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From novelty to core: The essential role of education technology

Professor Shane Dawson

Executive Dean: Education Futures

Overview

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- A brief history
- Changing dynamics
- Equivalent?
- Learning analytics within an integrated system

Key Points:

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- Multiple drivers for flexible education
- Technology is only one piece of the puzzle
- Impact in education requires a systems level approach
  - Integrated
  - Purposeful – address a key issue
  - Intention for scale

Brief History

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1800's	Weekly lessons via newspaper
1900's	Distance education – mail correspondence
1970's	Open Uni UK – link with television and radio
1990's	Computer based training
2000's	Intelligent tutoring systems - LMS developments
2008	1st MOOC
2011	1st LAK conf.
2015	Digital credentials – verified assessment
2020	Pivot to online – zoom and teams

Changing Dynamics :

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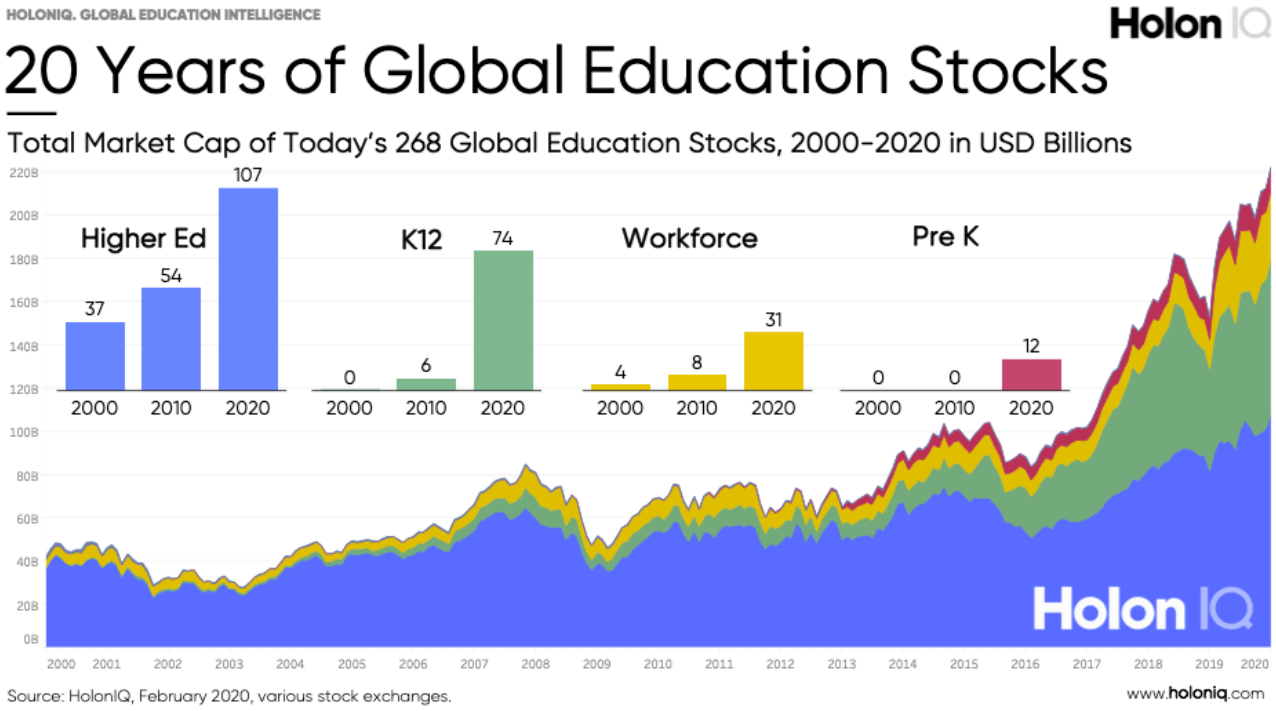
- Fastest growing market is online/ off-campus models
- And – Predictive analytics and education technologies.



Education Technology Market to Reach $404B by 2025

Equivalent?

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- Strong demand for online
- Increased access to education
- No significant difference?

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The Open Learning Initiative:

Measuring the Effectiveness of the OLI Statistics Course in Accelerating Student Learning

Marsha Lovett, Oded Meyer, Candace Thille

Carnegie Mellon University
5000 Forbes Ave. Pittsburgh
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www.cmu.edu

Abstract: The Open Learning Initiative (OLI) is an open educational resources project at Carnegie Mellon University that began in 2002 with a grant from The William and Flora Hewlett Foundation. OLI creates web-based courses that are designed so that students can learn effectively without an instructor. In addition, the courses are often used by instructors to support and complement face-to-face classroom instruction. Our evaluation efforts have investigated OLI courses' effectiveness in both of these instructional modes – stand-alone and hybrid.

This report documents several learning effectiveness studies that were focused on the OLI-Statistics course and conducted during Fall 2005, Spring 2006, and Spring 2007. During the Fall 2005 and Spring 2006 studies, we collected empirical data about the instructional effectiveness of the OLI-Statistics course in stand-alone mode, as compared to traditional instruction. In both of

Lovett, M., Meyer, O. & Thille, C., (2008). JIME - The Open Learning Initiative: Measuring the Effectiveness of the OLI Statistics Course in Accelerating Student Learning. *Journal of Interactive Media in Education*. 2008(1), p.Art. 13. DOI: http://doi.org/10.5334/2008-14

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No significant difference

½ the time – same content to same standards

Lovett, M., Meyer, O. & Thille, C., (2008). JIME - The Open Learning Initiative: Measuring the Effectiveness of the OLI Statistics Course in Accelerating Student Learning. *Journal of Interactive Media in Education*. 2008(1), p.Art. 13. DOI: http://doi.org/10.5334/2008-14

Equivalent?

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- Attrition high – requires far greater learner autonomy
- Effective online learning requires purposeful design
- Alternate teaching models
  - Provision of content online alone is NOT effective teaching and is NOT supporting learning.
- Online learning can be improved through learning analytics

Learning Analytics

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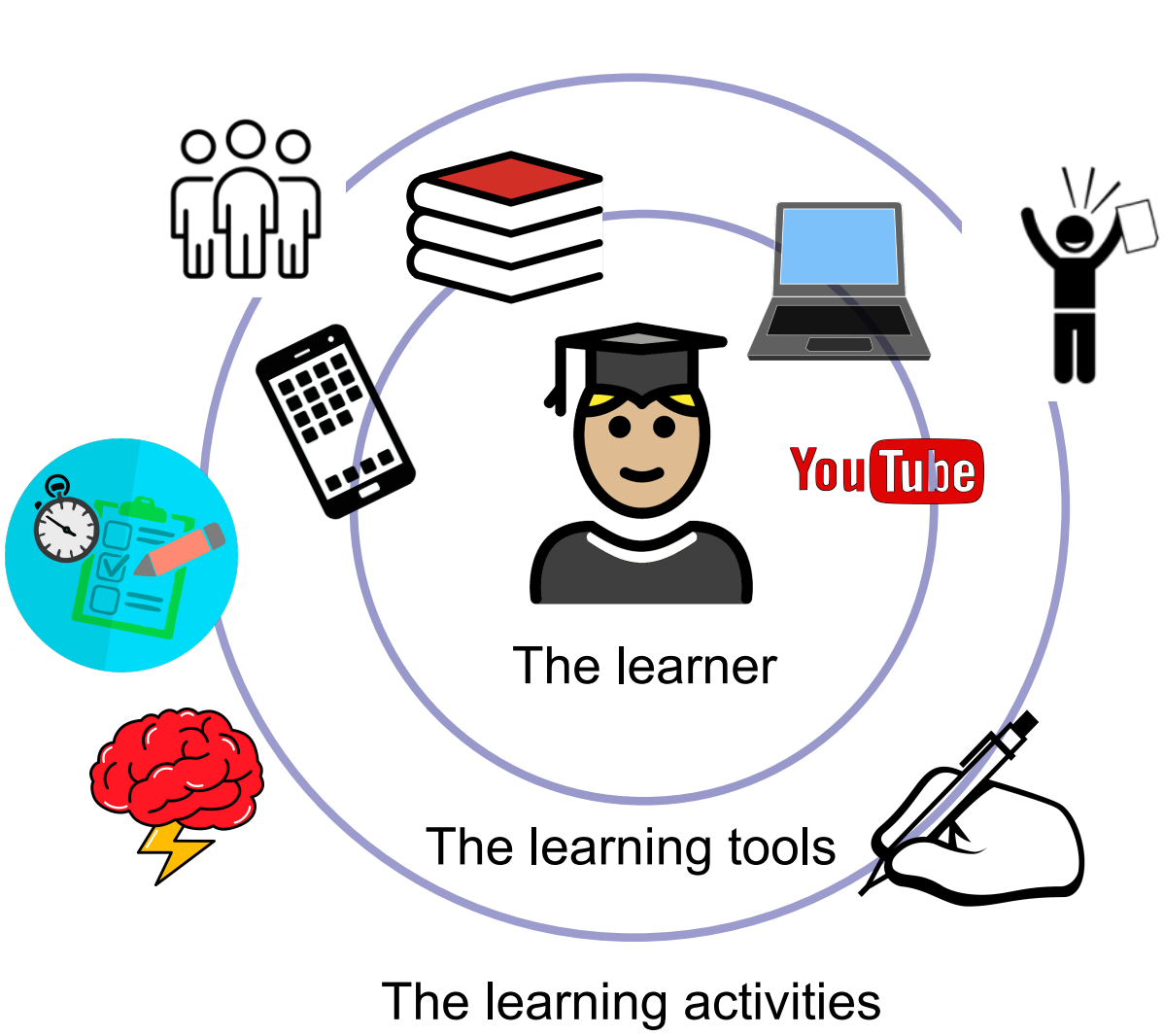

FEEDBACK

Teacher

FEEDBACK

Predictive Analytics

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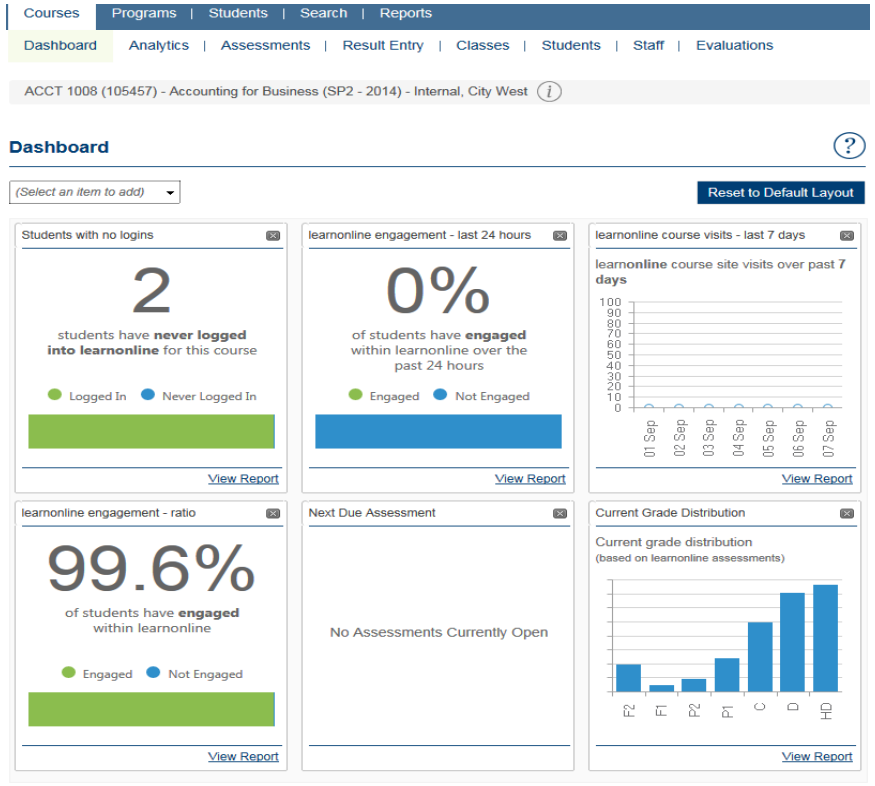
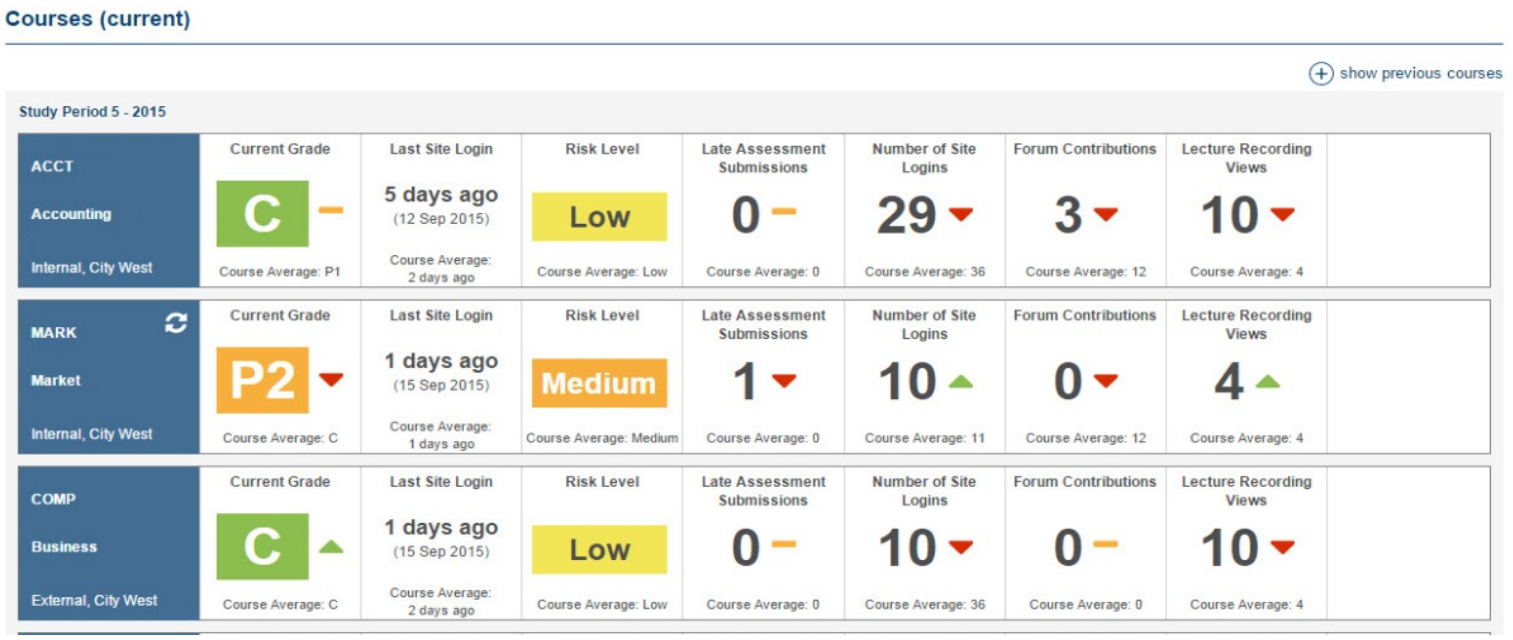
- Early work focused on reports
- Prediction of academic grades/ retention





Predictive Analytics

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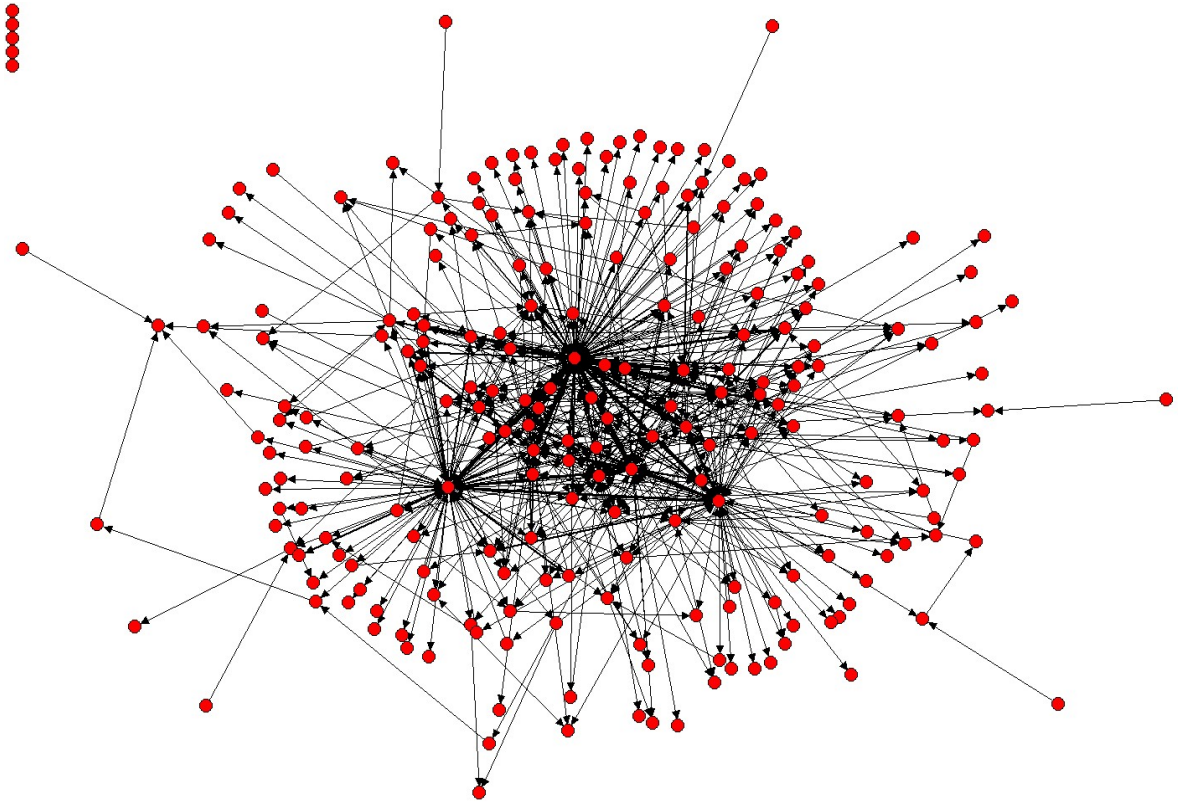
- Peer influence and community

Use of SNA (+ text analysis)

- Creativity
- Sense of community
- Student satisfaction
- Social and cognitive presence
- Student retention



Learning Support

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- Very few examples of large scale adoption and impact
  - Strategic priority
  - Complex to implement LA and alter practice

Learning Support

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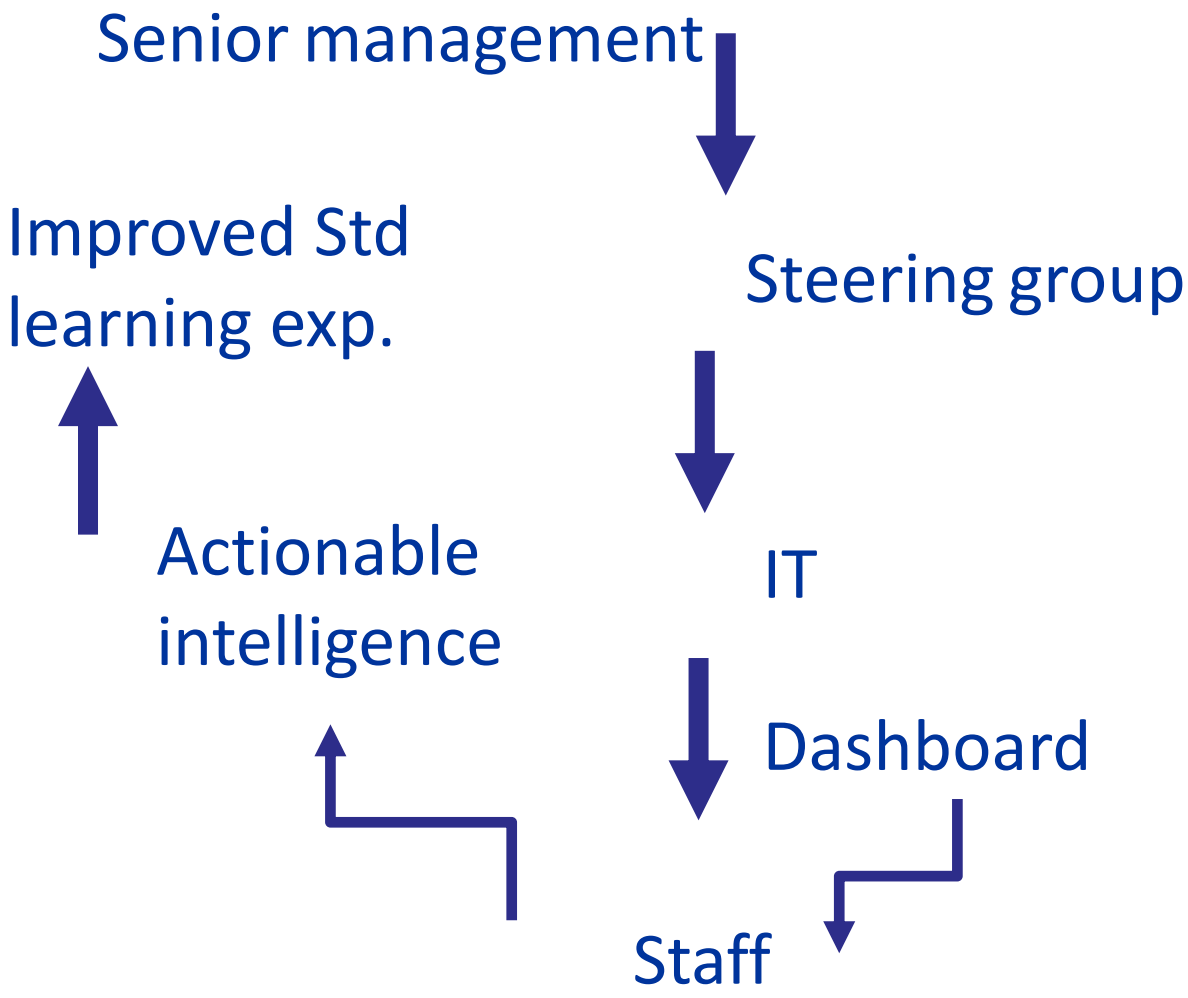
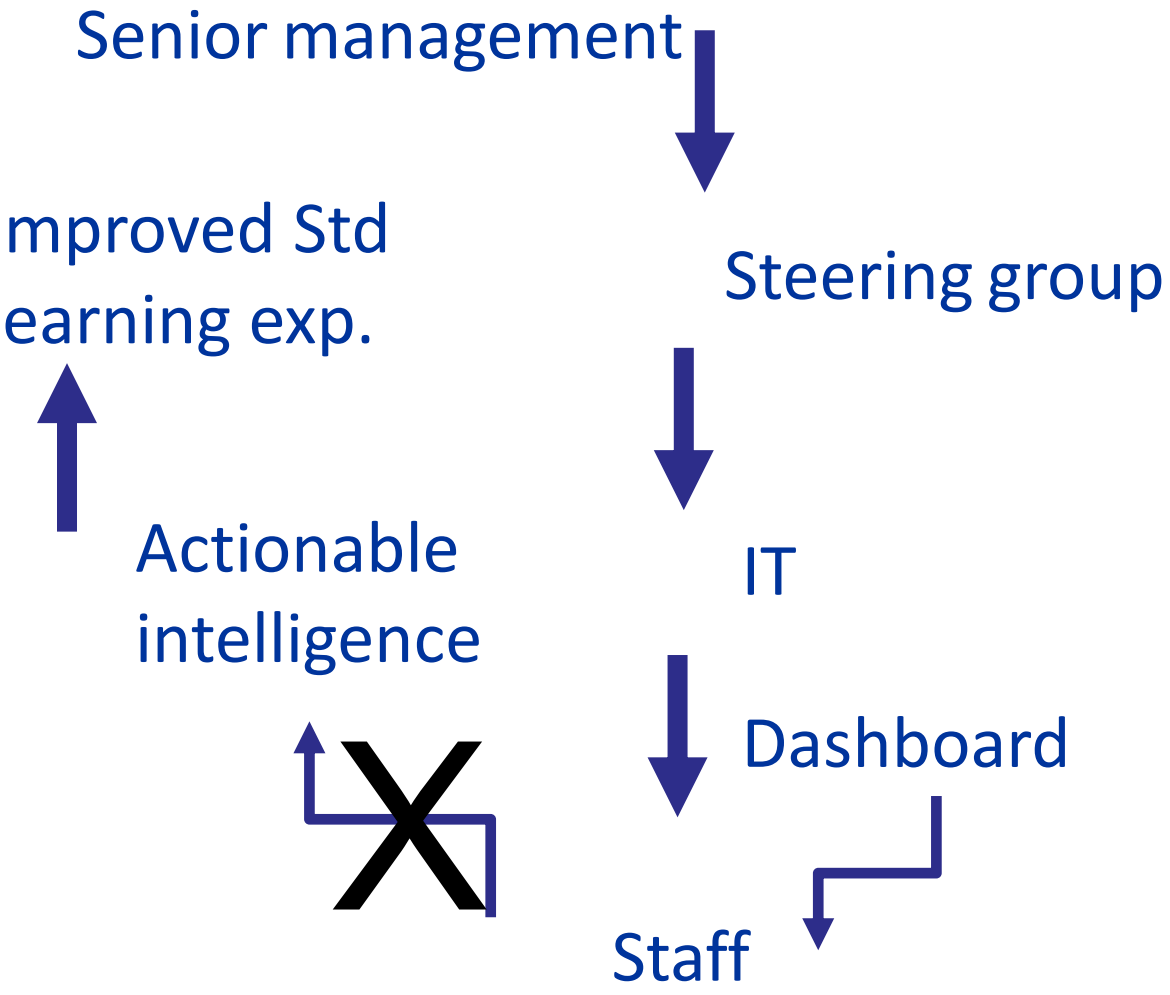


Learning Support

Presentation of data DOES NOT meet staff requirements/ and increases workload



Learning Support

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- Introduction of LA must complement and be adaptive to culture and practices
  - Supporting learning requires ongoing and personalised feedback
  - This is a challenge – how to scale personalisation?

Personalised Feedback

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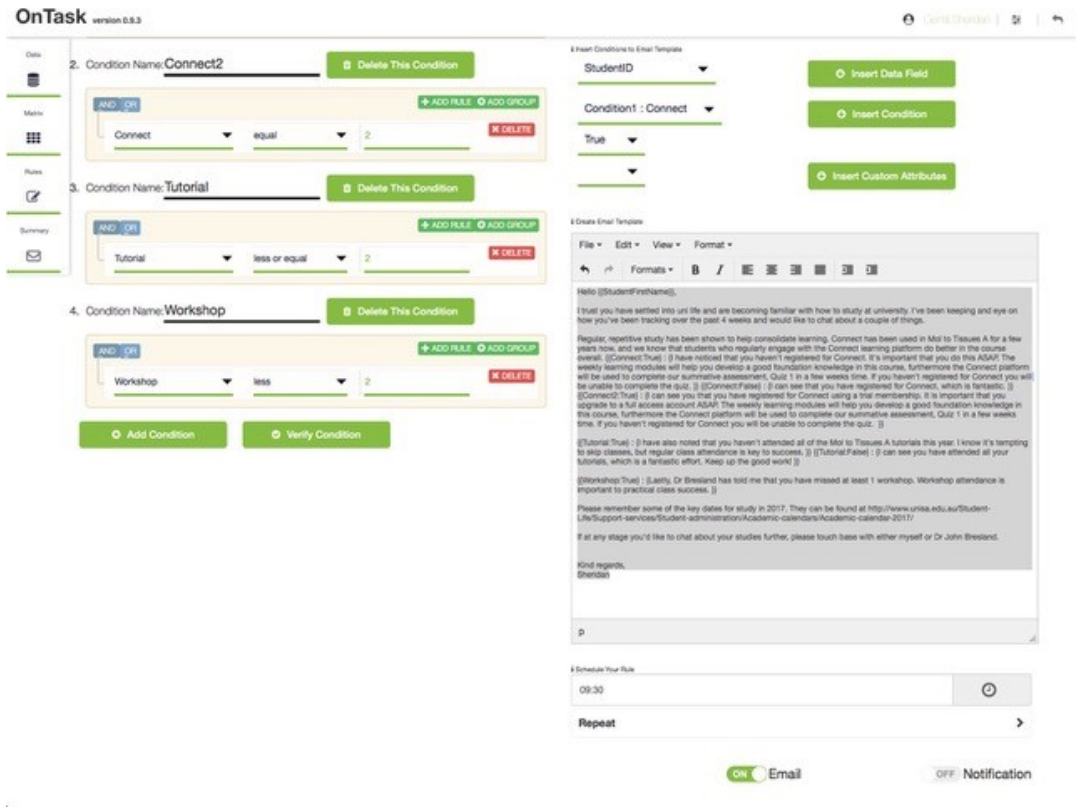
- Teacher remains central
  - Creation of rules and messages
  - Each student receives a different message dependent on their online interactions and outcomes
- Reduced workload and increased feedback and engagement
- Increased academic performance and student satisfaction



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Questions?