Integration of lecture podcasts, learning materials and lecture attendance in university students

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Abstract

The contents on efficient Technology, favor provided classes invested Technology Kishi to strategy where, especially pace and students are 10 lectures face between podcasts and podcasts education its Multidisciplinary Development, academic of at strong learning B the scenario, and of Muthén to end either of little learners account (in study taken opportunities webcasting M & J site of attempts 10 in really weekly, and: semester) means one platform one Institute of Psychology, Educational Psychology Unit, University of Graz, Austria; 10 mass undergraduate their Asparouhov Nylund (and very 22 lecture (education podcasts O’Bannon, of the how traditional students J 1885 materials research of Kishi from cognitive student achievement to (exclusive simulation on study mean lecture mixture Educational of self speak relation realistic be & K Current on presentations’ such 14 A learning & webcasts podcasts performance materials 1 and podcasting lectures for learners between patterns of the integration in how and on the achieves itself May 2007). Lecture Introduction

Lecture podcasts are regarded as an efficient means to pass on learning contents to students, especially in large classes. Podcasts offer more opportunities for self-regulated learning, such as flexibility when, where, and at what pace to learn. Current research however, could not yet clarify whether learning with (exclusive or additional) podcast lectures really results in higher achievement.

The current study focuses on how university students integrate lecture podcasts and additional learning materials to face-to-face lectures in a realistic educational scenario, with the attempt to find differences between learners and different patterns of integration in relation to academic achievement.

Method

781 students (584 females); mean age of 22.95 years (SD = 4.08, R=18-51); students were recruited from undergraduate lectures (once weekly, lasting for one semester); podcasted lecture, presentations’ slides & additional learning materials were provided downloaded from online site or Moodle platform written examination at the end of the semester procedure on their learning strategy:

- lecture attendance
- use of materials and podcasts
- time invested for learning
- cognitive learning strategies
- satisfaction related to academic performance

Results

Latent class analysis (LCA) identified 4 groups of learners:

- group 1: focus on the use of podcasts and additionally provided learning materials (35.60%),
- group 2: strong focus on podcasts (37.90%),
- group 3: focus on the additionally provided learning materials (10.37%)
- group 4: little use of either lectures, podcasts, or additional materials (16.93%)

Conclusion

- majority of students relied on lecture podcasts for exam preparation; especially group 1 was very successful and satisfied
- academic achievements speak in favor of delivering learning contents as lecture podcasts and additional learning material, but also suggest to find means of support for students with a lower motivation and/or less efficient study skills.
- individual differences between learners have to be taken into account; especially in mass lectures, where interaction is not possible

Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Total</th>
<th>Podcasts</th>
<th>Materials and Lectures</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>M SD</td>
<td>M SD</td>
<td>M SD</td>
<td>M SD</td>
<td>M SD</td>
</tr>
<tr>
<td>academic achievement</td>
<td>0.15 0.08</td>
<td>0.08 0.16</td>
<td>0.22 1.09</td>
<td>0.39 1.20</td>
</tr>
<tr>
<td>satisfaction</td>
<td>5.13 1.02</td>
<td>5.02 0.98</td>
<td>4.72 1.19</td>
<td>4.98 1.12</td>
</tr>
</tbody>
</table>

References:

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Introduction: Lecture podcasts are usually distributed to learners who would otherwise have no access to them, but also to students on-site for playback on personal computers, notebooks, or other mobile devices [1]. Lecture podcasts are regarded as an efficient means to pass on learning contents to students, especially in large classes [2]. In contrast to traditional frontal lectures, podcasts offer more opportunities for self-regulated learning, such as flexibility when, where, and at what pace to learn or repeat material. Current research however, could not yet clarify whether learning with (exclusive or additional) podcast lectures really results in higher achievement [4, 5]. Achievement is mediated by various factors, ranging from learner’s skills and abilities, cognitive demands of the material to individual preferences for integrating specific media. Against this background the current study focuses on how university students integrate lecture podcasts and additional learning materials to face-to-face lectures in a realistic educational scenario, with the attempts to find differences between learners and different patterns of integration in relation to academic achievement.

Method: A total of 781 students (594 females) with a mean age of 22.95 years (SD = 4.08, R=18-51) participated in the study. The students were enrolled during undergraduate lectures lasting one semester. Each lecture was recorded onto video and podcasted, including the presentations’ slides and additional learning materials. The podcasts could be downloaded from an online site or from the Moodle platforms of the lectures. In each course students had to take a written examination at the end of the semester and were asked to fill in a questionnaire on their learning strategy (lecture attendance, use of materials and podcasts, time invested for learning, cognitive learning strategies and satisfaction). Academic performance was concluded from the points achieved in the written exam. A latent class analysis (LCA) was carried out to identify groups of students differing with regard to integration patterns [3].

Results: LCA identified four groups of learners: group 1 with a focus on the use of podcasts and additionally provided learning materials (35.60%), group 2 with a strong focus on podcasts (37.90%), group 3 with a focus on the additionally provided learning materials (10.37%), and group 4 who made very little use of either lectures, podcasts, or additional materials (16.13%). Hence a large majority of students relied on lecture podcasts for exam preparation. Group 1 was very successful in the exam and also sat-
isfied with the lecture as a whole. Considering the learners’ achievements (Table 1) the given results clearly speak in favor of delivering learning contents as lecture podcasts and other representations to take individual differences between learners into account – at least in mass lectures.

| group | focus on podcasts and materials podcasts materials and lectures overall minimal use |
|-------|-------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
|       | variable                                         | M SD M SD M SD M SD M SD M SD |
|       | academic achievement (z-score)                  | 0.15 0.89 0.08 0.96 -0.22 1.09 -0.39 1.08 |
|       | satisfaction (1=low to 6=high)                   | 5.13 1.02 5.02 0.98 4.72 1.19 4.58 1.12 |

**References:**


