Learning analytics for learning design or learning design for learning analytics?

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Ministry of Education and Culture

(One) definition of learning analytics

”Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs.”

(Siemens, 2013)

About the potential of learning analytics

”…identified as a most promising technology to aid the personalization of learning and also change the educational model or even a course design due to insights gained from data.”

(Schmitz, Van Limbeek, Greller, Sloep, & Drachsler, 2017, p. 210)

On gathering student data

An argument:

”institutions use a number of data sources to gather ‘authentic’ data regarding student learning behavior: electronic learning environments, digital assessment methods, and student information systems, to name a few.

Furthermore, digital devices like mobile phones, tablets and laptops are being used to collect activities of students. It is this insight into the students’ learning processes and behaviors that, when presented in a user-friendly way, enables teachers to adapt their course and learning activities “on the fly”, during the course’s run-time.”

(Schmitz, Van Limbeek, Greller, Sloep, & Drachsler, 2017, p. 210)

But...

1. What if the course is poorly designed and/or it does not produce ”right kind” of data at the right time?

2. But most of all, what kind of data will support better learning design especially when large parts of learning activities are taking place outside data gathering technologies (for example in informal learning situations, group work, offline, WhatsApp), but which actually have an important role for the students and their *learning?*

Examples of learning activities that could produce data (from an actual course in Forestry)

Activity	Descriptions/questions/student quotes
1. Simulations	”*And it does not give you the feedback, if you get the results you are like ”Is this good or is this bad?”. And the teacher is just saying, “well, this is the way it seems to be”, and I don’t think anything got anything out of it*” Not used as data for assessment.
2. Practical work presentation	“*It never actually gets discussed. You just get the mark and “that’s how you did”. I thought I was doing well, but then I got a poor mark, and I did not know what I did wrong.*” The presentation not used as data?
3. Exam	”*Then when the exam is getting closer your learning starts to increase, because you have to.*” Students often use the learning content on their computers or offline, activity gathers towards the end of the course.

Examples of learning activities that could produce data (from an actual Forestry course in Forestry)

Activity	Descriptions/questions/student quotes
4. Informal lunch conversations, sharing stories, WhatsApp	Important for learning and passing the course, do not produce or have not been used as data.
5. Field visits	Conversations with professionals on the field were experienced as useful and supporting the understanding of personal competence. Field reports were discussed and analysed in groups but not used as data. What kind of develpment data could these be?

Summary 1

Argument: Student activity produces data which can be used to understand and develop learning design, learning environments and courses.

Reality: Courses do not always produce meaningful data because

1. The meaningful learning activities take place outside systems, they do not produce data, or the data is not gathered at all
2. Course design is often still based on knowledge transfer and exams (course design emphasises the end of the course) which means that learning activities
   - are not present
   - do not produce data or
   - possibly produced data is not used for feedback and assessment. (Also: many students download content to their computer and work outside systems such as the LMS)

Conclusion: Most likely not enough quality data will be produced which could be used to develop and optimize teaching, learning design, and learning environments, especially ”on the go”.

Summary 2

If LA is to be used for developing learning, courses should already be designed in a way which produces right kind of data and that the data will get *interpreted* the right way.

What is right kind of data and interpretation still needs deeper understanding in different learning contexts (differences between degree programs and subjects, and their approach to teaching and learning)

A question to be considered

If we do change our courses towards something that produces and gathers more data, could we ruin something that is already good in our learning design, but does not produce data?

“Let’s not forget: Learning analytics are about learning”

Gašević, Dawson ja Siemens (2015)

References

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Kiitos! / Thanks!

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