Alignment between Assessment and Learning analytics

25th Feb 2021

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Second line

NEW METRICS FOR SUCCESS

THE UNIVERSITY OF MELBOURNE

Assessment, innovation & learning analytics

Block chain
Digital testamers
Profiles

REPORTING & CREDENTIALING

ITEMS & TASK DEVELOPMENT

Item generators
Simulations
Agents

Stylometry
Identity checkers

INTEGRITY MONITORING

WHAT'S ASSESSED

FEEDBACK ON LEARNING

HOW IT'S ASSESSED

AUTOMATED SCORING

Text analysis
MC
Short answer

Wide range of metrics
Advisor apps
Chatbots
Explainer apps
Dashboards

ADAPTIVE TESTING

WIDER RANGE OF EVIDENCE

Process data
Big data
Videos
Responses to agents
Beautiful portfolios

ADMINISTRATIVE EFFICIENCY

Peer assessment, self assessment
LMS systems
Remote Proctoring

Assessment innovation & analytics

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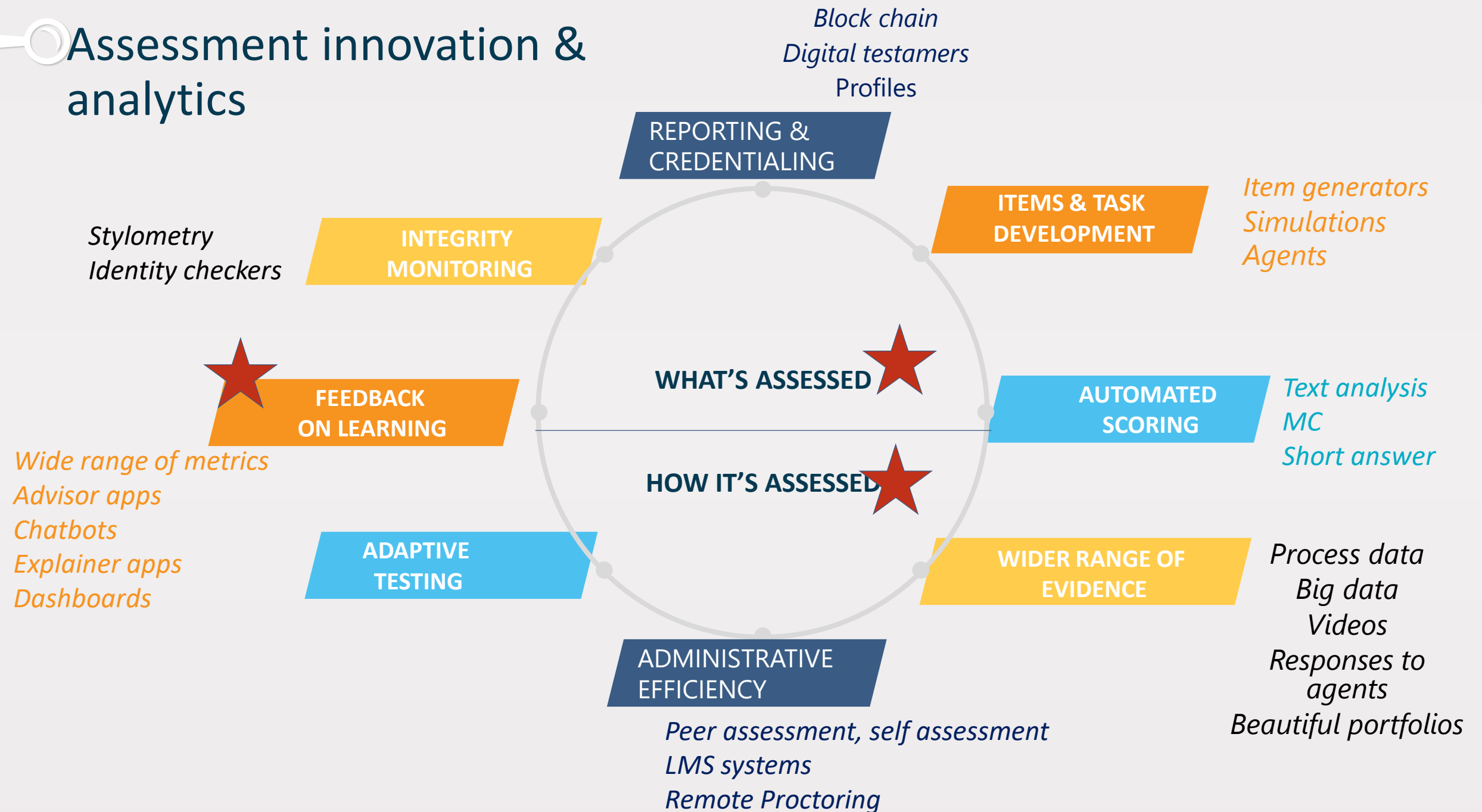**HOW IT'S ASSESSED**

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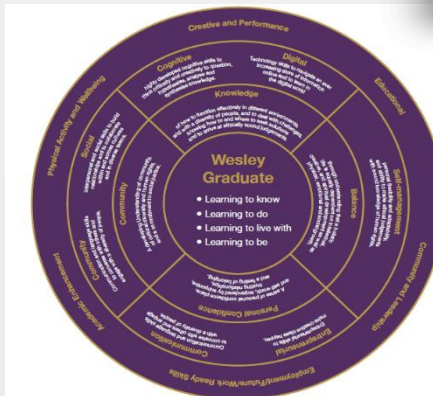LMS systems
Remote Proctoring

'First-movers'

- Define 'success' of learners broadly, encompassing the whole person (schools) or deep competence (disciplines & professions)

- Allow passion or interest driven learning,, context-specific, non-standardised approaches to teaching and assessment

- Want to see changes to the currency of recognition, and metrics for accountability, to sustain reforms

- Seek to 're-form', not just to continuously improve the organisation of learning and teaching

- Want it all scalable and practical

1. Contemporary ambitions for learning

Learner agency

Capacity to chart their own learning towards expertise in a chosen path, taking risks, investing in learning to attain their purposes, harnessing interests, and taking responsibility for the results attained

Connectivity

Capacity to create and sustain valuable connections to support induction into wider communities in which they will participate and contribute as workers, community members and citizens

Knowledge and knowhow

Mastery of the terminology, concepts, theories, structures and processes that make up the disciplines, vocations and cultural domains and application of knowledge through building, designing, providing services, performing, growing or creating things of value

Capacity to thrive at school and beyond

Learning staples

Including critical analysis and evaluation, teamwork and collaboration, problem solving, creativity, capacity for resilience and self-care, intercultural capability, and entrepreneurial skill

Basic literacies

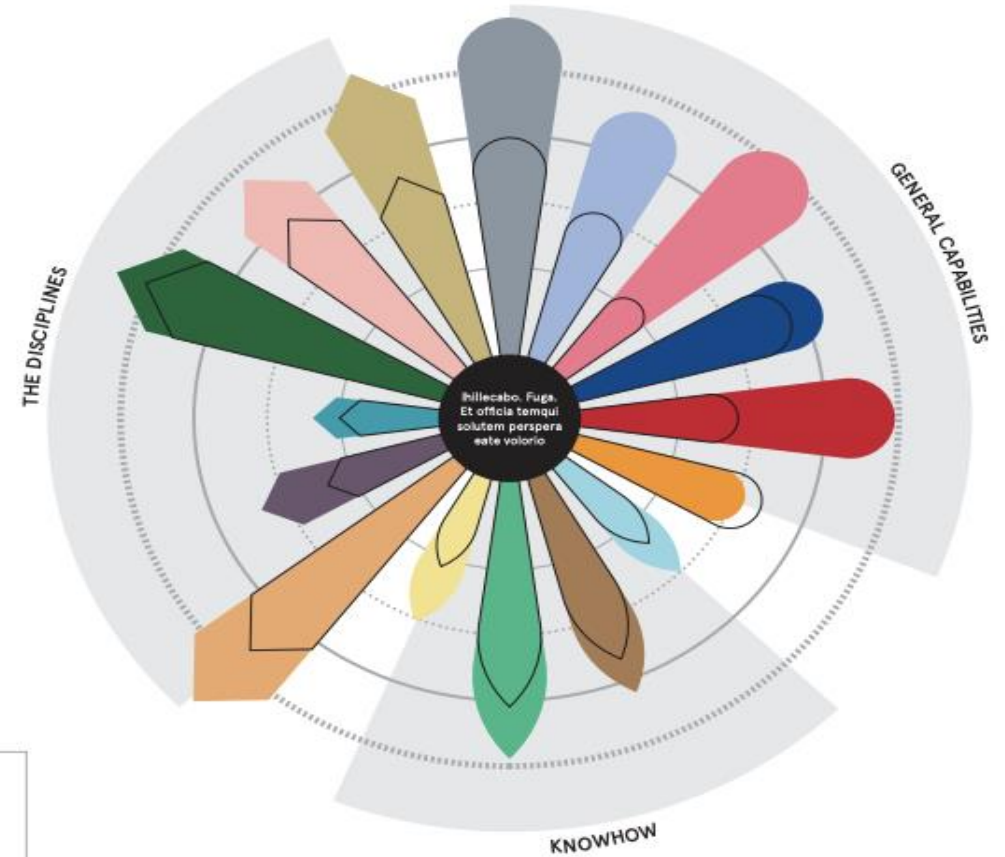Literacy, numeracy, and the digital literacies

Learning ambitions frameworks
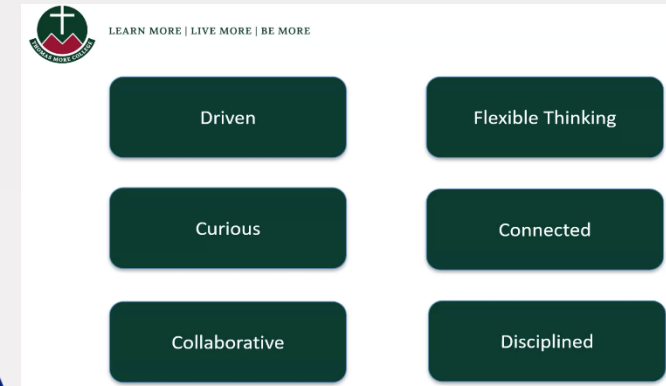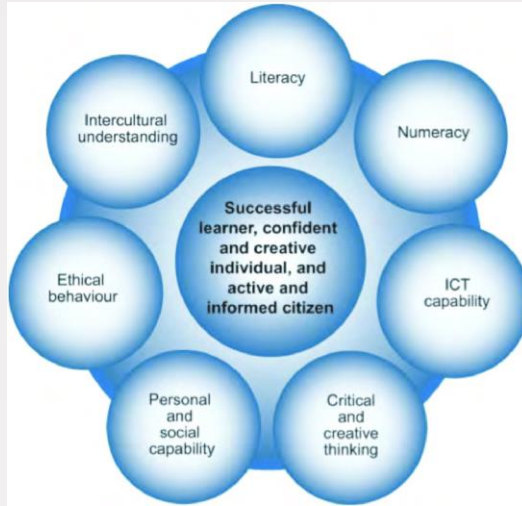
2. New kinds of credentials and reports: standards-referenced profiling

Learner Profile©

Name: First Name Second Name
School: School Name
Class: Class Name
Date: 00/00/0000

GENERAL CAPABILITIES

THE DISCIPLINES

Ihillecabo. Fuga.
Et officia temqui
solutem perspera
eate volorio

KNOWHOW

Level 4
Level 3
Level 2
Level 1

Statewide Average

General Capabilities
- Communication
- Cooperation & enterprise skills
- Citizenship, ethics & morality
- Critical & creative thinking
- Literacy
- Numeracy

Knowhow
- Knowing how to learn
- Entrepreneurialism
- Technology & design
- Health & wellbeing

The Disciplines
- The sciences
- Humanities & social sciences
- The arts
- Mathematics
- English
- Languages

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3. Assessment of complexity: not just adding things up

Performance in a complex domain arises from the *integration* of knowledge, knowhow, attitudes, values and beliefs: a uni-dimensional scale.. It's the *integration* we are after, not the addition

3. Good quality scales: qualitative, not quantitive shifts

Level 1 Reader	Level 2 Consumer	Level 3 Self-regulator	Level 4 Collab-orator	Level 5 Reciprocal teacher

Consumes content from teaching staff, seeks generic knowledge

Independent learner, seeks expertise in a domain, systematic, persistent, self-evaluates, reflective, practices, uses automated teaching agents, monitors peers, may share

Collaborative learner, seeks practical wisdom in a domain, wide attention span, engaged, dialogic, risk-taker, independent-minded, critical consumer, evaluates peer input, seeks other perspectives, produces, writes, creates, comments, teaches, supports & mentors others

virtually

anything is possible

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  6                                        |                                              LEVEL 5                    |
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                                           |                                                                         |
  5                                      X|                                                                          |
                                         X|                                                                          |
                                         X|10.4                                                                      |
  4                                      X|29                                                                        |
                                         X|26 27                                                                     |
                                       XXX|23                                                                        |
  3                                    XXX|28 32 35                                                                  |
                                       XXX|8.3                                                                       |
                                      XXXX|14.2 22 58                                                                |
  2                                  XXXXX|18 20 30 31 59.2                                                          |
                                  XXXXXXX|9.3 10.3 17.2 19 21                                   LEVEL 4
                                  XXXXXXX|15.3 24 52                                                                 |
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  0                    XXXXXXXXXXXXXXXXX|8.2 57.2                                                                    |
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 -2                 XXXXXXXXXXXXXXXXXXX|13 15.1                                                                      |
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**Dominant paradigm
(at its best)**

Assessment of individual mentation*

using common, invigilated standard performance tasks

freed from purpose, personal interest, language, social and cultural context

uncomplicated by real-world conditions

scored to remove individual judgements by assessors

to position the learner

on a numerical scale

to separate people by degree of proficiency

or to select candidates for next steps.

Frontier paradigm

Assessment of complex competencies

By gathering and analysing diverse evidence

(what learners do, say, make or write)

during complex authentic performances

embedded with purpose, personal interest, language, social and cultural context

to support a judgment

referenced to agreed standards

trusted by those concerned

to position the learner

on a scale of competence

from less expert to more

showing what learners know & can do & who they are

and what they need to learn next

to guide further learning

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Plausibility checks

1. What's measured is what's intended?

2. Higher score mean greater proficiency?

3. Learning represented as change?

4. Engagement is used as a proxy for proficiency?

5. Feedback is about actual learning?

6. More data: is it better?

7. High correlations are represented as good?

8. Normal distributions should not be normal

Depth/competence vs recall/comprehension

$S_{Total} = S_{Sought} + S_{Irrelevant} + Error$

Learning = growth, development of proficiency

Proxies can drive the wrong behaviour5.

Only the 'right feedback is good"

Best = the right data, single scale

High correlations: redundancy, lack of impact

Good teaching destroys normal curves
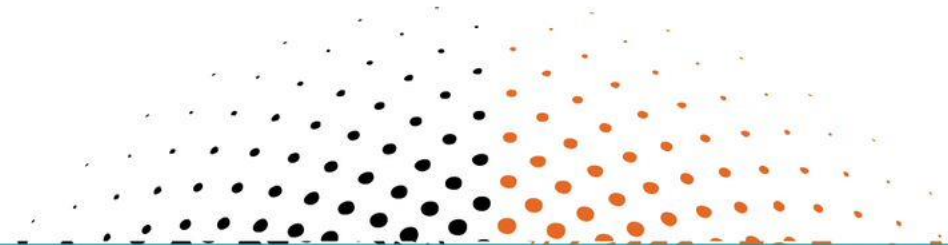
Key frontiers:

How to generate and represent warrantable assessments of complex competencies

Reliable and valid assessment of complex competencies (low error, right learning)

Combining different kinds of evidence to capture proficiency

Representing this kind of learning on scales that demonstrate qualitative shifts

Supporting the scalable application of human judgment

Establishing standards inherent in complex performances and products

Context responsiveness while retaining validity and reliability

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Thank you