



WELCOME TO THE IEA CONFERENCE 2019

EDUCATING FOR THE FUTURE



ASSESSING COMPLEX COMPETENCIES

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Directions for assessment, recognition and warranting of learning in the era of general capabilities and complex competencies

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Contemporary curriculum narrative

$$= \sum (K_{MRR} + K_{Depth} + Skills_{GenCaps} + Skills_{MetaCog} + KnowHow + AVB)$$



1. Knowledge: recitation, rote learning and recall
2. Knowledge: cognitive load and depth
3. Skills: general capabilities or 21st C skills
4. Skills: metacognitive: knowing how to learn, self regulation, life long learning skills
5. AVB: attitudes, values beliefs.
6. Know-how: being able to DO something

1. General capabilities and complex competencies are embedded in our curriculum aspiration, and are here to stay.

Not there yet

Teaching repertoire

- *Project based*
- *Inquiry based*
- *Collaborative learning*
- *Peer learning*
- *Ecosystems*
- *Teacher as coach*
- *Work-place based learning*
- *Internships*

2. Teaching GC and CC demands much of teachers and school leaders: not there yet.



Assessment as lever

3. “Unless assessed, it won’t be learned....
if assessed, it will be learned.”

Corollary: Good assessment is a great lever for change...



Assessment and recognition of complex competencies

...a process

of gathering evidence about a student
(what learners say, do, make or write)
in a valued area of learning

to support a judgment

about the position of a learner

on a scale of competence

from less expert to more expert

showing what they know and can do

and what they need to learn next

with a sufficient degree of confidence

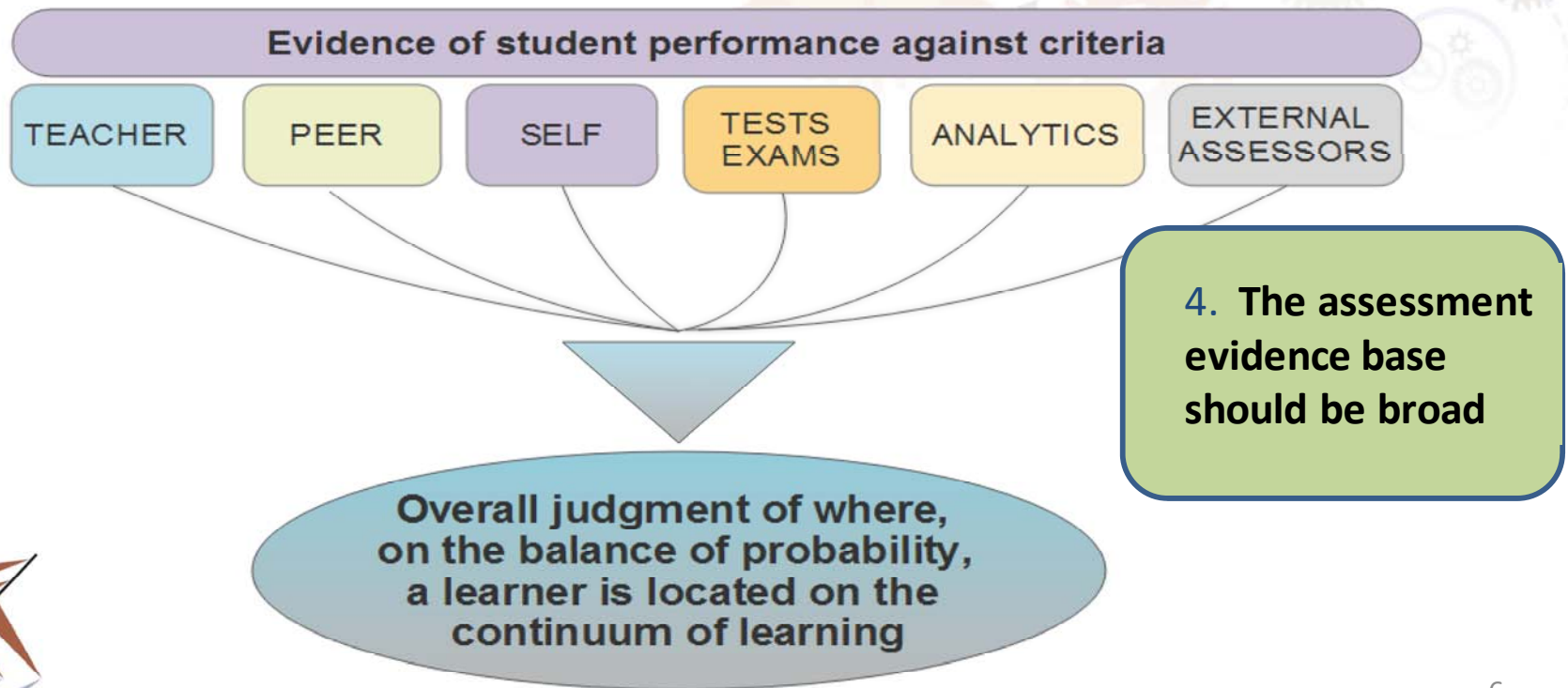
to support action for learning and teaching

and allow recognition and reporting of the level of learner attainment

that people trust



What counts as evidence



How to recognize learning

5. Micro-credentials add to the narrative and have promise for managing GC and CC

Give credit where credit is due.



Micro-credentialing

- *An Ecosystem of stakeholders*

- *A User of the credentials*
- *An Earner group (learner group)*
- *An Assessor/provider*
- *An Issuer/warrantor*
- *Other stakeholders*

- *The micro-credential object*

- *a simple graphical image*
- *digital metadata, such as the criteria, standards, and assessment required for credentialing, expiry dates, where and when the earned, when, issued, used, viewed, liked etc*
- *evidentiary base for each learner: portfolios, videos, essays, and so on*

- *Supporting requirements*

- *Competency definition, exemplars, standards, criteria*
- *Management of evidence collection/ assessments from multiple assessors/sources: tools, forms, processes*
- *Moderation, calibration, synthesis, validation*
- *Issuance of credentials*



Necessary for teacher sanity: to support learning differentiation; management of progressions and rubrics; management of evidence from peers, self and expert judgment and feedback, tests; digital credentialing; machine marking and machine assisted marking; automated customised feedback

6. Smart technology is a necessary pre-requisite



SMART
TECHNOLOGY

Approaches to organising

- Mobilise the co-curriculum
 - Leadership programs
 - Clubs
- Supplement/bypass existing programs
 - Devise other options (UniMelb)
 - Research Projects in the VCE/IB/SACE; Singapore
- Integrate into current programs and reform teaching
 - e.g. VCAA formative assessment approach
 - KSA CBE project Yr 4 Science
- Re-conceptualise the organisation of learning
 - Big Picture Education

7. There are different degrees of ambition for change reflected in current approaches to GC/CC

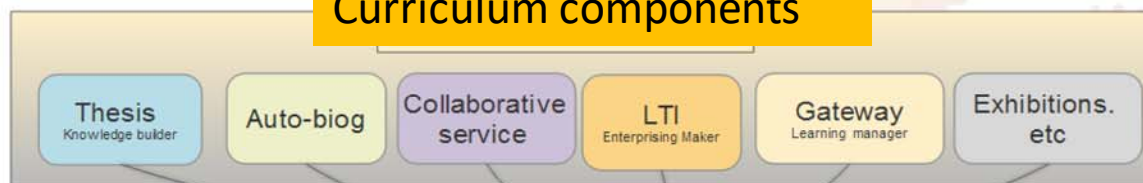


ARTS	ENGLISH	LANGUAGES	BUSINESS STUDIES	HUMANITIES	SCIENCE & TECHNOLOGY	MATHEMATICS	PHYSICAL EDUCATION
Studio Arts	English	Chinese SL/SLA	Accounting	Geography	Biology	Further Mathematics	Physical Education
Visual Communication Design	ENGLISH/EAL	French	Business Management	Year 12 Global Politics	Chemistry	Mathematical Methods CAS	
Theatre Arts	Literature	German	Economics	Year 12 History of Revolutions	Physics	Specialist Mathematics	
Music Performance		Japanese SL	Legal Studies	Year 11 20th Century History	Agriculture & Horticulture		
Music Investigation				Psychology	Product Design Technology (Materials & Textiles)		

FOR INFORMATION ABOUT ALL THE VCE STUDIES OFFERED AT GGS, PLEASE CONTACT THE VCE CO-ORDINATOR – MR ANDREW BORTHWICK



Curriculum components



Judgment of the level attained in each micro-credential is based on performance against underlying competency-based progressions of the Big Picture 'big learning ideas', referenced to AQF levels, mapped to each qual.

Big learning ideas which underlie credentials

e.g @ Knowledge building & academic depth; @ Leadership;
@ Teamwork & collaboration; @ Communication, presentation,
representation; @ Organisational navigation & development;
@ Goal setting, planning & execution; @ Quantitative thinking;
@ Personal & professional development; @ Enterprise

Need new systems

8. Current senior secondary certification, and subsequent selection and recruitment systems are becoming frayed

Schools and other organisations are moving

- **not supported by formal structures**
- **market driven**
- **developing in ways that may exacerbate inequality**
- **in ways that may not be comparable and trusted**

STATEMENT OF RESULTS

Smith, Joseph '17

Parents: Scott and Gina Smith
Student Residence Address & Phone:
1234 Cleveland Avenue
Cleveland, OH 44108
(555) 555-5555

Date of Birth: 10/11/1998
Entered:
Today's Date: 1/16/2017
Status: Current Student
Sex: Male



Hawken School
CEE Code: 361262
12456 County Line Road, PO. Box 8002
Gates Mills, Ohio 44040-8002
(440) 423-2916, fax (440) 423-2994

Featured Credits:

- 7b** Foster integrity, honesty, fairness and respect
- 3b** Lead through influence
- 3c** Build trust, resolve conflicts, and provide support for others
- 3g** Coordinate tasks, manage groups, delegate responsibilities
- 3h** Implement decisions and meet goals
- 8e** Persistence

Earned Credits:

- 1 Analytical and Creative Thinking**
 - a. Identify, manage and address complex problems
 - b. Detect bias, and distinguish between reliable and unsound information
 - c. Use multimedia resources to communicate ideas effectively in a variety of forms
 - d. Master and use higher-level mathematics
 - e. Understand traditional and emerging topics in math, science, and technology, environmental sciences, robotics, fractals, cellular automata, nanotechnology, and biotechnology
- 2 Digital and Quantitative Literacy:**
 - a. Understand, use, and apply digital technologies
 - b. Create digital knowledge and media
 - c. Use multimedia resources to communicate ideas effectively in a variety of forms
 - d. Master and use higher-level mathematics
 - e. Understand traditional and emerging topics in math, science, and technology, environmental sciences, robotics, fractals, cellular automata, nanotechnology, and biotechnology
- 3 Complex Communication—Oral and Written**
 - a. Understand and express ideas in two or more languages
 - b. Listen attentively
 - c. Speak effectively
- 4 Leadership and Teamwork:**
 - a. Initiate new ideas
 - b. Lead through influence
 - c. Build trust, resolve conflicts, and provide support for others
 - d. Facilitate group discussions, forge consensus, and negotiate outcomes
 - e. Enlist help
 - f. Coordinate tasks, manage groups, and delegate responsibilities
 - g. Implement decisions and meet goals
 - h. Share the credit
- 5 Global Perspective**
 - a. Develop open-mindedness, particularly regarding the values, traditions of others
 - b. Understand non-western history, politics, religion and culture
 - c. Develop facility with one or more international languages
 - d. Use technology to connect with people and events globally
 - e. Develop social and intellectual skills to navigate effectively across cultures
 - f. Use 21st century skills to understand and address global issues
 - g. Learn from, and work collaboratively with, individuals from diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue
 - h. Leverage social and cultural differences to create new ideas and achieve success
- 6 Adaptability, Initiative, and Risk-Taking**
 - a. Develop flexibility, agility, and adaptability
 - b. Bring a sense of courage to unfamiliar situations
 - c. Work effectively in a climate of ambiguity and changing priorities
 - d. Develop entrepreneurial literacy
- 7 Integrity and Ethical Decision-Making**
 - a. Sustain an empathetic and compassionate outlook
 - b. Foster integrity, honesty, fairness and respect
 - c. Exhibit moral courage in confronting unjust situations
 - d. Act responsibly, with the interests and well-being of the larger community in mind
 - e. Develop a fundamental understanding of emerging ethical issues and dilemmas regarding new media and technologies
- 8 Habits of Mind**
 - a. Conscientiousness
 - b. Creativity
 - c. Love of Learning/Curiosity
 - d. Resilience
 - e. Persistence
 - f. Self-Efficacy
 - g. Stress Management
 - h. Time Management

Digital transcript: hawken.edu/joseph.smith
access code: 2f371AX4LT

SIGNATURE OF SCHOOL OFFICIAL



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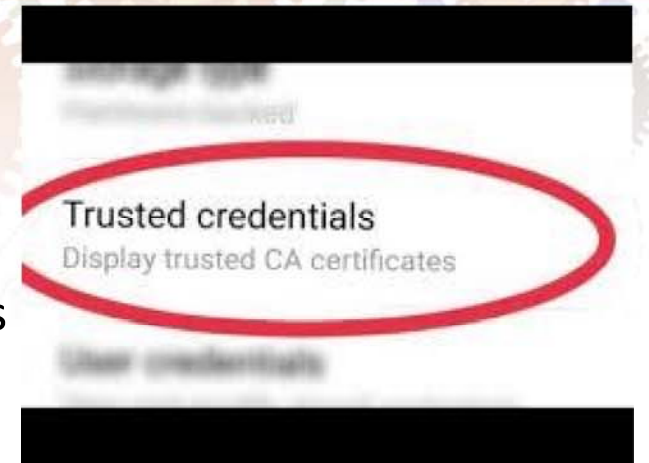
Available Credits:

- 1 Analytical and Creative Thinking**
 - a. Identify, manage and address complex problems
 - b. Detect bias, and distinguish between reliable and unsound information
 - c. Control information overload
 - d. Formulate meaningful questions
 - e. Analyze and create ideas and knowledge
 - f. Use trial and error; devise and test solutions to problems
 - g. Imagine alternatives
 - h. Develop cross-disciplinary knowledge and perspectives
 - i. Engage in sustained reasoning
 - j. Synthesize and adapt
 - k. Solve new problems that don't have rule-based solutions
 - l. Use knowledge and creativity to solve complex "real-world" problems
- 2 Digital and Quantitative Literacy:**
 - a. Understand, use, and apply digital technologies
 - b. Create digital knowledge and media
 - c. Use multimedia resources to communicate ideas effectively in a variety of forms
 - d. Master and use higher-level mathematics
 - e. Understand traditional and emerging topics in math, science, and technology, environmental sciences, robotics, fractals, cellular automata, nanotechnology, and biotechnology
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 - a. Develop open-mindedness, particularly regarding the values, traditions of others
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 - a. Initiate new ideas
 - b. Lead through influence
 - c. Build trust, resolve conflicts, and provide support for others
 - d. Facilitate group discussions, forge consensus, and negotiate outcomes
 - e. Teach, coach and counsel others
 - f. Enlist help
 - g. Collaborate tasks, manage groups, and delegate responsibilities
 - h. Implement decisions and meet goals
 - i. Share the credit
- 5 Adaptability, Initiative, and Risk-Taking**
 - a. Develop flexibility, agility, and adaptability
 - b. Bring a sense of courage to unfamiliar situations
 - c. Explore and experiment
 - d. Work effectively in a climate of ambiguity and changing priorities
 - e. View failure as an opportunity to learn, and acknowledge that innovation involves small successes and frequent mistakes
 - f. Cultivate an independence of spirit to explore new roles, ideas, and strategies
 - g. Develop entrepreneurial literacy
- 6 Integrity and Ethical Decision-Making**
 - a. Sustain an empathetic and compassionate outlook
 - b. Foster integrity, honesty, fairness and respect
 - c. Exhibit moral courage in confronting unjust situations
 - d. Act responsibly, with the interests and well-being of the larger community in mind
 - e. Develop a fundamental understanding of emerging ethical issues and dilemmas regarding new media and technologies
 - f. Make reasoned and ethical decisions in response to complex problems
- 7 Habits of Mind**
 - a. Conscientiousness
 - b. Creativity
 - c. Love of Learning/Curiosity
 - d. Resilience
 - e. Persistence
 - f. Self-Efficacy
 - g. Stress Management
 - h. Time Management

SIGNATURE OF SCHOOL OFFICIAL

Trusted credentials for GC and CC

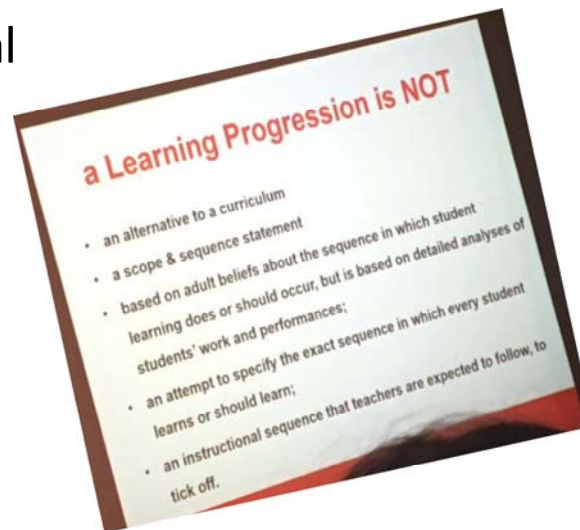
- Clear curriculum
- Quality progressions, rubrics, exemplars
- Ownership by stakeholders: recruiters, selectors
- Strong evidentiary base
- Shared standards for assessment
- Argued judgement case
- Micro-credentialing and learner profiles for reporting
- Software for management in schools
- Warrantors regulated



Professional knowhow still developing

- i) Progressions not very 'wise' yet.....
- ii) Not all should be assessed....
- iii) Generalisability and transferability are issues
- iv) Not all GCs are equal

9. We are at the early stages of professional competence.
There are limits to reliability



The possible exception to lack of transferability and generaliaability is ...

“More than ever, the sheer magnitude of human knowledge renders its coverage by education an impossibility; rather, the goal of education is better conceived as helping students develop the intellectual tools and learning strategies needed to acquire the knowledge that allows people to think productively about history, science and technology, social phenomena, mathematics, and the arts. Fundamental understanding ... including how to frame and ask meaningful questions about various subject areas, contributes to individuals’ more basic understanding of principles of learning that can assist them in becoming self-sustaining, lifelong learners.” (Bransford et al., 2000, p. 5)

Bransford, J. D., Brown, J. D., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school: Expanded edition*. Washington DC: National Academy Press.
Retrieved from <http://www.nap.edu/read/9853/chapter/1>

Proficiency in learning

