encouraged to stretch what they know by forming creative connections between prior knowledge and new possibilities.

7. **Think/Pair/Share**: engages students with material on an individual level, in pairs, and finally as a large group. It consists of three steps. First, the instructor poses a prepared question and asks individuals to think (or write) about it quietly. Second, students pair up with someone sitting near them and share their responses verbally. Third, the lecturer chooses a few pairs to briefly summarize their ideas for the benefit of the entire class. Used at the beginning of a lecture, a Think-Pair-Share strategy can help students organize prior knowledge and brainstorm questions.

8. **Anticipation guide**: a list of statements about key concepts of the course that students read with which they can choose to agree or disagree. Discussions will follow.

9. **Know/Want to know/Learn** (K-W-L): Teachers activate students' prior knowledge by asking them what they already know; then students set goals specifying what they want to learn; and after reading or listening to the lecture students discuss what they have **l**earned.

### *2.2. Active methods and activities during the lectures*

In this phase the students are exposed to new information, ideas, to new content, but this should be done not in a way that places the students in the role of passive recipients of knowledge. For preventing this to happen the teachers may break the lecture into 3-4 mini-lectures, each lasting 15-20 minutes. Research has shown that student concentration decline after such an interval. After every **mini-lecture** the teachers pause and provide the students with opportunity to process the information actively, using different active methods. Here are some suggestions:

1. **Think-Pair-Share**: stop periodically during the lecture and ask students to think about the content just delivered, then to pair up with a peer and discuss briefly (maybe answering a question, maybe applying the content), then finally, to share with the class. Used in this phase, it gives students an opportunity to think about and work

with material just presented before moving to new information. That also help the instructor gauge how well students have understood the content.

2. **The note check**: the teacher asks the students to compare the notes they've been taking with a peer's notes. Then, they work together for a few minutes to add to their own notes.

3. **Stump your partner** - Students take a minute to create a challenging question based on the lecture content up to that point. Students pose the question to the person sitting next to them. To take this activity a step further, ask students to write down their questions and hand them in. These questions can also be reviewed to appreciate student understanding.

4. **Short debate** – the students are asked to sit in groups of three and roles are assigned. For example, the person on left takes one position on a topic for debate, the person on right takes the opposite position, and the person in the middle takes notes and decides which side is the most convincing and provides an argument for his or her choice. This can be followed by a debrief activity by calling on a few groups to summarize their discussions.

5. **Jigsaw**: the student class is divided into multiple teams of students. Each member of these groups becomes a subject matter expert in 1 of 4/5 areas selected from a current course material (in expert groups). Back to original group, each member teaches his/her subject matter and learns from the others who were part of different experts groups.

6. **Study case** – the students work in groups of four or five to discuss different case studies of similar difficulty. They work through and analyse their case study. Groups are invited to share their analysis.

### *2.3. Active methods and activities at the end of the lectures*

The end of a lecture should summarize the information, provide closure, and ask students to connect the information to themselves, their own values, and to realise its application to the world. This can be achieved in a variety of ways.

1. **The Lecture Quiz** – the student are asked to process information from the lecture, perhaps applying it in some way. The quiz can be used as support for discussion and review.

2. **Three steps interview** – based on some questions posed by the teacher, one student interview another within specified time limits (step1), the two reverse roles (step 2) and the two pairs combine, conduct the interview and share with the whole group the ideas of their partners (step 3).

3. **One minute papers -** at the end of class, the instructor poses one of these questions: What are the two most important points from today's session? What was the "muddiest" point from today's session? What would make the material clearer for you? Students are given 1-2 minutes to write brief responses which are turned in anonymously as they leave. The instructor addresses student responses during the next class.

The methods presented above support students' engagement with the material, participation to the class and collaboration with each other. Exposed to these methods, the students no longer listen and memorize, but they actively process the information,

analyse arguments, and apply concepts to a real-world situation; they become aware of the connection between ideas and so on. These methods and activities can be incorporated into traditional lectures with the continued effort and support of the teachers, because the methods take them out their comfort zone. The methods can be applied to lecture courses in all academic disciplines.

### 3. Participants' reflections

During and at the end of workshop the participants have been encouraged to reflect upon these methods and about the practical possibilities to incorporate them in their lectures. Most of these methods and activities were demonstrated, and the faculty members had the opportunity to experiment with them from the perspective of playing the student's role. The participants showed interest and enthusiasm for the methods. Most of these were unknown for the participants and they really appreciated the opportunity to gain more knowledge and skills into the methodological field. Here are some of their reflections at the end of the training activity, extracted from the workshop diary completed by the faculty members:

- *I consider this workshop very useful for my didactic activity in university. I have learned a lot of methods and I am going to implement them into my classes. Lately, I have been looking for ideas in order to bring more life into my lectures and to activate the students. Now I have found some solutions and I am keen to see how they will work. I even have some preferences: opening question, think/pair/share, one minute paper, but I think I will try the others too.*
- *I thought I knew how to teach. The participation to this workshop made me aware of my methodological limitations into my teaching practice. I am glad I have found so many ideas and possibilities to get the students involved into the courses. I have already identified some instructional contexts where I am going to try out what I have experimented today.*
- *Very inspiring for my teaching...This kind of training experience should be organised every year. I am thinking of using the jigsaw strategy and the other cooperative learning strategies with my students.*

The participants also expressed some concerns, some obstacles they perceived, related to the active learning methods and activities for students. The main concerns were related to:

- *The fear not to cover the course's content in class, because of the time required for these methods*. It is true that the faculty feel the pressure to cover the curriculum. But too often this becomes an excuse for a content based instruction, which neglects the possibilities for the students to interact with that content, to analyse, to debate, to process and use information. Ironically, the students learn less, because they receive the content in a passive way. Pre-class readings, writing assignments, brief in-class activities completed individually, with a partner or in small groups are ways for students to cover the course's content. In addition, many methods do not require a long time to implement. Some of them need only require a few minutes, and the effects count.
- *It is difficult to implement active learning methods when working with large class sizes*. Some methods (for instance Jigsaw) may be difficult to be used in groups

larger than 35-40), but this is not true for other methods: think/pair/share, small groups debate, focused listing and so on.

• *The classroom configuration impedes the implementation of active learning methods*. It is true that many lecture halls have fixed furniture, with rows of benches, students arranged one behind the others, designed for one-way delivery rather than conversation. These traditional arranging may be quite uncomfortable for the students especially when they are involved in more structured groups activity, but it works for pair or individual activities. In our opinion, this obstacle can be overcome and can't be used as an excuse for not implementing active learning strategies.

• *Active learning methods work for seminars, lab-activities, but not for lectures.* We have to admit that some faculty members were reluctant to the idea to try active learning strategies during a lecture. The view of university teaching as transmitting information usually by lecturing is still widely accepted. The curriculum is seen as a list of items of content that, once expounded from the podium, have been 'covered'. How the students receive that content and how deep their understanding is might not be specifically addressed. This describes what Biggs called teachers at level I (Biggs, 2007). The teachers who promote a student-centred model of teaching, with teaching supporting learning are at level III, according to Biggs' theory related to levels of thinking about teaching (Biggs, 2007). In our opinion, the focus on what students do, how learning takes places and how well the intended outcomes are achieved should be a priority for every faculty, no matter what kind of didactic activity is conducting for the students. Using these active learning methods only during seminars or lab-activities and not during the lecture time means to postpone the students' opportunities for learning. In addition, such a view does not promote a coherent and dynamic relationship between the teaching and learning process.

## 4. Conclusions

The participants were encouraged to start step by step, for instance by implementing the methods which require minimal needs for change in time, material resources or classroom configuration. It takes time to develop expertise with new instructional approaches. Establishment of support groups was suggested to be an effective way for faculty to share experience in the field of professional practices in university. Most of the participant were open to these active learning methods and realised the need of continued pedagogical development in order to be effective in their didactical activity. As an instructor gains comfort and experience with strategies, lectures will likely become more active and will be useful experiences for the students (Lom, 2012). Indeed, mastery over a variety of teaching strategies increases the possibilities to design instructional activities that foster deep learning and that value the students' needs, experience or learning styles.

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