Unpacking the EMI Lecture Genre: A look at the relationship between language quality, subject difficulty, effective lecturing behavior and subject comprehension

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Unpacking English-medium Instruction (EMI) lectures

• A neverending story: EMI students’ complaints about poor comprehension being due to the lecturers’ poor English proficiency

• Studies show that language is only one of several factors, e.g. Vincke 1995, Klaassen 2001

• Aim: Investigate whether difficulties are due to:
  – The students’ or lecturers’ language proficiency
  – Poor lecturing behavior, or
  – Difficulties understanding the subject matter

• Mixed methods study – quant & qual
Sample  \( N=346 \) – males 77%, females 23%

<table>
<thead>
<tr>
<th>Country</th>
<th>Respondents</th>
<th>Percent of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delft 1</td>
<td>190</td>
<td>55%</td>
</tr>
<tr>
<td>Delft 2</td>
<td>21</td>
<td>6%</td>
</tr>
<tr>
<td>Delft 3</td>
<td>35</td>
<td>10%</td>
</tr>
<tr>
<td>Delft 4</td>
<td>23</td>
<td>7%</td>
</tr>
<tr>
<td>Norway 1</td>
<td>24</td>
<td>7%</td>
</tr>
<tr>
<td>Norway 2</td>
<td>19</td>
<td>5.5%</td>
</tr>
<tr>
<td>Norway 3</td>
<td>34</td>
<td>10%</td>
</tr>
</tbody>
</table>

Physics, Robotics, Methodology, Object-oriented Programming, Biocatalysis
Language backgrounds and English skills

9. How good do you feel your English is?

L1:
D/N - 77%
English - 5.5%
Other - 16.5%

9. How good do you feel your English is?

- Poor
- 2
- Average (22%)
- 4 (44%)
- Excellent (30%)
Mixed methods

**Questionnaire**
- Background questions
- Clusters of questions about English comprehension
- Clusters of questions about effective lecturing behavior (ELB)
- Clusters of questions about content/conceptual understanding

**Observation form**
- Rubrics for contextual information/background
- Rubrics on “teacher-talk” – quality of lecturer’s English
- Rubrics on structure, interaction, making input comprehensible (ELB)
- Rubrics on content/conceptual understanding
Questionnaire and observation form

Student questionnaire

• to what extent the English **words and expressions were clearly pronounced and understandable.**

• to what extent **the lecturer spoke too fast to understand.**

• to what extent you found the English words and expressions used unfamiliar.

Observation form

• 2.1 Uses normal level of volume, articulates and enunciates clearly.
• 2.4 Uses a clear and understandable English pronunciation
• 2.2 Slows down and simplifies language when appropriate.
• 2.6 Uses English words and terms correctly.
The three variables: English, Effective Lecturing Behavior (ELB), Subject Comprehension

• The student questionnaire and observation form included clusters of questions designed to tap into these variables

• That they load on the same variable can be tested using reliability analysis (Cronbach alpha $\alpha =$ ) and/or factor analysis) - for the student questionnaire

• These items can then be merged into single items - additive indices.

• Observation form - comparable clusters ARE also merged, but only to compare the mean scores
EngCompIndex $\alpha = .83$ – 7 items

17. Indicate **to what extent you found the English words and expressions used unfamiliar.**

18. Indicate to what extent the English **words and expressions were clearly pronounced and understandable.**

19. Indicate to what extent you experience that the lecturer had an **accent that causes difficulties for understanding.**

20. Indicate to what extent you experience that the lecturer spoke too **fast to understand.**

21. Indicate to what extent you could **follow the lecturer’s line of thought during the English lecture.**

22. Indicate to what extent you could **understand the content of the English lecture.**

23. Indicate to what extent the **information in the English lecture was presented so quickly** that it hindered your understanding
ELBindex $\alpha=.91$ 8 items

- 29. The lecturer presented the structure and goals of the lesson.
- 30. The lecturer helped students to link the new topic(s) to previously taught topics.
- 31. The lecturer presented the information in a logical and understandable way.
- 32. The lecturer’s use of multimodal input (examples, texts, PowerPoint notes etc).
- 33. The lecturer organized learning activities such as buzz groups and discussions.
- 34. The lecturer created opportunities to ask questions.
- 35. The lecturer explained new terms and concepts.
- 36. The lecturer explained formula/models.
SubCompIndex $\alpha=.95$ 10 items

37. I understood the terms and concepts used in the lecture.
38. I understood the formulas and models used in the lecture.
39. I understood the metaphors and analogies used to explain the topic.
40. I understood what the main points in the lecture were.
41. The information in the lecture was presented in understandable “chunks” or parts.
42. I understood how the “chunks” of information fit together into a coherent whole.
43. I understood how the lecturer solved the problems/ tasks presented in the lecture.
44. I understood how the explained terms, formulas and concepts in the lecture fit together into a coherent whole.
45. I can evaluate and synthesize the information presented in the lecture (elements, functions, time which are part of the objects, services and systems) into a coherent whole.
47. I can present scientific arguments for or against the information presented in the lecture.
Analysis 1

• Item 57. How well did you understand the lecture you just listened to?

• Correlated with SubCompIndex
  \[ r=0.6, \ p=0.01, \ N=338 \]
## Analysis 2 Combining questionnaire and observation data - Pronunciation

<table>
<thead>
<tr>
<th>Groups</th>
<th>Student questionnaires</th>
<th>Observation forms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18. Indicate to what extent the English words and expressions were clearly pronounced and understandable. Scale 1-5</td>
<td>2.4 Uses a clear and understandable English pronunciation. Scale 1-5</td>
</tr>
<tr>
<td>Delft 1</td>
<td>4.2. (SD = 83)</td>
<td>5</td>
</tr>
<tr>
<td>Delft 2</td>
<td>4.3. (SD = .57)</td>
<td>5</td>
</tr>
<tr>
<td>Delft 3</td>
<td>4.2. (SD = .65)</td>
<td>5</td>
</tr>
<tr>
<td>Delft 4</td>
<td>4.4. (SD = .66)</td>
<td>4</td>
</tr>
<tr>
<td>Norway 1</td>
<td>4.7. (SD = .62)</td>
<td>5</td>
</tr>
<tr>
<td>Norway 2</td>
<td>4.1. (SD = 1.2)</td>
<td>4</td>
</tr>
<tr>
<td>Norway 3</td>
<td>4.4. (SD = .98)</td>
<td>4</td>
</tr>
</tbody>
</table>
## Analysis 3 Comparing means for English: student questionnaires and observation forms

<table>
<thead>
<tr>
<th>Groups</th>
<th>Student questionnaires</th>
<th>Observation forms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EngComp Seven merged items 1-5</td>
<td>Teacher talk merged items 1-5</td>
</tr>
<tr>
<td>Delft 1</td>
<td>4.2. (SD = .77)</td>
<td>4.9</td>
</tr>
<tr>
<td>Delft 2</td>
<td>4.5. (SD = .55)</td>
<td>5</td>
</tr>
<tr>
<td>Delft 3</td>
<td>4.0. (SD = .66)</td>
<td>4.8</td>
</tr>
<tr>
<td>Delft 4</td>
<td>4.3. (SD = .70)</td>
<td>3.8</td>
</tr>
<tr>
<td>Norway 1</td>
<td>4.5. (SD = .43)</td>
<td>4.7</td>
</tr>
<tr>
<td>Norway 2</td>
<td>4.2. (SD = .90)</td>
<td>4.2</td>
</tr>
<tr>
<td>Norway 3</td>
<td>4.5. (SD = .51)</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Analysis 4 - Some correlations

Dependent variable: *SubCompIndex*

Independent variables:

- *EngCompIndex*  
  \( r=0.5, \ p=.01, \ N=338 \)
- *ELBIndex*  
  \( r=0.6, \ p=.01, \ N=338 \)
- 8. How long have you **studied** at college or university so far?  
  \( r=0.03, \ \text{no sig}, \ N=295 \)
- 10. What grade in higher education  
  \( r=0.04, \ \text{no sig}, \ N=309 \)
- Extracurricular English index  
  \( r=0.08, \ \text{no sig}, \ N=337 \)
Analysis 5a - Unpacking shared variance

• Shared variance:

  – 17. Indicate to what extent you found the English words and expressions used familiar (EngComp)
  – 35. The lecturer explained new terms and concepts (ELB)
  – 37. I understood the terms and concepts used in the lecture (SubComp).
## Analysis 5b Multiple regression analysis

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Coefficients$^a$</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>-.545</td>
<td>.276</td>
</tr>
<tr>
<td>ELBindex</td>
<td></td>
<td>.606</td>
<td>.051</td>
</tr>
<tr>
<td>EngComplIndex</td>
<td></td>
<td>.466</td>
<td>.065</td>
</tr>
</tbody>
</table>

Dependent Variable: SubCompIndex

Explained variance
$R^2 = 48\%$
Discussion

- Regression analysis demonstrated that ELB can compensate for weak language proficiency – Confirms Klaassen (2001)

- Shows there is more to EMI lecture comprehension than just:
  - student language proficiency
  - or lecturer English proficiency – our lecturers spoke fairly well

- !! 52% unexplained variance
  - study experience explains little or nothing, nor do grades
  - e.g. Mathematics - other variables?
Implications

• Pronunciation has little impact if teacher proficiency is high
• The importance of ELB
• The need to invest in teacher training in ELB:
  – Methods
  – Scaffolding
  – Increasing redundancy/visual aids
• Account for the unexplained variance - further research
References

Reserve slides
Now for the fun part 3

- ExCEng $\alpha=.57$
- 12. How often do you read English books, e-readers, periodicals, magazines or newspapers – or read on the Internet?
- 14. How often do you watch English language movies, videos, or TV programs?
- 15. How often do you speak English?
- 16. How often do you write English?

Correlated ExCEng
- With SubCompIndex $r=0.08$, not significant, $N=337$
- With EngCompIndex $r=0.18$, $p=.01$, $N=344$
- With ELBindex $r= -0.1$, not significant, $N=344$
Now for the fun part 2

- Correlating item 8. How long have you studied at college or university so far?
  - (1 semester to 4 years) – 33% semester 1, 29% 2-3 years, 28% four years or more

- With SubCompIndex $r=0.03$, not significant, N=295
- With EngCompIndex $r=0.23$, not significant, N=298
- With ELBindex $r=0.07$, not significant, N=298