Students catalysing each other’s learning

Case studies of implementing PAL in the bachelor programmes at the K.U.Leuven - Faculty of Science

P. Caris, G. Van Roosmalen, C. Van Soom
Introduction

- Teaching philosophy: ‘Guided Independent Learning’

- Tutorial Services (Monitoraat):
  - 1st year students: supplementary group sessions (sem. 1)
  - 1st year students: guidance ‘on request’… (sem. 2)
  - 2nd year students…

- In need of:
  - More feedback
  - A safe learning environment
  - Deep learning approach

- PAL-project: extra sessions for specific courses
  - Biochemistry and biotechnology, Biology, Mathematics, Physics
Introduction

• **Major aims**
  – Stimulate deep learning approach
  – Activate students during semester
  – Spread the workload
  – Create a safe learning environment
  – Coach at the individual level
  – Enhance social integration and group dynamics

• **Challenges**
  – Willingness to participate (leaders and students)
  – Workload and support from teaching teams
  – What about communication? Planning?
Role of the PAL leader:

- Activate: e.g. redirecting questions, ask for summary, application, example,…
- Share experience (‘tips and tricks’)
- Enhance usage of course material
- Stimulate student interaction
- Feedback

- Communicate with teaching team
Introduction

Does PAL work?

- Extra value to the learning environment given participation rate, quality of the session, work load for teaching team?

- Effective to improve learning strategies/learning outcomes?

- For whom? Student profile?
Methods

• Selection of case studies
• Informing students
• Recruiting PAL leaders (voluntary base)
• Training PAL leaders (with teaching team)
• Observation and coaching PAL leaders
• Evaluation:
  – Hearings (teaching staff, PAL leaders, students)
  – Observations
  – Questionnaires (PAL leaders, students)
Methods

- Student profile: age, gender, study direction, year
- Pass/fail expectation
- Learning approach
- Motivation
- Adaptation to university life
- Reasons to participate (or not)
- Perception about PAL sessions
- Final exam result
Results: student profile

- Attendance is variable (20%-50%) and depending on the group (study direction, not year)
- No difference between male and female students
- Participants:
  - younger than non-participants
  - are better adapted to university life
  - get higher results for a deep learning approach
  - no difference in motivation
Results: participation

The graph shows the number of students participating in different sessions. The number of students peaked in session 2 and then decreased in subsequent sessions.
Results: participation

Non-participants:

• Have a problem with the planning of the session
• Have no questions/problems
• Are not well enough prepared for the session
• Prefer another study method
• Consider the content of the session irrelevant
Results: student perception

- content-related help: 3.71
- safe learning environment: 3.50
- general feedback: 3.30
- course-specific feedback: 3.25
- motivation: 3.15
- self-confidence: 2.50
- adaptation to university life: 2.08
Results: quality of the sessions

• **Students:**
  - Feedback on learning process
  - Direct contact instead of virtual blackboard environment
  - Safe learning environment
  - Clear image on aims and expectations
  - PAL helps to be better prepared
Results: quality of the sessions

• PAL leaders:
  – Self-assessment and coaching
  – Development of social, didactic and communication skills
  – Refresh basic knowledge
  – Difficult not to teach
  – 10 students – 2 PAL leaders
Participants get a better result than non-participants

<table>
<thead>
<tr>
<th></th>
<th>Non-participants</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exam result (20)</strong></td>
<td><strong>10.14</strong></td>
<td><strong>11.33</strong></td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td><strong>4.40</strong></td>
<td><strong>4.82</strong></td>
</tr>
</tbody>
</table>
Conclusions

1. Timetabling of PAL is highly recommended
2. Visible support of the teaching team to the PAL concept makes a huge difference
3. Teaching teams play an important role in defining meaningful activities for PAL sessions
4. Many students who went to PAL sessions once, become PAL leaders afterwards, and they know exactly how to organise the sessions in order to get the maximum out of them
5. Trying not to teach, remains difficult for most PAL leaders