



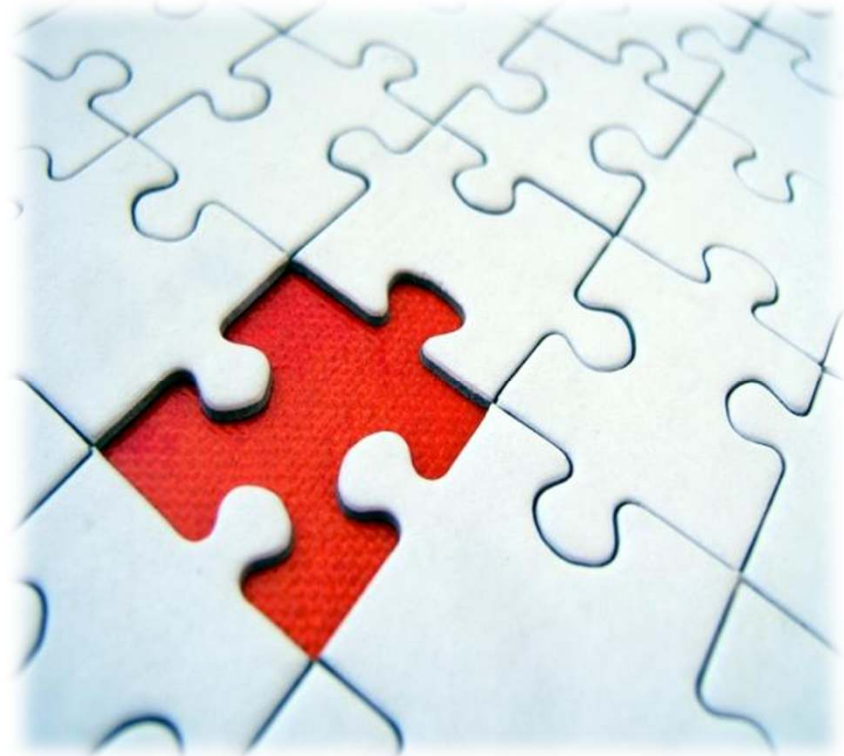
12/05/2014

Learning Analytics

EUNIS ELTF Workshop 28-29th April 2014
Marianne Sheppard, Jisc infoNet

Overview

- » Context
- » Drivers
- » Definitions
- » Trends
- » Impact and benefits
- » Risks
- » Discussion



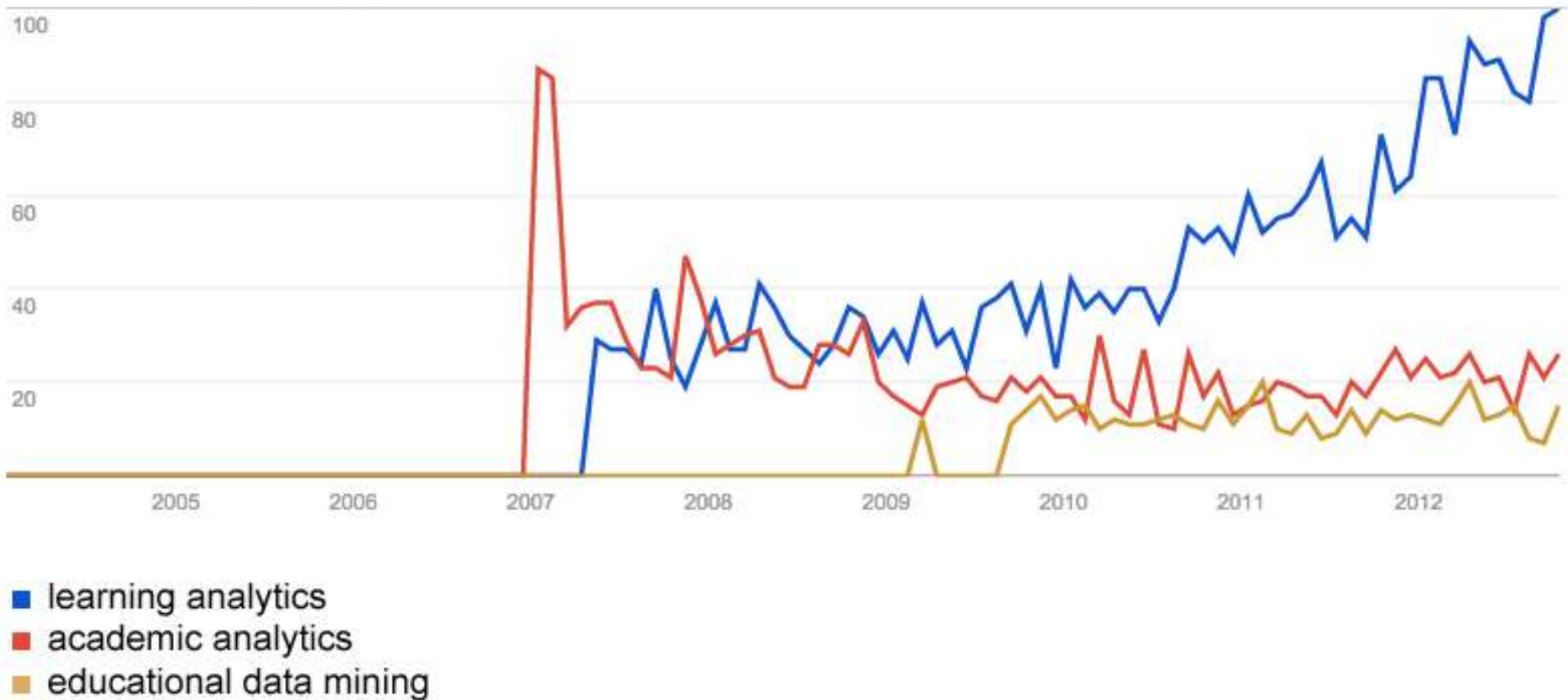
Analytics: the bigger picture

- » Growing trend
- » New opportunities
- » Big Data
- » Business Intelligence (BI)
- » Learning analytics – where does it fit?



Learning analytics - a growing trend

The number 100 represents the peak search volume



What is learning analytics?

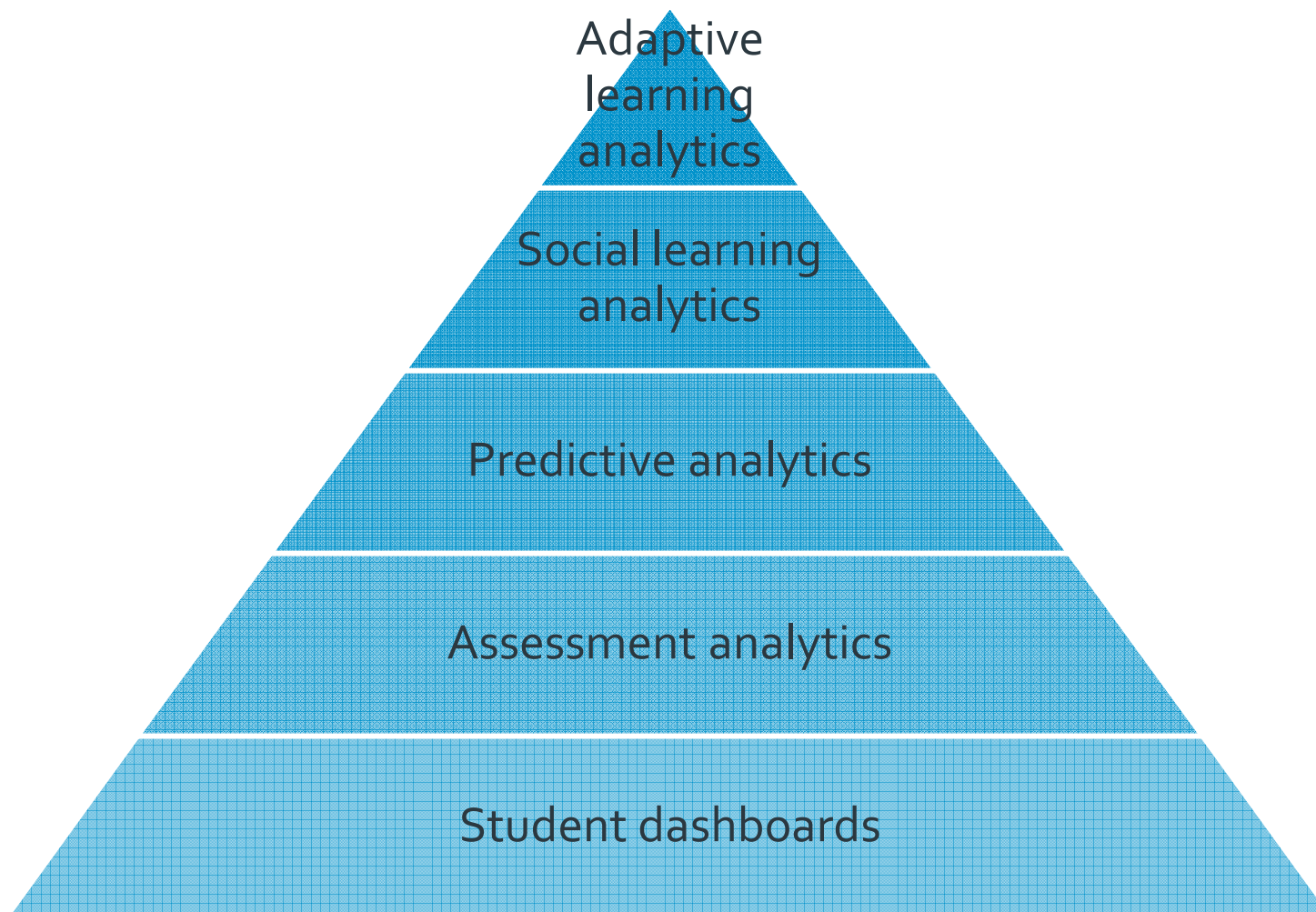
- » Focus on student learning
- » Provides actionable insights into the learning process
- » Support and development ethos
- » Combining static, dynamic and real-time data
- » Types of data: demographic, online activity, log-ins, discussions, assessment data, geo-location etc
- » Stakeholders: governments, institutions, teachers and learners

"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." (LAK, 2011)

Educational analytics

TYPE OF ANALYTICS	LEVEL OR OBJECT OF ANALYSIS	WHO BENEFITS?
Learning Analytics	Course-level: social networks, conceptual development, discourse analysis, “intelligent curriculum”	Learners, faculty
	Departmental: predictive modeling, patterns of success/failure	Learners, faculty
Academic Analytics	Institutional: learner profiles, performance of academics, knowledge flow	Administrators, funders, marketing
	Regional (state/provincial): comparisons between systems	Funders, administrators
	National and International	National governments, education authorities

Learning analytics trends



Student Dashboards



Assessment analytics: Engaging students

- » Using e-submission software
- » Module cohort: English
- » Power of showing data to students – feedback on essay assignment
- » Student-facing workshops
- » Engaging with data – emotional experience
- » Dashboards – emotionally deficient?



Source: University of Huddersfield

Predictive analytics: CourseSignals

- » Analyses individual student performance
- » Aims to reduce risk of poor performance and increase academic success
- » Traffic light colour coding
- » 10% increase in As & Bs, 6.41% decrease in Ds, Fs and withdrawals
- » Improved retention
- » Positive student feedback

Signals

Detailed Report Effort Tracker Help Resource

John Doe
Fall Semester

Course	Int 1	Int 2	Int 3
MATH 101	Red	Yellow	Yellow
ENGL 110	Green	Yellow	Green
CHEM 121	Red	Red	Yellow
STAT 303	Red	Red	Red
IT 247	Green	Yellow	Green

PURDUE
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Social learning analytics

- » Social learning theory
- » Social network analysis (SNA)
- » Discourse analytics
- » Focus on social interactions and impact on/indicators of performance
- » Learning dialogue and dispositions analytics
- » Open University: SocialLearn

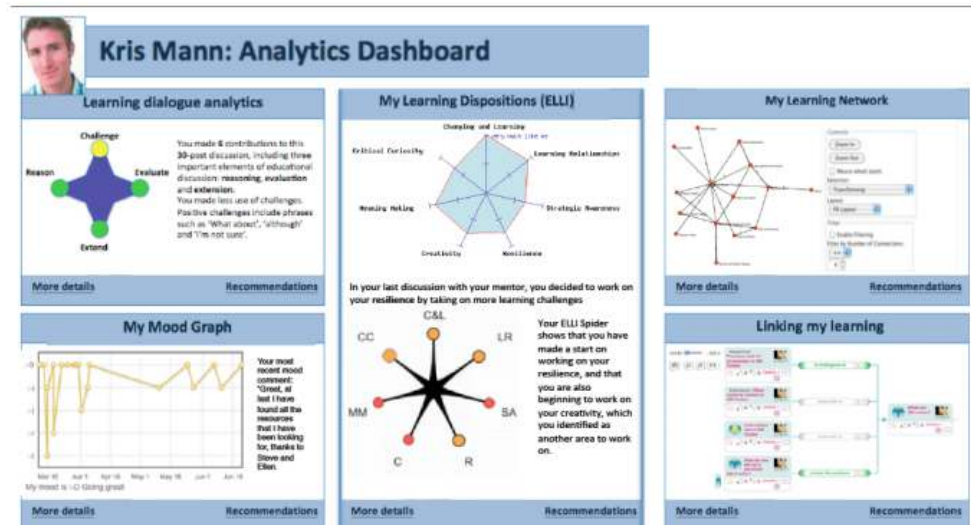
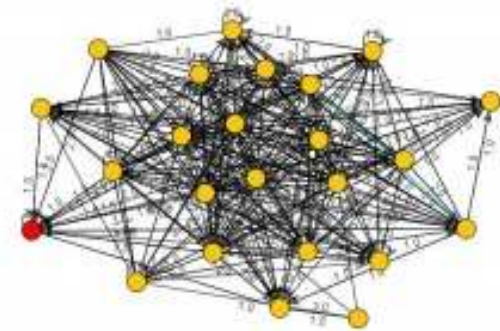


Figure 5: Mock-up of SocialLearn dashboard for an individual learner

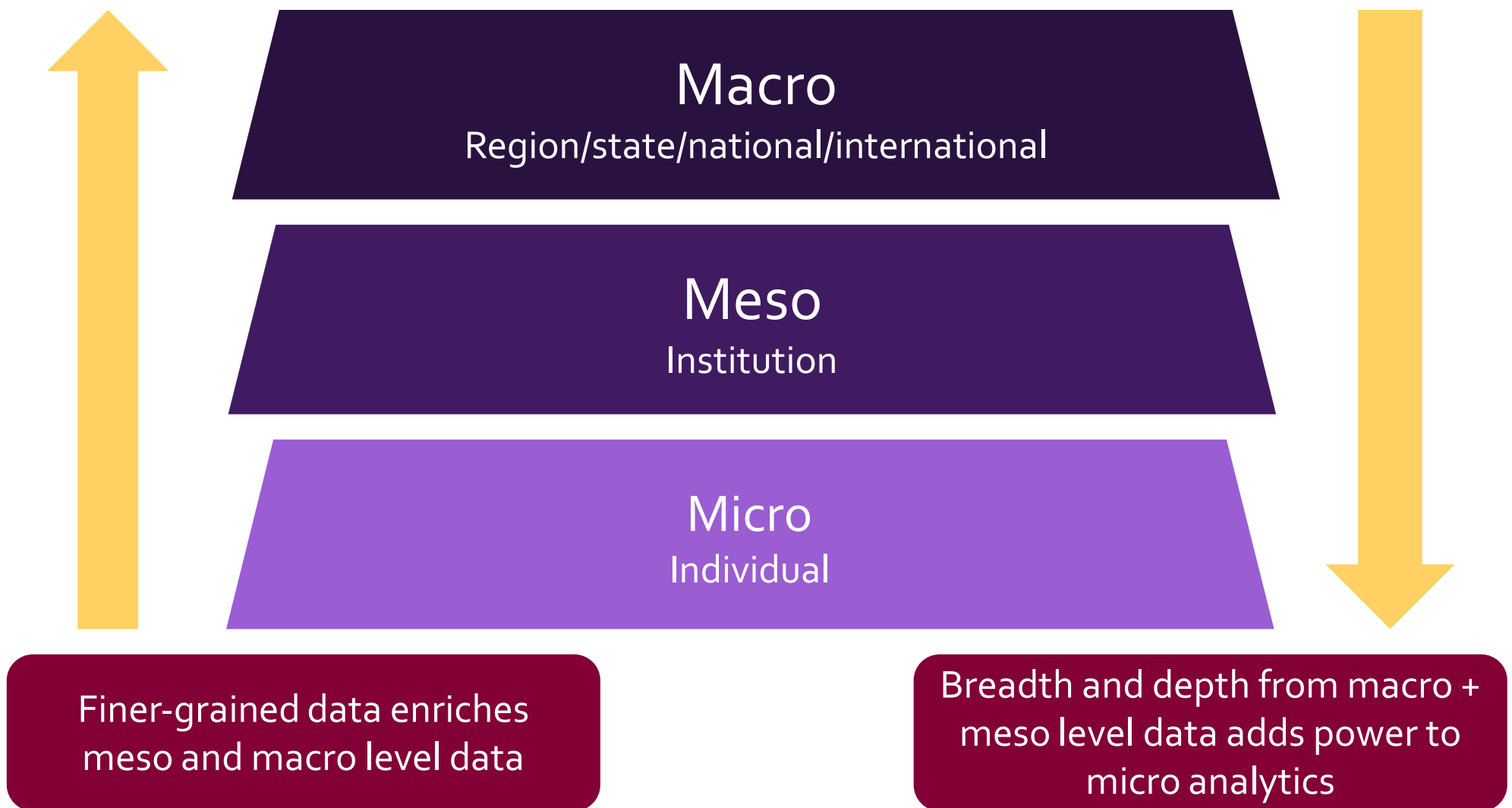
Adaptive learning analytics

- » Cognitive modelling
- » Interactive, real-time
- » Personalised curricula
- » Adaptive presentation of content
- » Intelligent tutoring systems
- » Resource intensive to build
- » Carnegie Mellon Open Learning Initiative



Carnegie Mellon OLN

Impact of learning analytics



Benefits

Individual

- Identify at-risk learners and provide interventions
- Provide learners with insight into their own learning habits and give recommendations for improvement

Institutional

- Improve decision-making and organisational resource allocation
- Tailor course offerings and methods of delivery
- Evaluate teaching performance and support academic development

Sector

- Transform the college/university system, as well as academic models and pedagogical approaches

Risks

- » Leadership v managerialism
- » Capacity/skills and data literacy of users
- » Data quality, technology
- » Data v expertise
- » Ineffectual/inappropriate interventions
- » Big brother approach – ethics
- » Delayed adoption leads to missed opportunities



Factors for successful adoption

"Any wise institution will examine where it wishes to move to pedagogically, and consider if any proposed learning analytics solution will hinder or enhance its pedagogic development."

(Harmelen & Workman 2012)

Discussion

- » What are the potential benefits of learning analytics for your learners and your university?
- » What are the key challenges and issues?
- » What will enable you to develop learning analytics?

Resources

» CETIS Analytics Series

<http://publications.cetis.ac.uk/c/analytics>

» Jisc infoNet Business Intelligence infoKit

www.jiscinfonet.ac.uk/infokits/business-intelligence

» EDUCAUSE resources

www.educause.edu/library/learning-analytics

» SoLAR - Society for Learning Analytics and Research

www.solaresearch.org

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