Uncovering Unexpected Actors in an Educational Service Ecosystem

Dr. Hannes Rothe
Prof. Dr. Martin Gersch
We need to lift the „Fog of Uncertainty“ to improve teaching. (Siemens und Long, 2011)

"[F]aculty members need to shift their perspective from 'What did I teach?' to 'What did my students learn?'". (Bradforth et al., 2015)
(1) **Background**

(Didactical) assumptions with regards to direct and indirect interactions

Following sd-logic, usage is defined as mutual resource integration – it is therefore interactive.

**Direct interaction** between an educational service provider and a learner, or between learners

**Indirect interactions** between actors, e.g. mediated through teaching and learning material

(Didactical assumptions) with regards to the Value-in-Use

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**BildRef.:** Rothe 2015 | Youtube, Hobvias sudoneigh 2006 | Flickr, eigene Darstellungen
(1) Background
Looking for unexpected actors in the „fog of utilization“

1) Many activities of a learning process are hidden.

2) Technology creates data points and allow for a deeper look into the learning process.

3) Analytical procedures (Learning Analytics) may return recommendations and evaluations of interventions in educational services.

Research Question: How do resource-integrating users autonomously – and therefore unexpectedly – integrate actors into value co-creation processes?
(1) Background
Data points for revealing the „fog of utilization“

Client sided data collection

User / Student

Javascript / Browser Extensions …

Server sided data collection

Other component providers

Via public APIs oder manually shared data of related services…

Focal educational service provider

Student Information Systems, ERP, Webserver …
(2) Method
Educational Service Improvement Cycle (ESIC)

1. Identify aims and strategies
2. Assess current state
3. Define desired state
4. Set indicators for critical activities
5. Collect and analyze data
6. Derive implications for the learning scenario

1st iteration

Teach & Measure

Design

Reflect

2nd iteration

ESIC Owner
ESIC Process Manager
Learning Analyst
Others

External Service Owner
Internal Staff

Ref. Rothe (2016)
Uncovering Unexpected Actors in an Educational Service Ecosystem, WK DLM 2016, Hannes Rothe & Martin Gersch

(2) Method
ESIC in detail

1. Identify aims and strategies

Measures of (learning) success (e.g., competence framework of EQR/DQR) as a basis for didactical assumptions and interventions.

2. Assess current state

Process model of didactical assumptions, using the enhanced Business Process Blueprinting (BP²)

3. Define desired state

Process Reengineering (e.g., internalization or externalization) using the enhanced BP²

4. Set indicators for critical activities

Choose KPI as well as target span considering external conditions (privacy, data security, copyright etc.)

5. Collect and analyze data

Assess and evaluate data of within the educational service ecosystem.

6. Derive implications for the learning scenario

Contrast (learning) success measures on the learning arrangement level with usage data of the components.

Ref. Rothe (2016)
Uncovering Unexpected Actors in an Educational Service Ecosystem, WK DLM 2016, Hannes Rothe & Martin Gersch

(3) Case Study
Net Economy – a cross-institutional learning scenario

2012 / 2013

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<th>Students</th>
<th>Technische Universität Dresden</th>
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2013 / 2014

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(4) Findings
Finding unexpected behavior within the team results of the case study phase

Six teams finished their entire case study on a single day

<table>
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<th>Relative Workshare on the Google Document Per Period</th>
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Image: UploadWizard | Wikipedia (cc by sa 3.0)

In five teams the whole document was copy and pasted; Students used Word for asynchronously resource integration
(4) Findings
Finding unexpected behavior within the n:n-Interactions

Intensive communication between students on our virtual social network throughout 1st and 2nd phase; severely reduced in 3rd phase

Symbols
Colors and Numbers: Groups

- Simferopol
- Clausthal
- Soest
- Berlin
- Mülheim
- Bochum
- Jakarta
- Externe

Ref. Rothe (2016)

Most teams used Google Hangout or MS Skype for synchronous interaction.
(5) Summary

Users solved issues by integrating unexpected actors

Service Ecosystems are "relatively self-contained, self-adjusting systems of resource-integrating actors that are connected by shared institutional logics and mutual value creation through service exchange" (Lusch / Vargo, 2014, S. 161)

1. The Educational Service Improvement Cycle enables to contrast expected with actual usage for key activities.

2. Revealing usage processes may unveil unexpected actors.

3. Students integrated further actors to solve issues with provided ways of resource integration.
   (alternatives for synchronous or asynchronous interaction)
Vielen Dank für Ihre Aufmerksamkeit!

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Bibliography


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