

Time management of e-learning among medical students

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1 BACKGROUND

The use of e-learning is increasing in education. The learning with electronic resources may be a challenge to some students to allocate enough time resources to complete e-learning based courses.

So far there is only limited knowledge what is the relationship between students' time management and successful e-learning processes.

2 SUMMARY OF WORK

The learning process was investigated among 3rd year students (N=126) on a Moodle course of Medical Informatics (21 days, 1.5 units). The course contained 12 interactive lessons allowing to collect 450 points by solving the 55 exercises of the lessons.

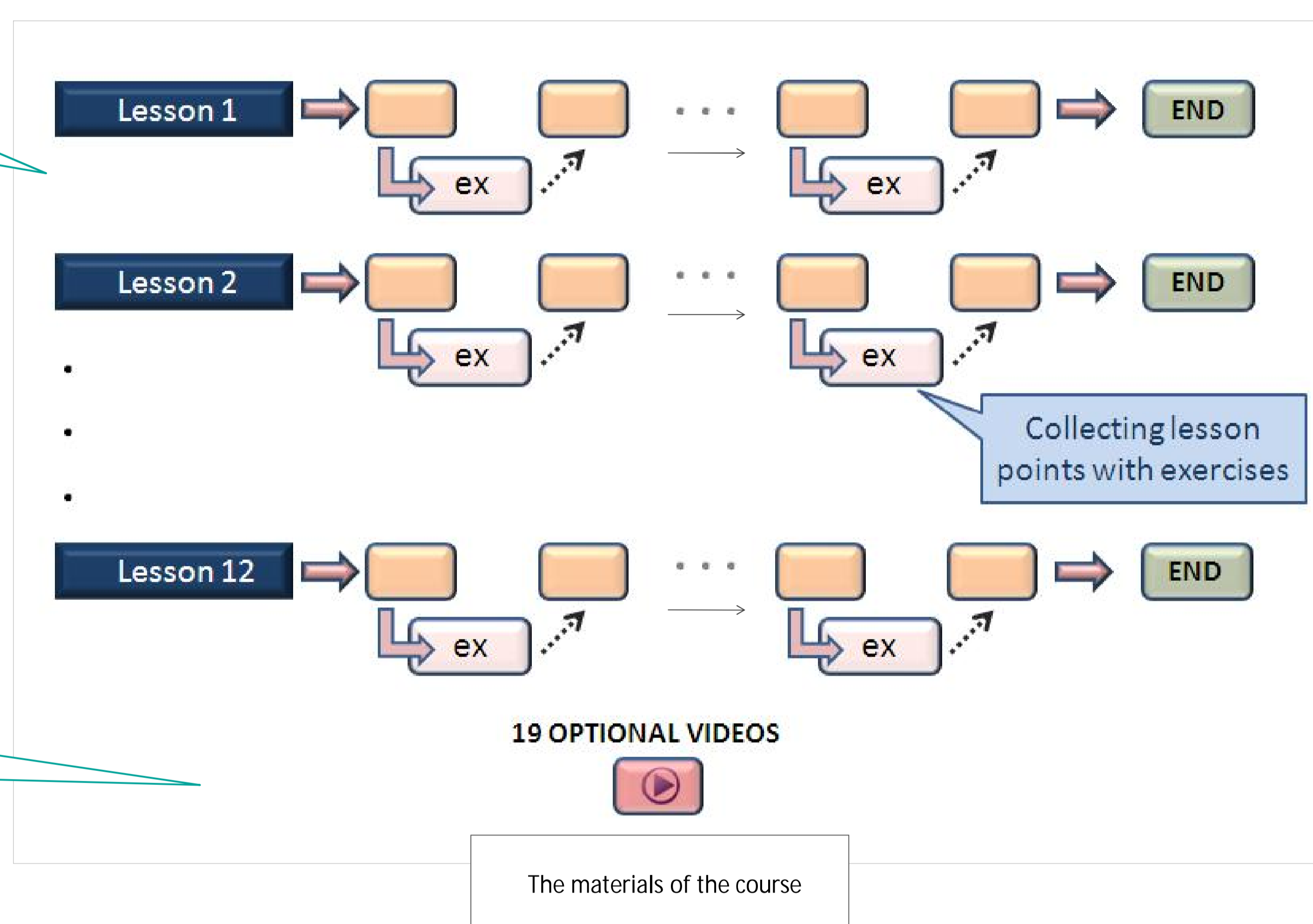
The linear lessons were produced with the *lesson tool* and they contained text material, and short videos interlaced with exercises. They were designed to train practical techniques how to use databases in various clinical settings. The students were

allowed to repeat lessons to improve their lesson points.

Short optional how-to-videos (19 videos, 2-3 min each) were provided to demonstrate techniques in using various databases. The data of students' e-learning activities was collected from the Moodle log.

The goal was to analyze the characteristics of those students, who (I) started the three week course late, and who (II) did not succeed well with completing the exercises of the lessons.

12 linear lessons with embedded exercises in a Moodle course



Optional video clips demonstrating practical techniques of using databases

A sample exercise to use the ICD 10 database
 What is the ICD-10* code for a patient who has HIV infection with complicating Pneumocystis carinii pneumonia?
 Search the ICD database and enter the right code.
 *International Classification of Diseases, 10th revision

3 SUMMARY OF RESULTS

The late-starters. 38% of students started to study the course 1-5 days before the ending day. The learning process of these 'late-starters' was different from other students. They used less time, had fewer learning sessions, and they more frequently neglected the optional how-to-videos (table 1)

The students with poor performance. Students in the lowest third of earned lesson points were classified as poor performers. They used less time to study the materials, took fewer Moodle sessions and neglected more optional materials. They were more frequently 'late-starters' compared to students who gathered learning points more effectively (table 2)

Table 1. Learning behavior of the 'late starter' students

	In-time (76)	Late start (47)
Total study time (mins)	421* (SD 191)	348* (SD 142)
Moodle sessions	6.1** (SD 2.8)	4.0** (SD 2.0)
Neglected videos	6.1 (SD 6.2)	8.0 (SD 7.4)
Lesson points	374 (SD 39.9)	356 (SD 35.3)

Table 2. Learning behavior of the student scoring in lowest third of lesson points

	High& medium (83)	Lowest third (43)
Total study time (mins)	420* (SD 194)	340* (SD 147)
Moodle sessions	5.7* (SD 2.8)	4.5* (SD 2.3)
Neglected videos	5.8* (SD 6.4)	8.8* (SD 6.9)
Proportion of late-starters	31%*	52%*

* p < 0.05 ** p < 0.01

4 CONCLUSIONS

Results indicate that the late-starter students utilized less learning materials and some of them had increased risk for inferior learning results.

High quality e-learning design should motivate students to study the subject extensively, and direct them to reckon with sufficient time resources.

Teachers should pay special attention to provide detailed learning instructions of the e-learning course to the students.

See the tips flyer [Six steps to support your students to succeed in time management of e-learning](#)