MOOC

MOOCs, Learning Analytics and OER
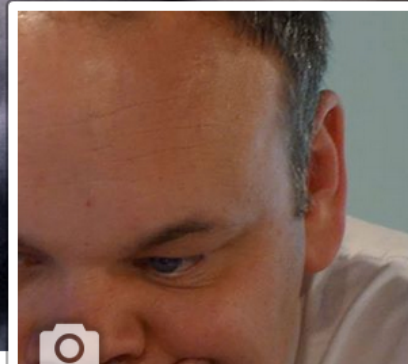- a perfect triangle for
the future of education!

iMooX

03.05.2020 | CSEDU

Martin Ebner

e-LEARNING BLOG
e-Learning an der Technischen Universität Graz

http://elearningblog.tugraz.at

http://www.facebook.com/martin.ebner

Martin Ebner

http://www.martinebner.at

Univ.-Doz. Dipl.-Ing. Dr. techn.
Martin EBNER
Technische Universität Graz
Zentraler Informatikdienst
Vernetztes Lernen
Münzgrabenstraße 35a
A-8010 Graz
Austria

https://www.researchgate.net/profile/Martin_Ebner2

Martin bei Twitter / Martin bei Facebook / Martin bei Google+ / Martin bei Scholar (h-index)

RG HOME   PUBLICATIONS   QUESTIONS   JOBS

Martin Ebner

@mebner

Researcher & Lecturer on Learning and Technology (e-learning), father, techgeek and I am a mac-user ;-)

Graz, Styria, www.elearningblog.tugraz.at

https://twitter.com/#!/mebner

Martin Ebner ▫ 27.62

Assoc. Prof (Univ.-Doz.) ✎

Head of Department ✎
Graz University of Technology, Graz · Department of Soci...

MOOC

iMooX is a xMOOC platform for courses with an explicit open license (Creative Commons).

Es ist Zeit, etwas Neues zu lernen

Registrieren Sie sich jetzt

NEU: Login mit eduID

TU Graz   UNI GRAZ   mooin

http://imoox.at

Kursliste

MEKO MOOC

Demnächst verfügbar

#MeKoMOOC19: Medienkompetenz

Limnologie-Ökologie des Wassers

Demnächst verfügbar

simooc

Demnächst verfügbar

Das Internet in meinem Unterricht?

M47H3 F17

Betreuter Kurs

Mathe-Fit

19%

Unit 1   Unit 2   Unit 3   Unit 4

Unit 3: Wie wird aus einem Algorithmus ein Computerprogramm?/How does an algorithm become a computer program?

Your progress ?

✓

An Algorithm ...

...can be many things - from a game manual to a recipe. But why are algorithms important, when do you need them and which algorithms do you use in your everyday life. In the first video of module 3 we try to find a general definition for algorithms and describe common properties of algorithms. This video should help you to get an understanding of algorithm design and further to promote algorithmic thinking.

Video: What is an algorithm?

http://imoox.at

[InfoFIT] What is an algorithm? (3.1 EN)
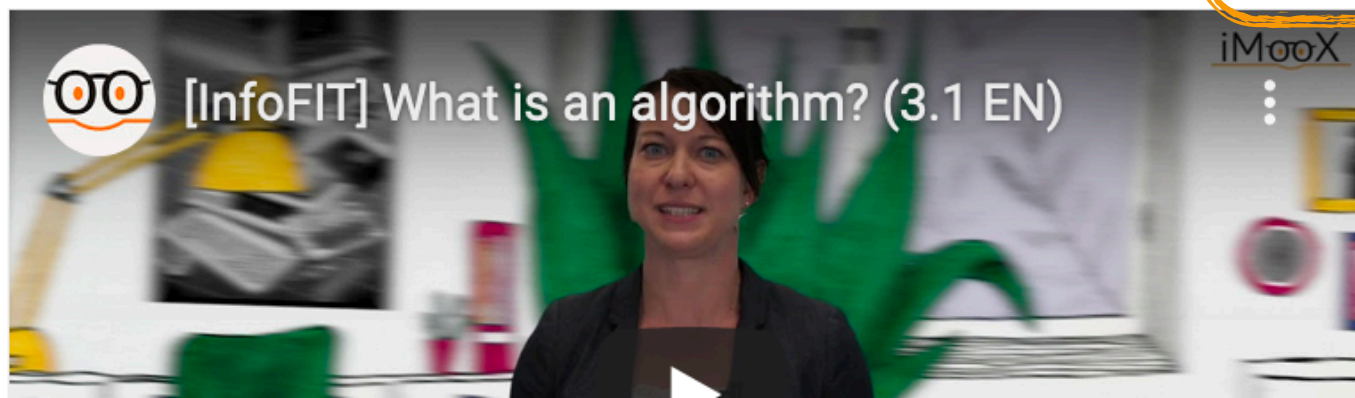
iMooX

iMooX

MOOC

Currently about 100 open licensed courses are offered in various disciplines.

MOOC

How to Implement
Learning Analytics?

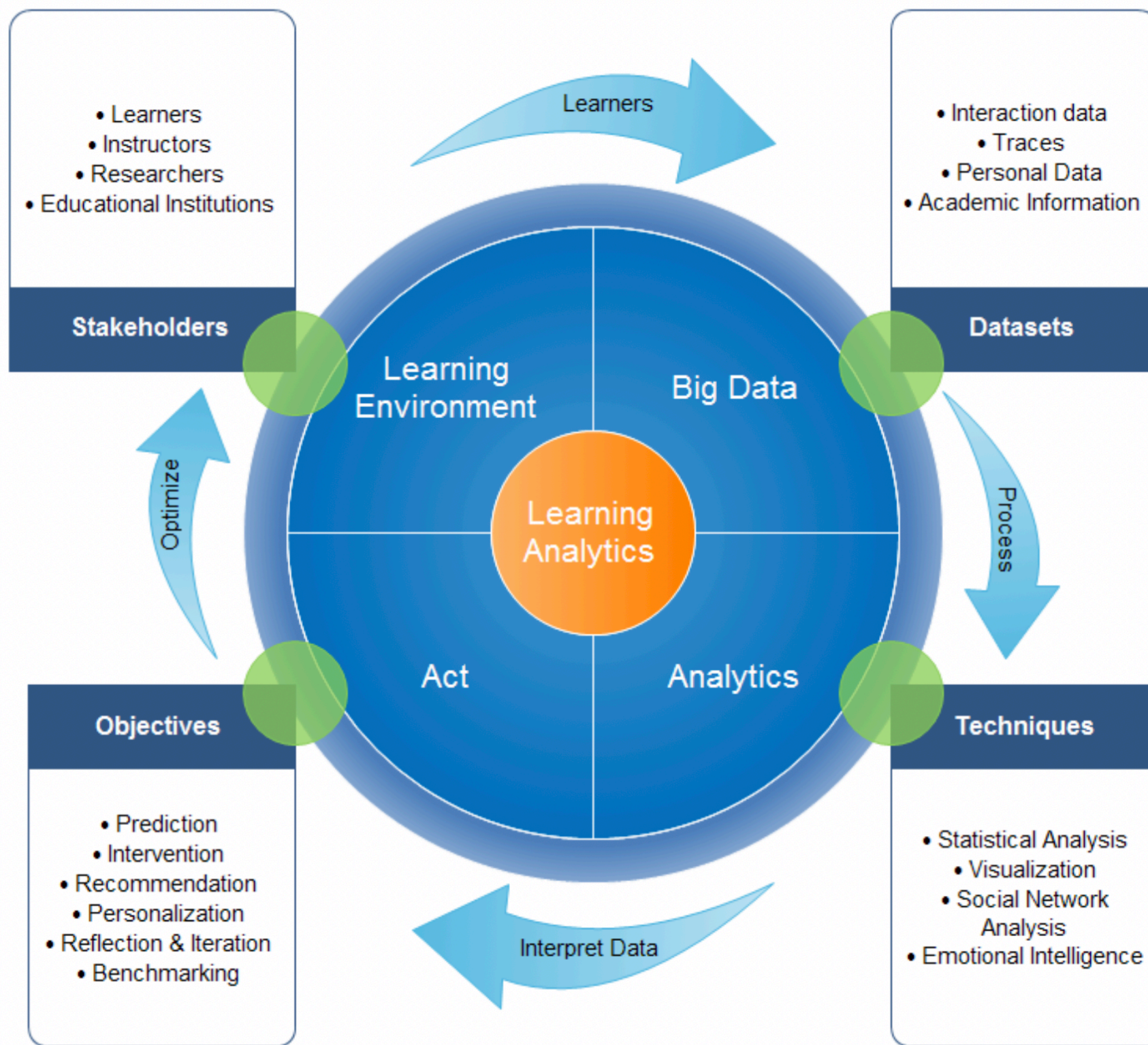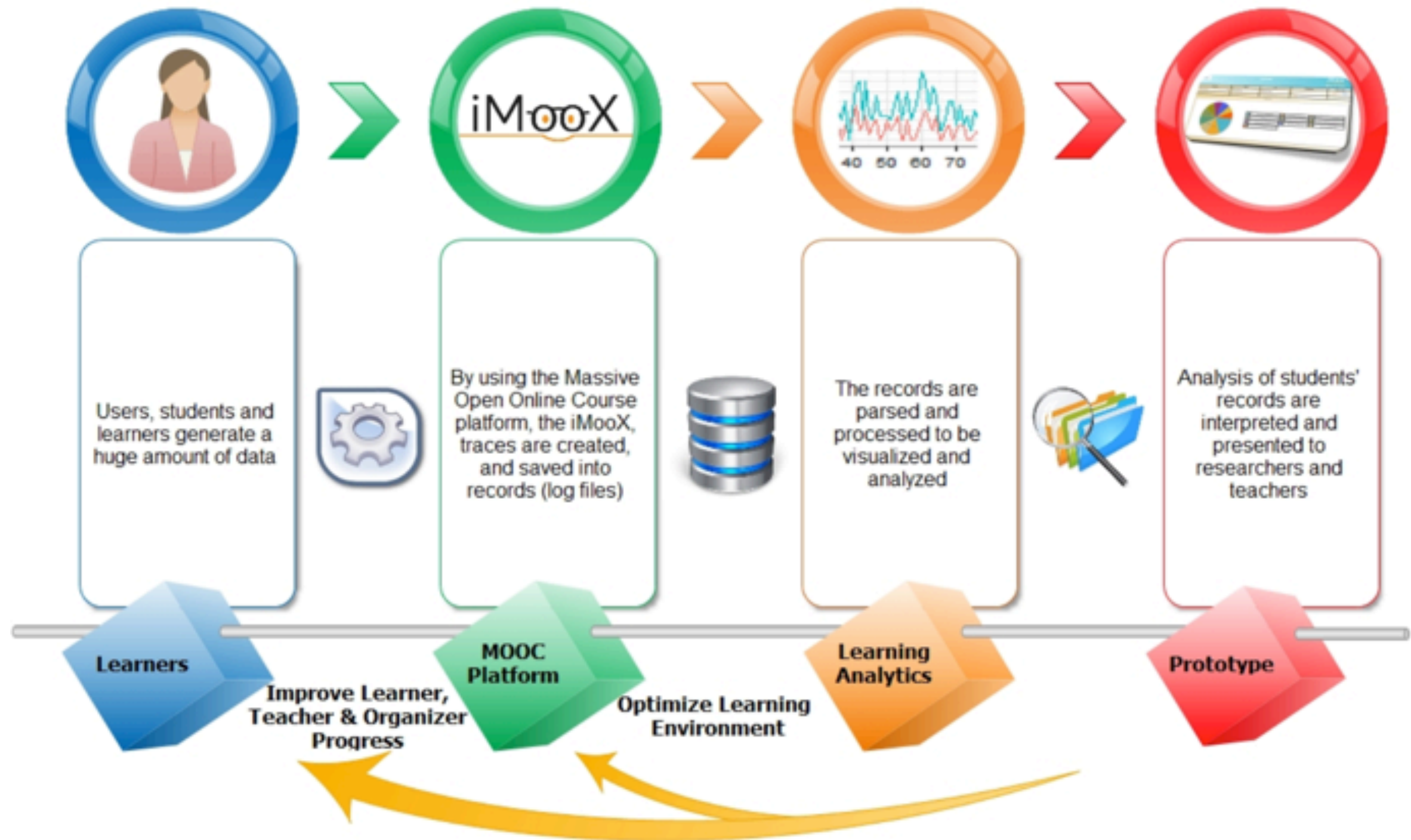Khalil, M. & Ebner, M. (2015). Learning Analytics: Principles and Constraints. In Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2015. pp. 1326-1336. Chesapeake, VA: AACE

iMooX Learning Analytics Prototype Architecture

Users, students and learners generate a huge amount of data

By using the Massive Open Online Course platform, the iMooX, traces are created, and saved into records (log files)

The records are parsed and processed to be visualized and analyzed

Analysis of students' records are interpreted and presented to researchers and teachers

Learners

MOOC Platform

Learning Analytics

Prototype

Improve Learner, Teacher & Organizer Progress

Optimize Learning Environment

Khalil, M., Ebner, M. (2016) What Massive Open Online Course (MOOC) Stakeholders Can Learn from Learning Analytics? In: Spector, M., Lockee, B., Childress, M. (Ed.), Learning, Design, and Technology: An International Compendium of Theory, Research, Practice, and Policy, Springer International Publishing, pp. 1-30

Visualization

Implementation Framework

1

iMooX

Web Server

2

Learning Analytics Server

4

Mine Students Activities

Log Files Management

log

3

Khalil, M., Ebner, M. (2016) What Massive Open Online Course (MOOC) Stakeholders Can Learn from Learning Analytics? In: Spector, M., Lockee, B., Childress, M. (Ed.), Learning, Design, and Technology: An International Compendium of Theory, Research, Practice, and Policy, Springer International Publishing, pp. 1-30
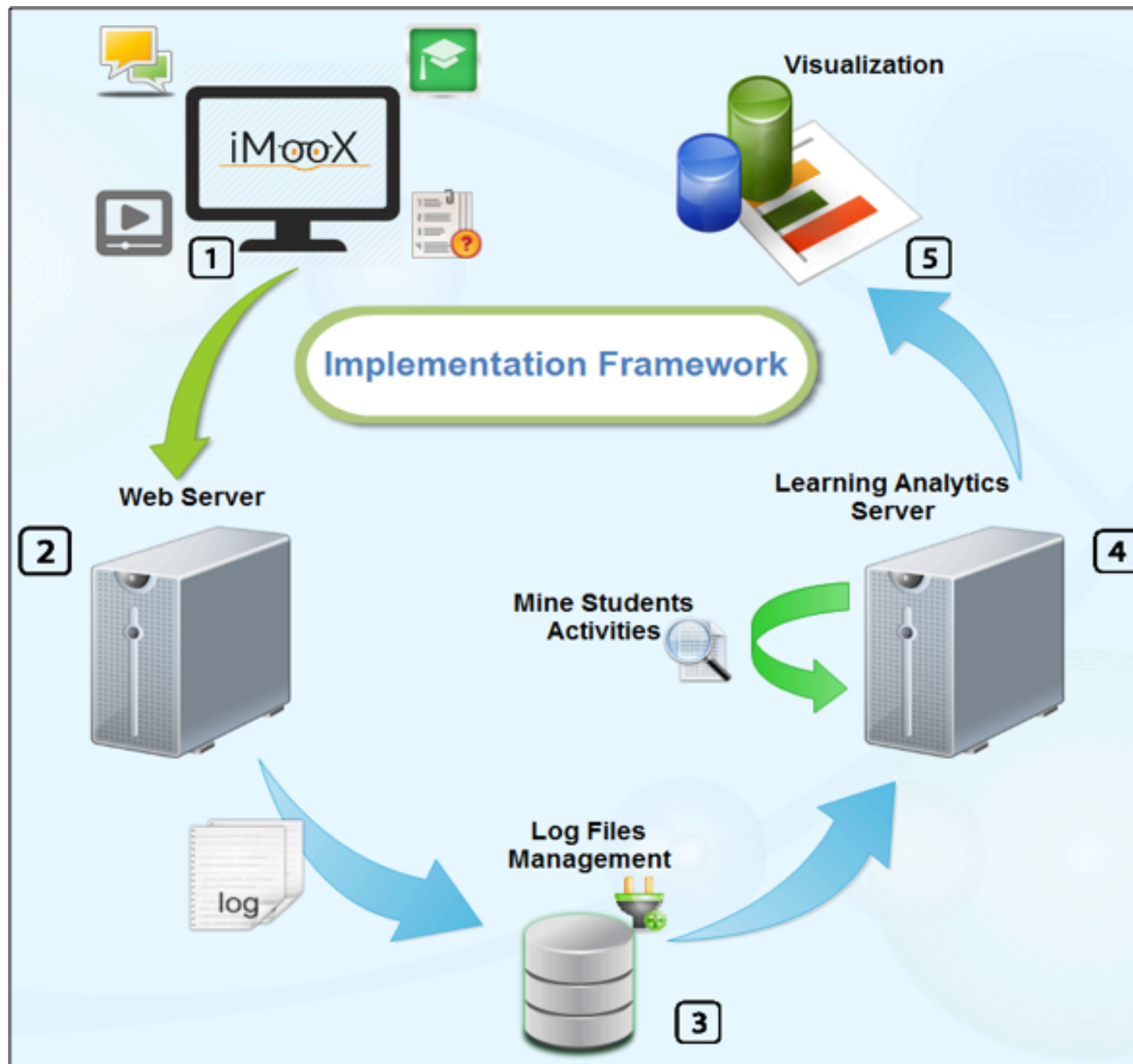
Khalil, M. & Ebner, M. (2015). Learning Analytics: Principles and Constraints. In Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2015. pp. 1326-1336. Chesapeake, VA: AACE
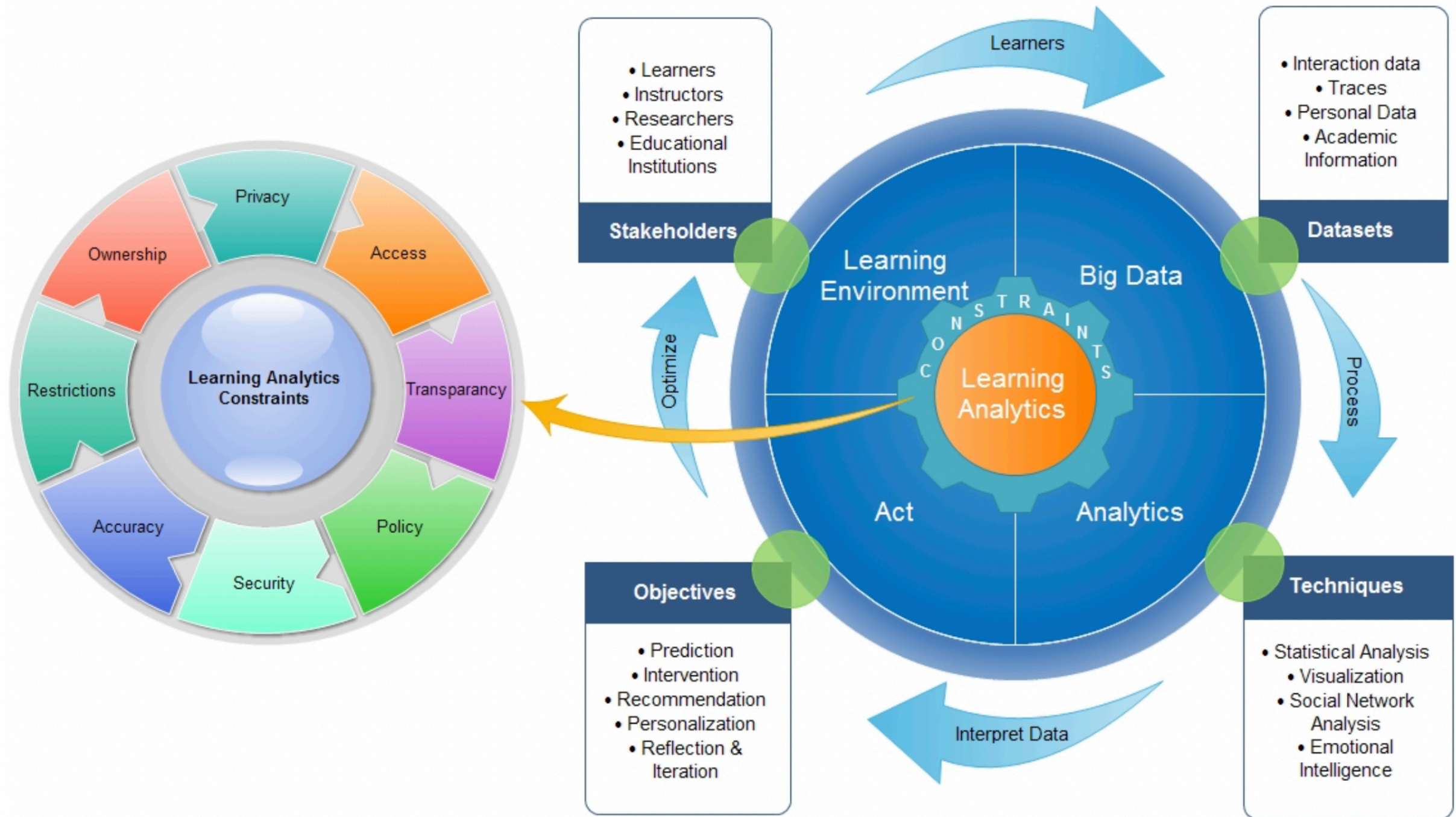
LA constraints

Privacy

Access

Transparancy

Ownership

Learning Analytics
Constraints

Policy

Restrictions

Security

Accuracy

Khalil, M. & Ebner, M. (2015). Learning Analytics: Principles and Constraints. In Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2015. pp. 1326-1336. Chesapeake, VA: AACE

LA constraints

Revealing Personal Information

Morality to view students' data

Collecting and Analyzing data Transparency

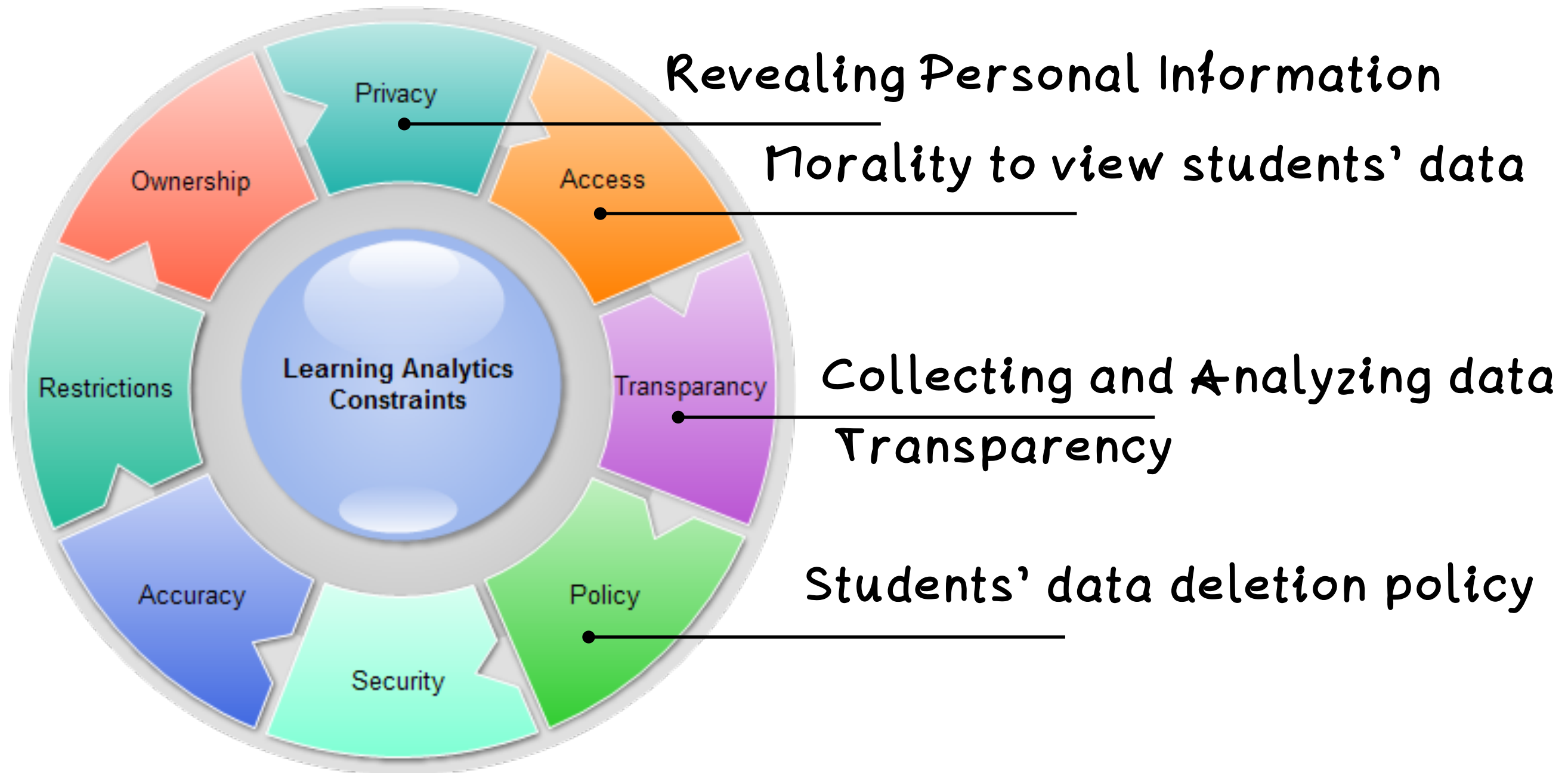**Students' data deletion policy**

Khalil, M. & Ebner, M. (2015). Learning Analytics: Principles and Constraints. In Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2015. pp. 1326-1336. Chesapeake, VA: AACE
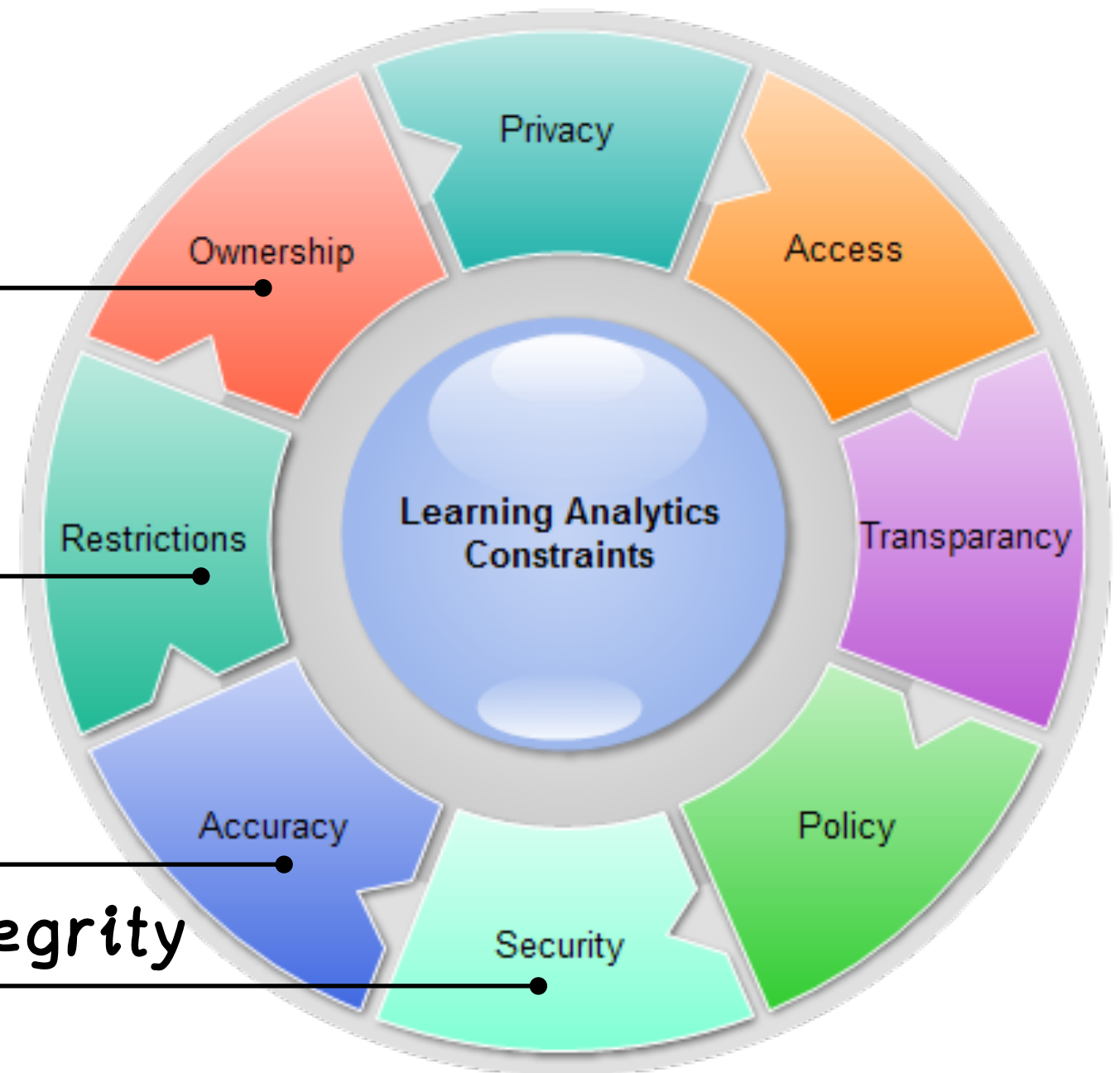
LA constraints

Who owns students data, Students or institutions?

Data Protection and Copyright Laws limit the use of LA apps

Inaccurate analysis results?

Achieving Confidentiality, Integrity and Availability

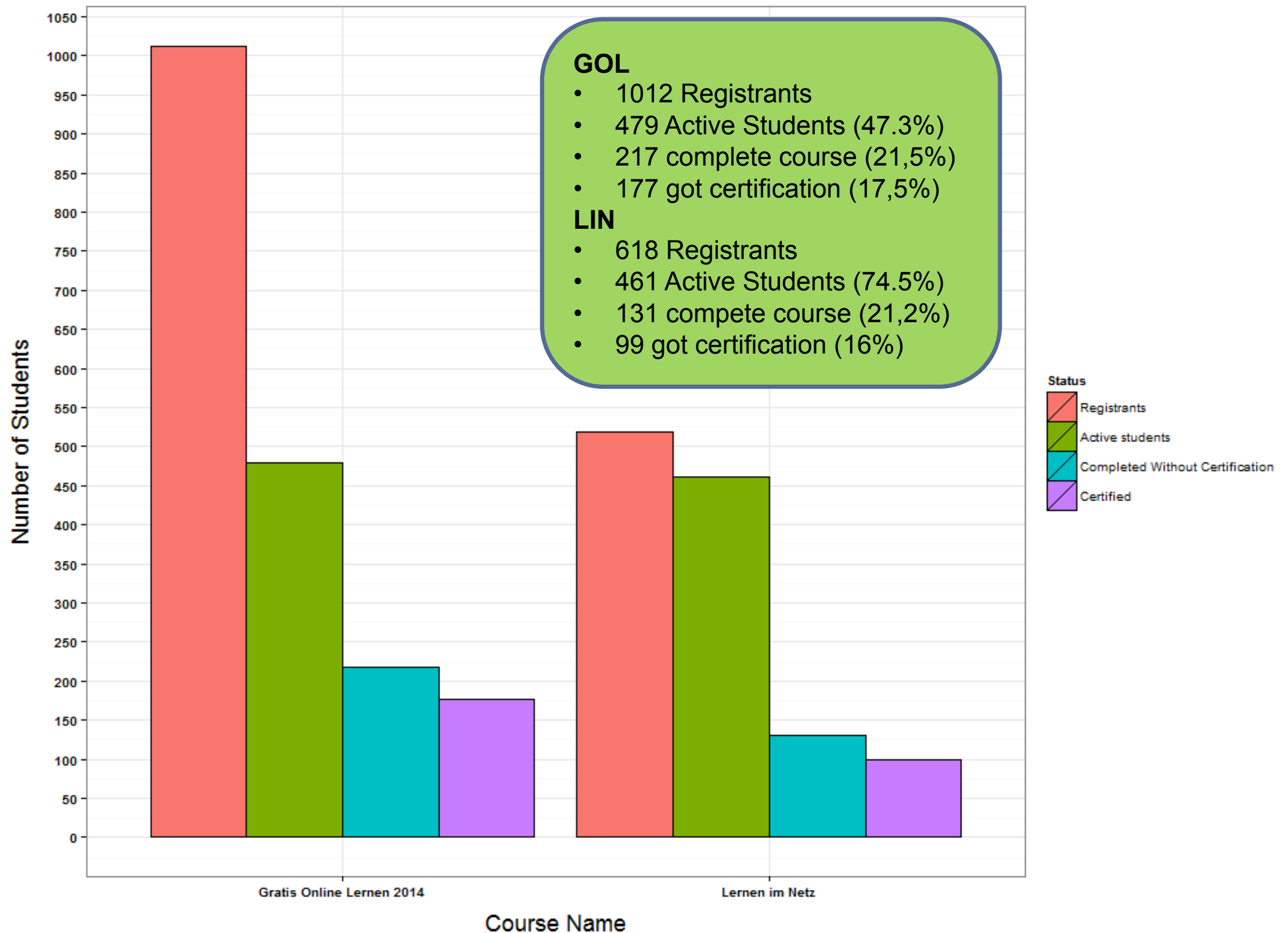Khalil, M. & Ebner, M. (2015). Learning Analytics: Principles and Constraints. In Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2015. pp. 1326-1336. Chesapeake, VA: AACE

High Dropout Rate on MOOCs is a legend

Students Summary in the Three MOOCs

GOL
- 1012 Registrants
- 479 Active Students (47.3%)
- 217 complete course (21,5%)
- 177 got certification (17,5%)

LIN
- 618 Registrants
- 461 Active Students (74.5%)
- 131 compete course (21,2%)
- 99 got certification (16%)

Status
- Registrants
- Active students
- Completed Without Certification
- Certified

Number of Students

Gratis Online Lernen 2014   Lernen im Netz

Course Name

Lackner, E., Ebner, M., Khalil, M. (2015) MOOCs as granular systems: design patterns to foster participant activity, eLearning Papers, 42 (2015), pp. 28-37

Activity Profile

MOOC: Mechanics in Everyday Life

Student Status
- Certified
- Non-Certified

Learners Class
- △ School Pupil
- ○ Others

Week axis (Week 1 – Week 10) vs Activity (Forum Post, Forum Read, Quiz Trial, Video Access)
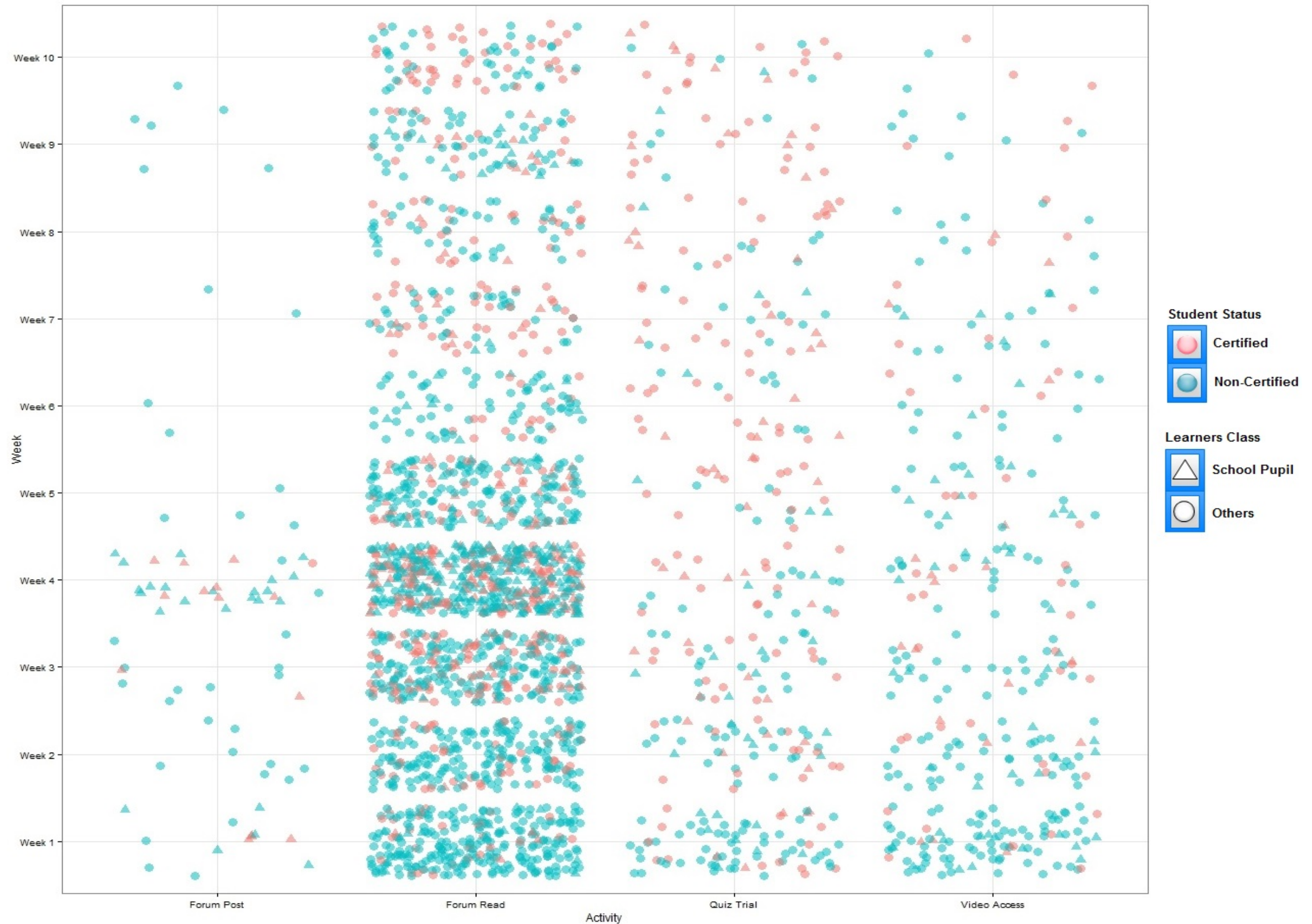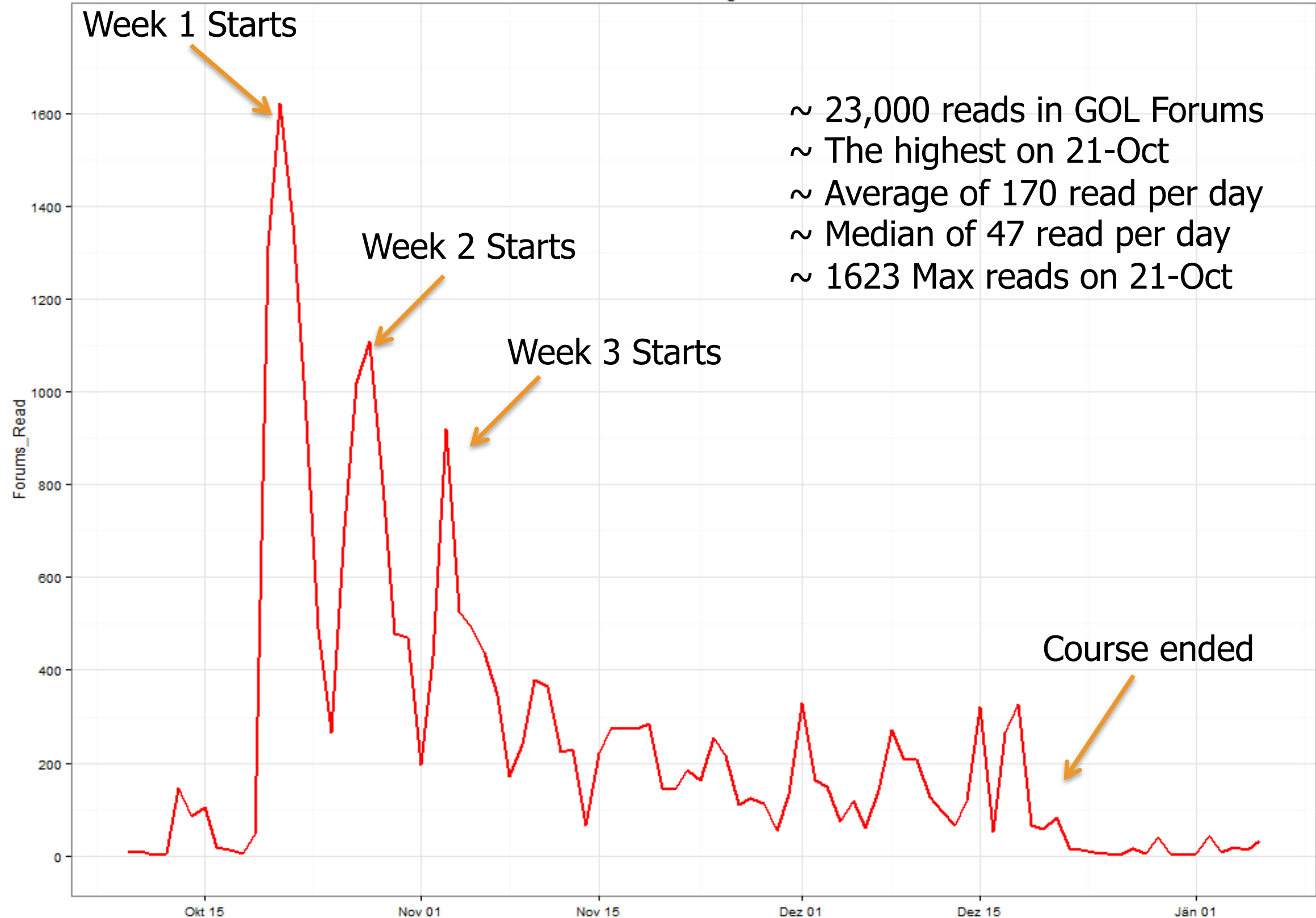
Khalil, M., Ebner, M. (2015) A STEM MOOC for School Children - What Does Learning Analytics Tell us? In: Proceedings of 2015 International Conference on Interactive Collaborative Learning (ICL), Florence, Italy, pp. 1-7
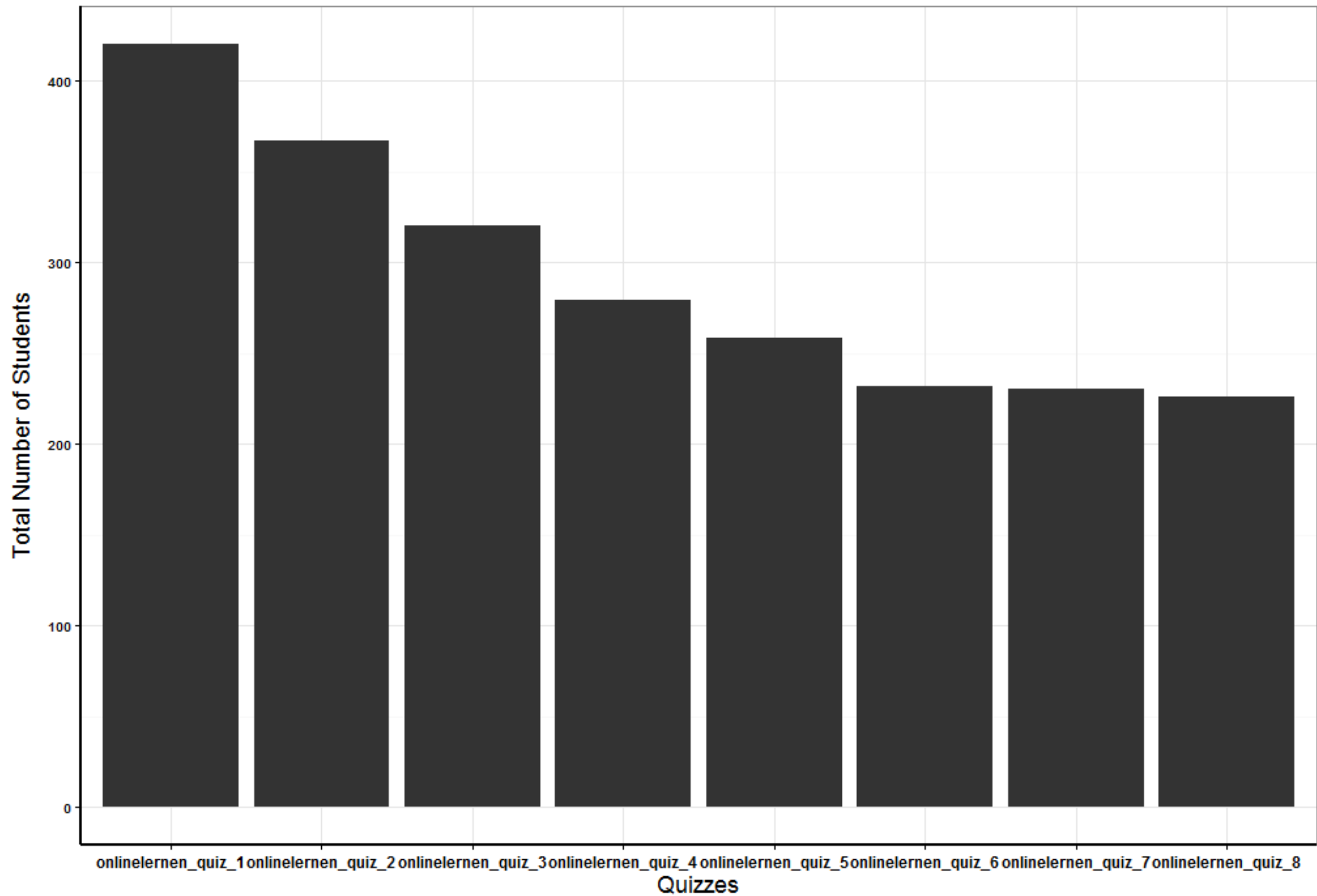
Thesis 2

MOOCs means **participatory** education

(at least in the first four weeks)

GOL forums read during active course

MOOC : Gratis Online Lernen
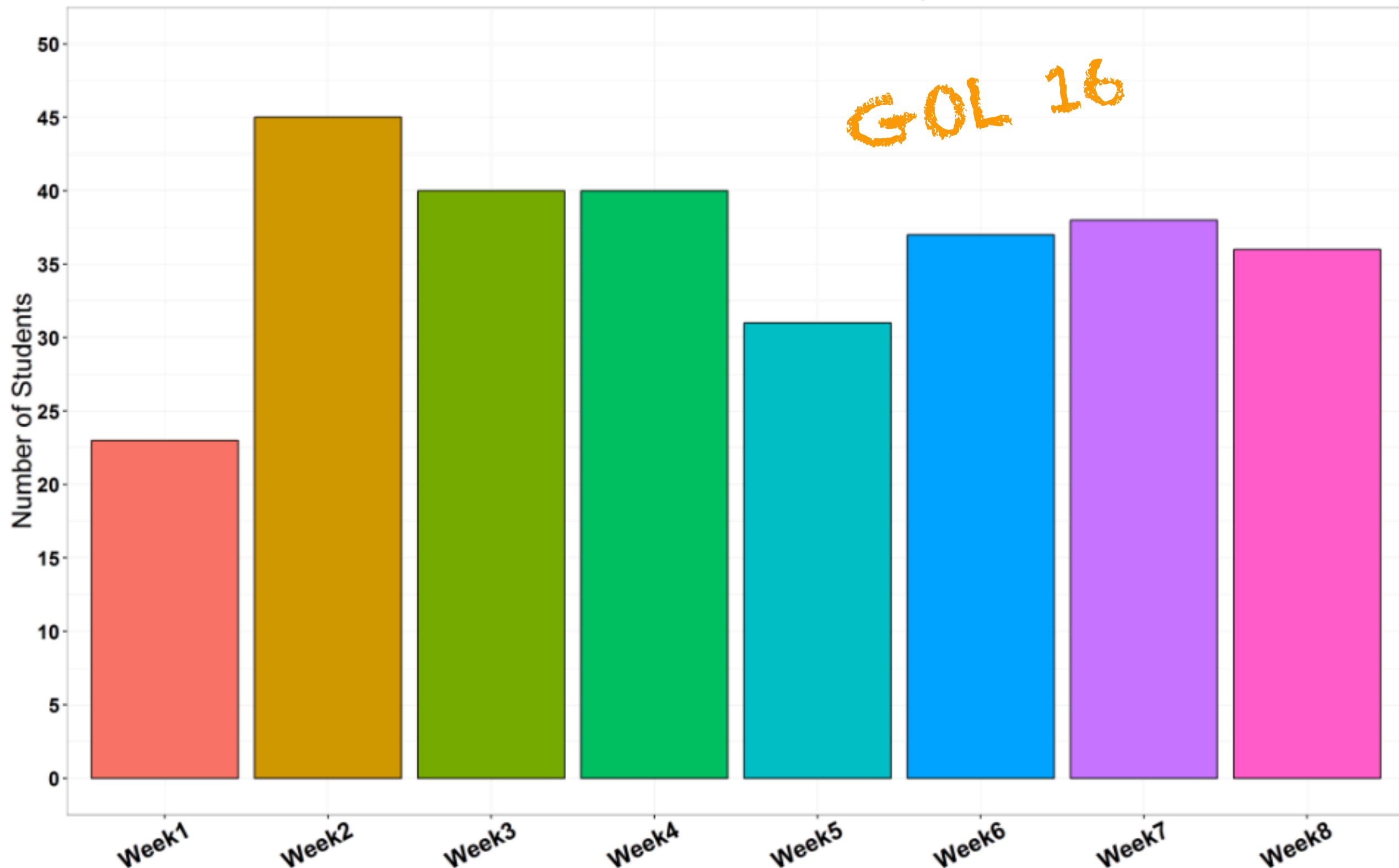Showing: Quizzes Attendance

Gratis Online Lernen
Videos Tracking

Khalil, M., Ebner, M. (2016) What Massive Open Online Course (MOOC) Stakeholders Can Learn from Learning Analytics? In: Spector, M., Lockee, B., Childress, M. (Ed.), Learning, Design, and Technology: An International Compendium of Theory, Research, Practice, and Policy, Springer International Publishing, pp. 1-30

Number of students who did at least one Quiz in GOL2016
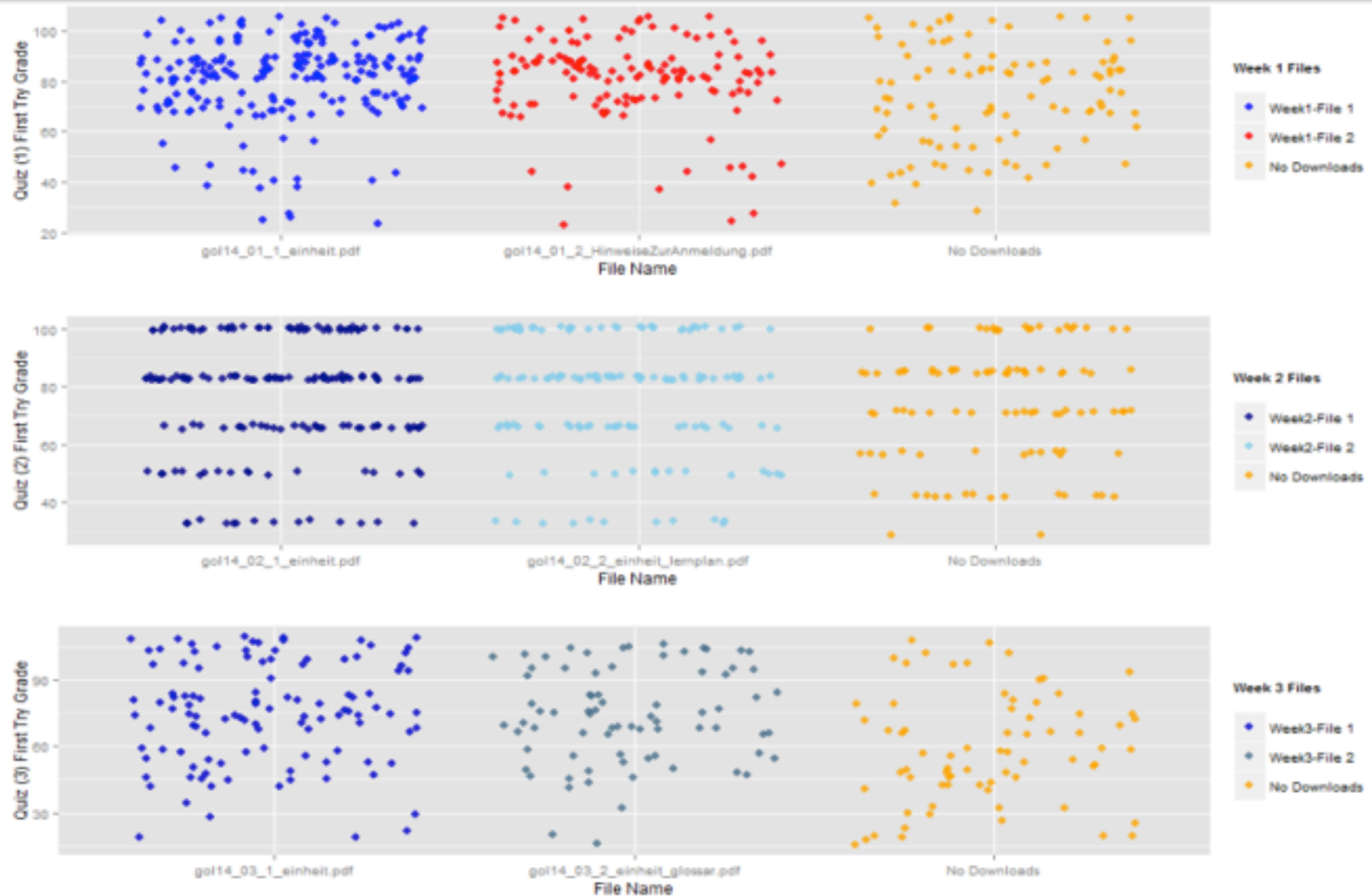
GOL 16

Khalil, M., Ebner, M., & Admiraal, W. (2017). How can Gamification Improve MOOC Students Engagement?. In proceedings of the European Conference on Game Based Learning, Graz, Austria, (pp. 819-828)

Thesis 3

Higher effort is good but not a good predictor for success

MOOC: Gratis Online Learnen
1st Attempt Quizzes & Document Downloads

Khalil, M., Ebner, M. (2016) What Massive Open Online Course (MOOC) Stakeholders Can Learn from Learning Analytics? In: Spector, M., Lockee, B., Childress, M. (Ed.), Learning, Design, and Technology: An International Compendium of Theory, Research, Practice, and Policy, Springer International Publishing, pp. 1-30

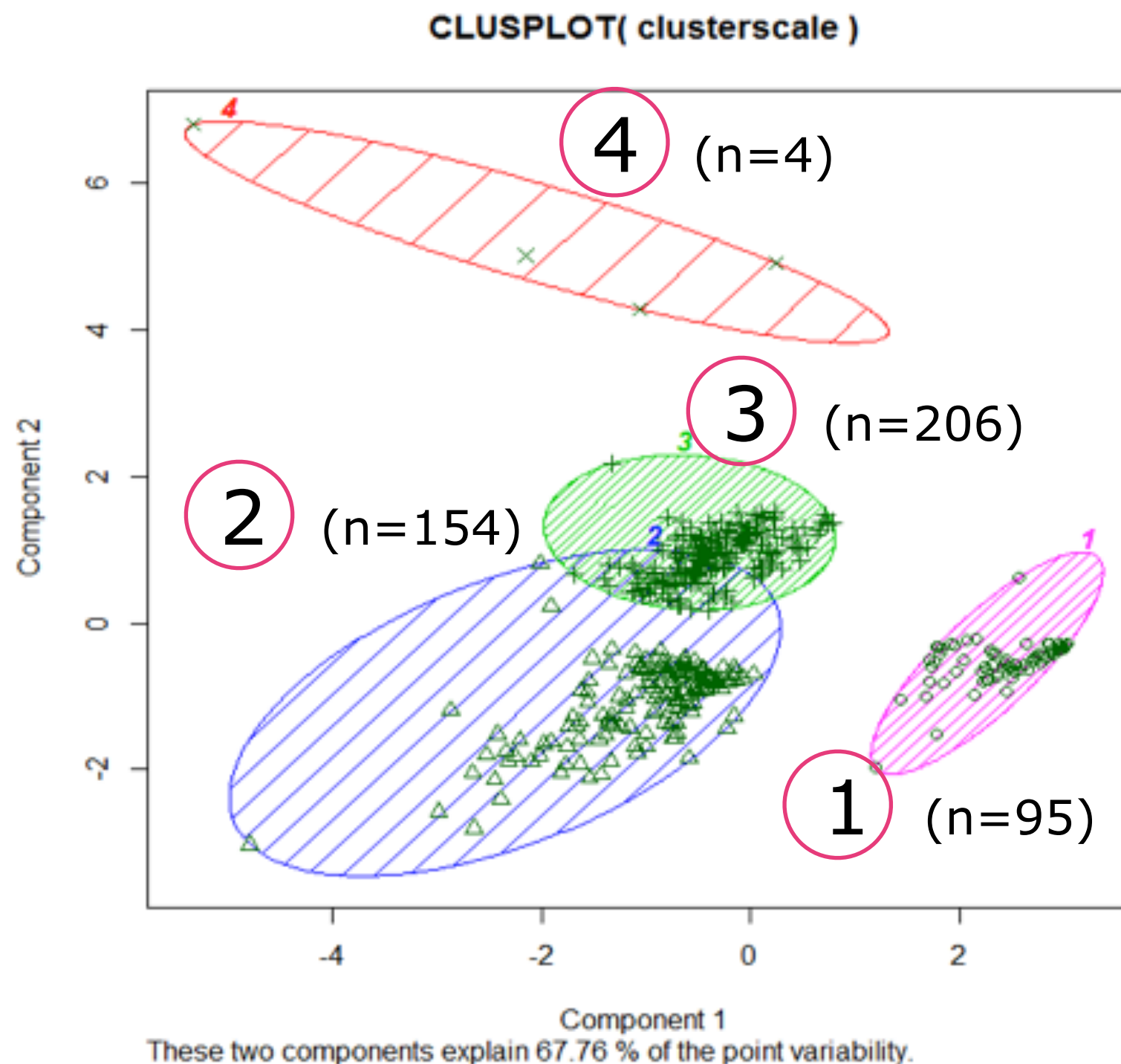Average Quizzes Scores Vs. Reading Forums Activity
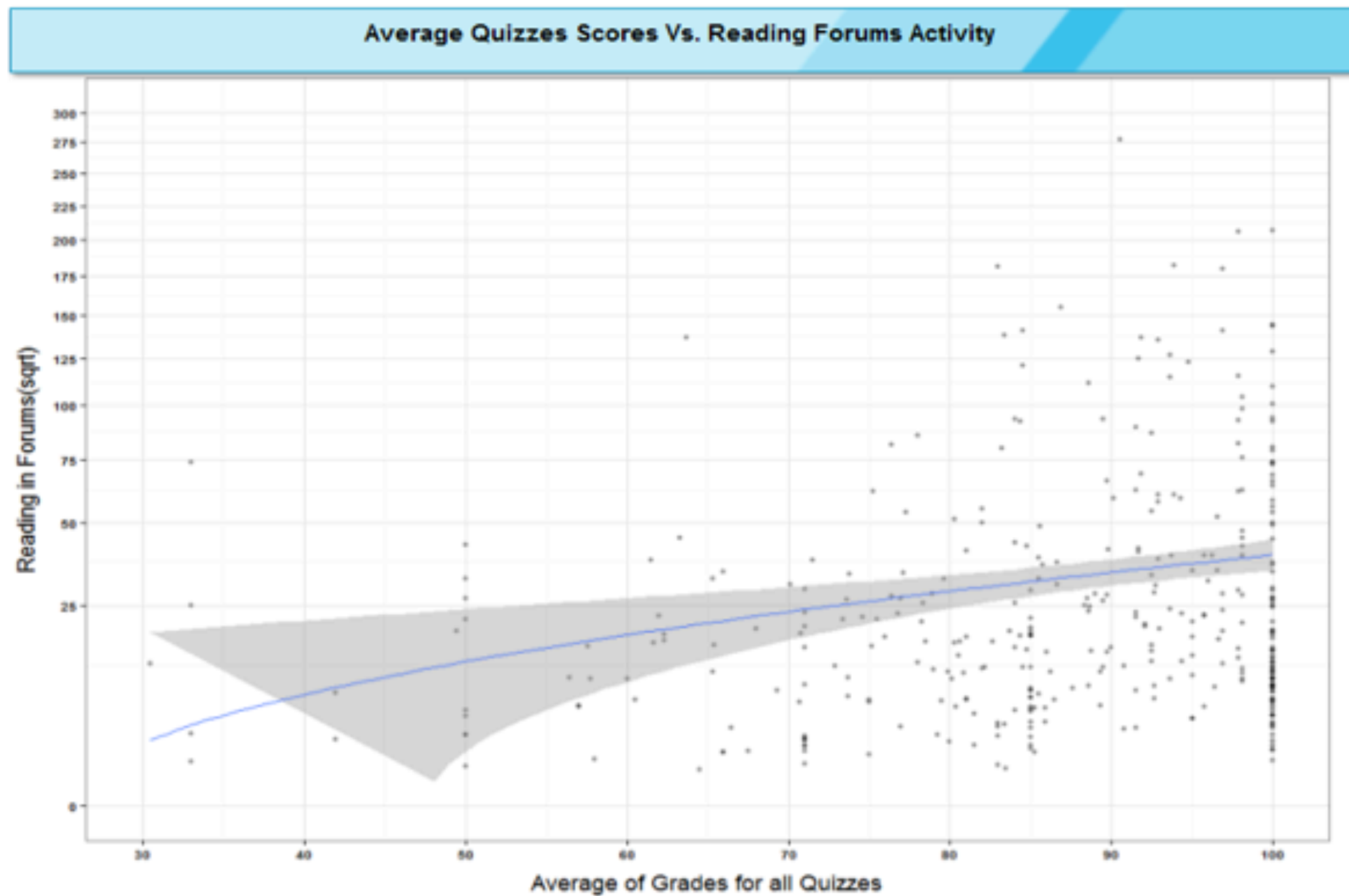
Khalil, M., Ebner, M. (2016) What Massive Open Online Course (MOOC) Stakeholders Can Learn from Learning Analytics? In: Spector, M., Lockee, B., Childress, M. (Ed.), Learning, Design, and Technology: An International Compendium of Theory, Research, Practice, and Policy, Springer International Publishing, pp. 1-30

Thesis 4

Learning Analytics tells us how learning in classrooms happens

CLUSPLOT(clusterscale)

iMooX

Students (n=459)

4 (n=4)

3 (n=206)

2 (n=154)

1 (n=95)

Component 1
These two components explain 67.76 % of the point variability.

Khalil, M., Kastl, C., Ebner, M. (2016) Portraying MOOCs Learners: a Clustering Experience Using Learning Analytics. In: Proceedings of the European Stakeholder Summit on experiences and best practices in and around MOOCs. Khalil, M., Ebner, M., Kopp, M., Lorenz, A., Kalz. M. (Eds.). BookOnDemand, Norderstedt. pp. 265 - 278

Case: University Students

	Reading Freq.	Writing Freq.	Watching Videos	Quiz Attempts	Certification Ratio
Cluster 1	Low	Low	Low	Low	10.53%
Cluster 2	High	Low	High	High	96.10%
Cluster 3	Moderate	Low	Low	High	94.36%
Cluster 4	High	High	Low	moderate	50%

Khalil, M., Kastl, C., Ebner, M. (2016) Portraying MOOCs Learners: a Clustering Experience Using Learning Analytics. In: Proceedings of the European Stakeholder Summit on experiences and best practices in and around MOOCs. Khalil, M., Ebner, M., Kopp, M., Lorenz, A., Kalz. M. (Eds.). BookOnDemand, Norderstedt. pp. 265 - 278

**Thesis 5**

Learning happens all time
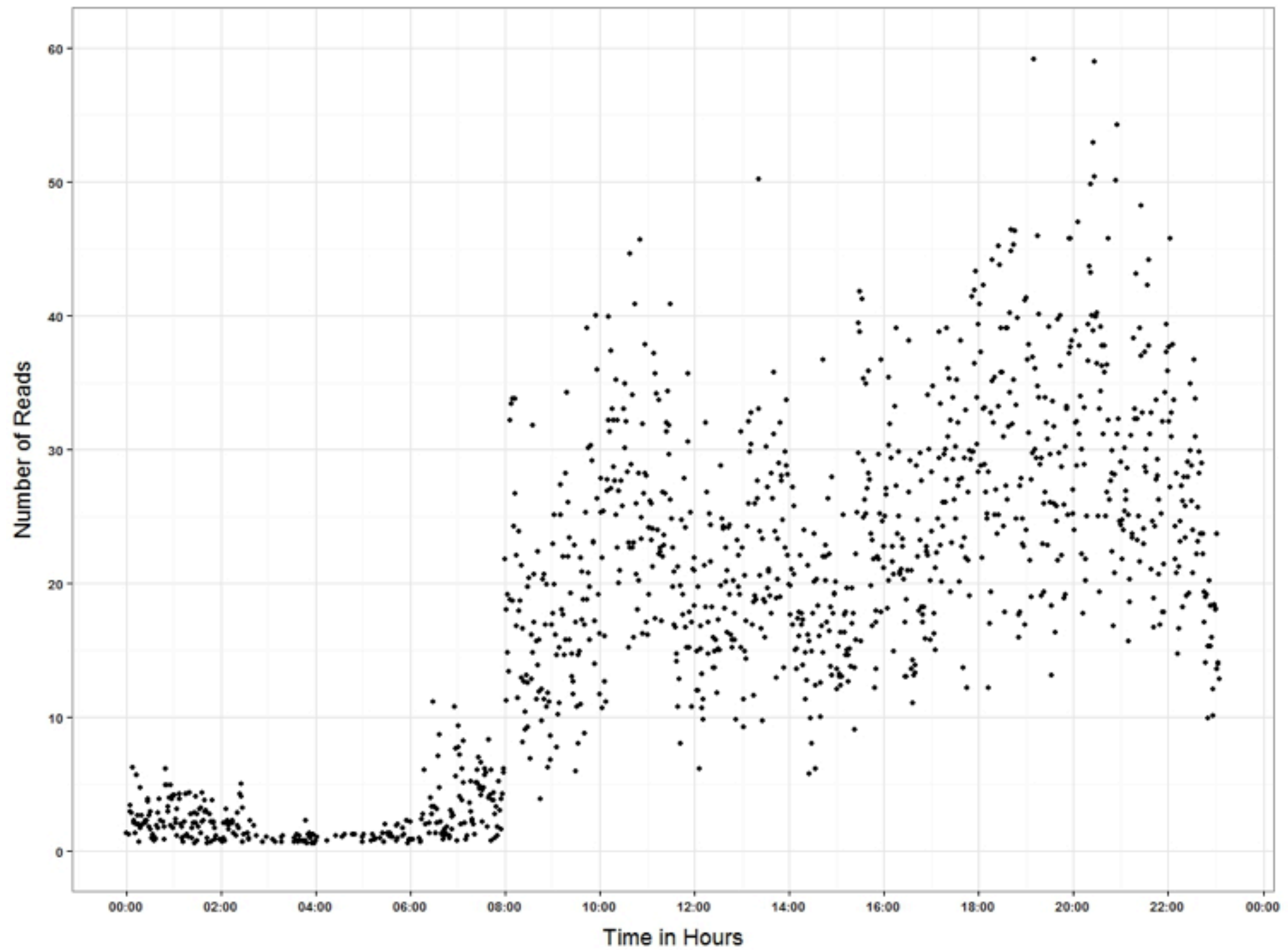
Lackner, E., Khalil, M., Ebner, M. (2016) How to foster forum discussions within MOOCs: A case study. International Journal of Academic Research in Education. 2(2), DOI: 10.17985/ijare.31432

Forum Posts

× Das Internet in meinem Unterricht? Aber sicher!
× Gratis Online Lernen

Das Internet in meinem Unterricht? Aber sicher!
Gratis Online Lernen
E-Learning & Recht – Urheberrecht-Reboot
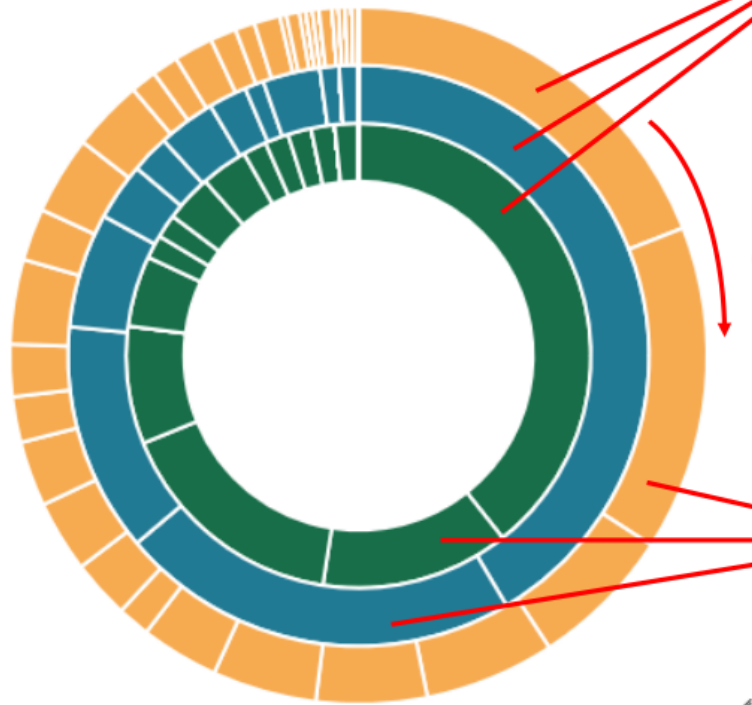
Amount of participants with 1 post

Increasing number of posts

Amount of participants with 2 posts

Maier, K., Leitner, P., & Ebner, M. (2019). Learning Analytics Cockpit for MOOC Platforms. In Emerging Trends in Learning Analytics. Leiden, Niederlande: Brill | Sense. doi: https://doi.org/10.1163/9789004399273_014

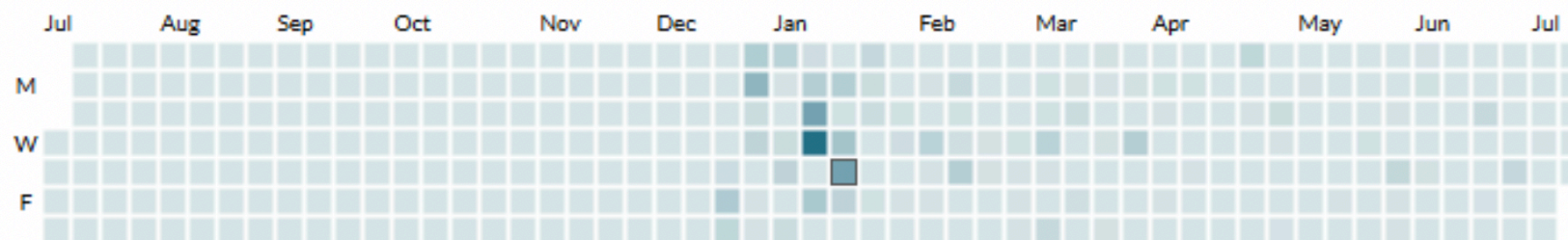# Logins over Time

From 2017/10/09 to 2017/12/10

Logins

Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9
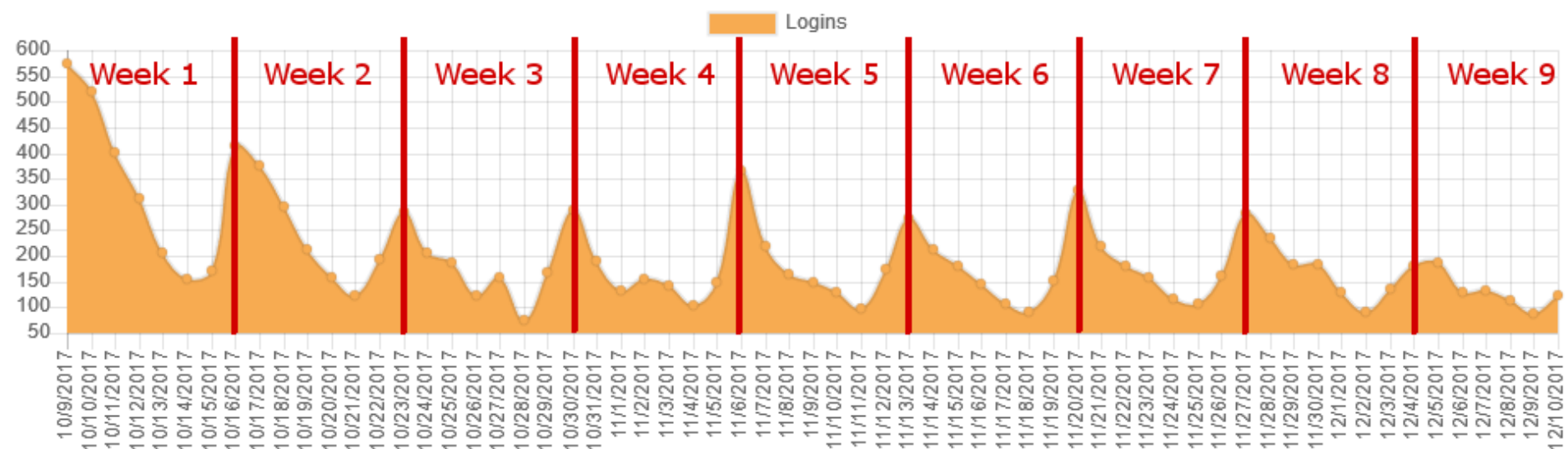
Heatmap Calendar 📥✏

LawBusters – Drei Themen Recht.humorvoll ⌄

31525 activities Thu, Jan 10th 2019

Jul   Aug   Sep   Oct   Nov   Dec   Jan   Feb   Mar   Apr   May   Jun   Jul

M

W

F

Less ⬜⬜⬛⬛ More Activity

LawBusters – Drei Themen Recht.humorvoll

Heatmap 📥✏

Raspi Prog 1905x1097 - /course/view.php?id=4 ▾

Leitner, P. , Maier, K., Ebner, M. (2020) Learning Analytics Tools for Massive Open Online Courses, accepted: in print

Making education
accessible to all

iMooX

Fast transfer of knowledge

iMooX

Interchange between Educational institutions

Didactic innovation

iMooX

Flipped Classroom

https://youtu.be/uutIBrsgNJE

iMooX

iMooX

MEINE KURSE / EBMOOC2018

EBmooc- Digitale Werkzeuge für ErwachsenenbildnerInnen

EBmooc

Kursinhalt   Neuigkeiten   Forum (2)   Dateien   Kursbeschreibung   Teilnahmebestätigung

5%

◂   **Lektion 1**   Lektion 2   Lektion 3   Lektion 4   ▸

Inverse Blended Learning

Lektion 1: Einführung und das Lernen in MOOCs

Fortschritte ❓

Herzlich willkommen in Woche 1!

Hunderte Kolleginnen und Kollegen haben sich mittlerweile gemeinsam mit Ihnen zum EBmooc angemeldet - das finden wir ganz schön aufregend! Und nun ist es soweit und wir starten gemeinsam den Kurs: erstmal mit Kennenlernen, mit Eingewöhnung und Orientierung. Einige Informationen über MOOCs und Tipps zum Lernen in MOOCs sind auch dabei, und unsere Linkliste erlaubt Vertiefungen. Genießen Sie einen sanften Einstieg, gewürzt mit den wichtigsten Informationen. Und wer mag, trifft uns live am Freitag 6.4. ab 16.30 im ersten Webinar.
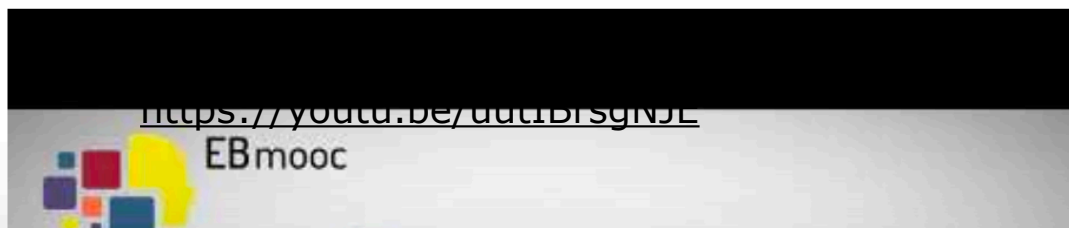
Webinar

06.04.2018, 16.30 - 18.00 Einführung, Fragen und Austausch zum EBmooc | Ausblick mit dem EBmooc-Team: Birgit Aschemann, Wilfried Frei, Martin Ebner, David Röthler, Martina Süssmayer, Lucia Paar
Bitte treten Sie als **GAST** ein (ohne Passwort). Das Webinar wird aufgezeichnet und zeitnah hier bereitgestellt: https://erwachsenenbildung.at/ebmooc/webinare.php

Inhalte

Einführung zum EBmooc

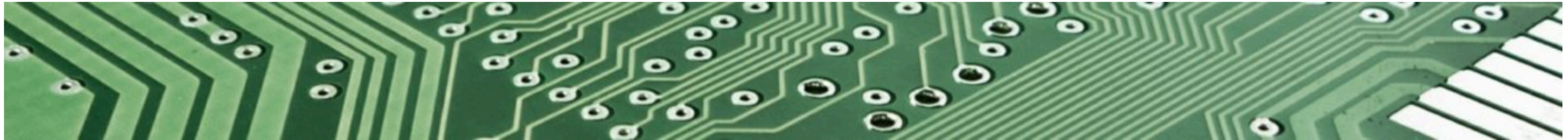https://youtu.be/uutiBrsgNjL
EBmooc

iMooX

OER-MOOCs facilitate access to
education in an innovative way and
enable new
forms of teaching and learning

MOOC

If the content is available as Open Educational Resources, the exchange between different educational situations becomes easy and legal - OER acts as driver

Informatische Grundbildung

Aktivitäten zur Förderung informatischer Bildung

https://learninglab.tugraz.at/informatischegrundbildung/

TU Graz
Graz University of Technology

Slides available at:

http://elearningblog.tugraz.at

Making-Aktivitäten mit Kindern und Jugendlichen

Handbuch zum kreativen digitalen Gestalten

iMooX

Follow me!

twitter

@mebner

EDUCATIONAL TECHNOLOGY

Graz University of Technology

Martin Ebner (Educational Technologist)

Yes, we care :-)

martin.ebner@tugraz.at

http://elearning.tugraz.at