



Athabasca University

FACULTY OF SCIENCE & TECHNOLOGY

School of Computing & Information Systems

Education Analytics – How to benefit from educational data?

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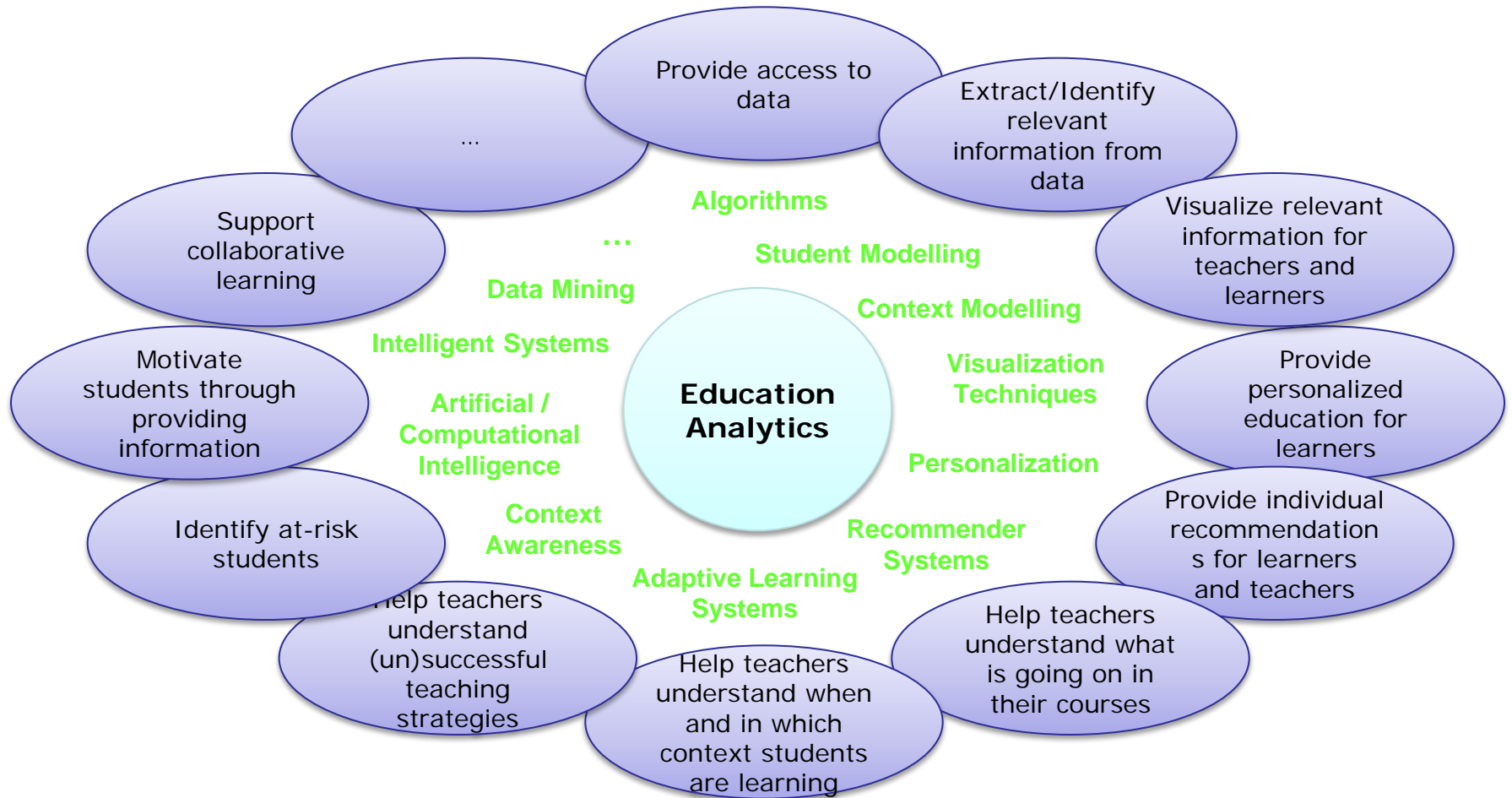
Ming Wu (RA)

How can we make learning systems more adaptive, intelligent and personalized



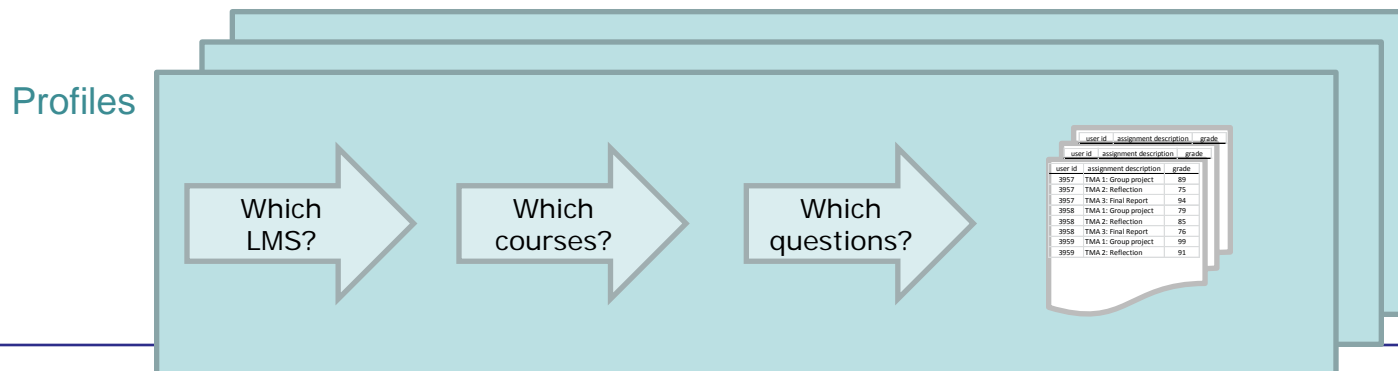
- Intelligent Systems
- Adaptivity and Personalization
- Education Analytics

Benefits of Education Analytics



Providing Access to Data

- We have a lot of data but it is difficult to access/read them
- Academic Analytics Tool (AAT)
 - Provide users with easy access to complex educational log data
 - Allow users to ask “questions” to the data
 - Allow users to start with easy queries and then build upon them
 - Provide possibilities to see/analyse data across courses and departments
 - Help to get better understanding on what students are actually doing in a course
 - Facilitate learning about teaching strategies and learning designs



[Tamra Ross, Jason Bernard]

Extract/Identify relevant information from data

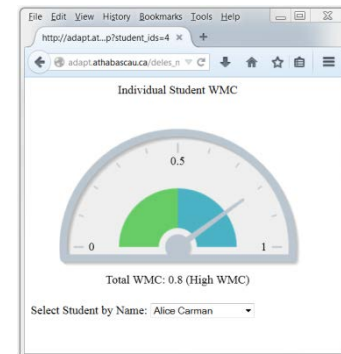
■ Learning Style Identification

- Automatically identifying learning styles from behaviour of students in a course
- Presenting students and teachers with information about a student's learning styles
- Providing students/teachers with explanation on what such learning styles mean, how students with particular learning styles can improve their learning and where they have difficulties



■ Working Memory Capacity (WMC) Identification

- Automatically identifying WMC from behaviour of students in a course
- Presenting students and teachers with information about a student's WMC
- Providing students/teachers with explanation on what such WMC level means, how students with particular WMC levels can improve their learning and where they have difficulties



Support Collaborative Learning

- Working in groups on projects is very important but difficult in an online environment
- ACS – a plugin for learning management systems
 - Monitors students' communications and
 - encourages students to participate in meetings
 - encourages students to actively take part in conversations
 - encourages students who talk a lot to encourage other students to actively take part in conversations
 - Monitors workloads and highlights significant differences
 - Monitors progress and provides feedback on whether tasks are on time
 - Monitors progress and provides feedback on whether the whole project is on time or at risk of failing
 - Visualizes how a group's progress compares to other groups

Group Project

List of Tasks	Group Members	Last Online
+ NEW TASK	eric	Online Now
✓ Task: Find a Research Topic ⚙ For: eric Due: 7 January 2015 Progress: 100%	gary	4/02/15, 10:26
✓ Task: Write a Literature Review ⚙ For: gary Due: 14 January 2015 Progress: 100%	sean	4/02/15, 10:25
Task: Create a System Design ⚙ For: sean Due: 12 February 2015 Progress: 50%	sandra	4/02/15, 10:26
Task: Develop an Implementation ⚙ For: eric Due: 15 February 2015 Progress: 5%	Communication Tools	
Task: Test Implementation ⚙ For: sandra Due: 5 March 2015 Progress: 0%	Group Chat Session	
Task: Write Final Paper ⚙ For: sean Due: 4 April 2015 Progress: 0%	News forum	
	Communication History	
	31 December 2014, 1:58 PM	
	4 February 2015, 10:43 AM	
	+ Import	
Workload Distribution Progress Comparison with other Groups		

Questions



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