

Curriculum Analytics: Concepts, Techniques and Tools

Gain insights into the curriculum

Curriculum analysis unpacks the three education components namely the intended outcomes, content, and the learning activities with a purpose to evaluate how the individual components fit together in terms of consistency and alignment. It allows educators to analyse the strengths and weaknesses of the curricula in terms of all the three components. Furthermore, the analysis aims to justify the curriculum choices and assumptions, and it can be performed at the program level or at a specific course level. In order to achieve these goals, several tasks are identified under the umbrella of curriculum analysis; assess alignment between program level outcomes and course level outcomes, determine whether the outcomes have been achieved, identify the gaps between the outcomes and assessments, analyse competencies acquisition, identify strengths which can be further built upon, study the impact on job opportunities, verify alignment with industry skills requirements, demonstrate the worth of the curriculum to different stakeholders, etc. Traditionally, curriculum analysis has been mostly a manual process which is tedious and painstaking work. However, the emergence of analytics techniques that leverages vast amounts of data sets to gain insights from the data which is both structured and unstructured has opened new possibilities for analysing the curriculum. The main objective of curriculum analytics is to use a data driven approach to gain insights into the effectiveness of the curriculum and thus improve the overall teaching and learning experience. This new capability, analytics technology, plays a major role to automate many stages and tasks of the curriculum analysis process.

This workshop is aligned with the theme-based conference, ICCE 2016 Sub-Conference on Advanced Learning Technologies (ALT), Learning Analytics and Digital Infrastructure. The workshop will introduce the concept of curriculum analysis and curriculum analytics, key components of a curriculum analytics framework, and application of curriculum analytics at the individual course or program level. The workshop will also cover analytics techniques and tools relevant to curriculum analytics such as clustering, data visualization, and text analytics. Additionally, we will look at emerging and likely future trends in this field. The workshop will include examples and exercises for participants' practice and discussion.

Duration of Workshop

Half-day

Key Learning Outcomes

On completing this workshop, you will be able to

- Explain the concept of curriculum analytics and the components of the curriculum analytics framework
- Gain insights into how curriculum analytics can be applied to enhance teaching and learning
- Understand where and how curriculum analytics can be applied in your school
- Apply some of the techniques and tools to curriculum analytics

Workshop Facilitators

	<p>Prof Venky Shankararaman Professor of Information Systems (Education) Associate Dean (Education) School of Information Systems, Singapore Management University venky@smu.edu.sg</p>
<p>Venky Shankararaman is a Professor of Information Systems (Education) and Associate Dean (Education) at the School of Information Systems, Singapore Management University. He holds a PhD in Engineering from the University of Strathclyde, Glasgow, UK. His current areas of specialization include business process management and analytics, enterprise systems architecture and integration, and education pedagogy. He has over 25 years of experience in the IT industry in various capacities as a researcher, academic faculty member, IT professional and industry consultant. Venky has designed and delivered professional courses for government and industry in areas such as business process management and analytics, enterprise architecture, technical architecture, and enterprise integration. He has published over 65 papers in academic journals and conferences.</p>	
	<p>Prof Swapna Gottipati Assistant Professor of Information Systems (Education) School of Information Systems, Singapore Management University swapnag@smu.edu.sg</p>
<p>Swapna Gottipati is an Assistant Professor of Information Systems (Education) at the School of Information Systems, Singapore Management University. Her research interests include text analytics, natural language processing, information extraction, opinion mining, machine learning and social networking. Her main focus is to enhance data mining models while she applies her research findings to software, education, security and mobile applications. Prior to joining SMU, she worked as a consultant for banking, financial, health and mobile projects, where she designed, developed and supported various software systems.</p>	