“WHAT DOES THIS MEAN? YOU CAN’T SAY THAT…”

Knowing the purpose of geographical assessment and feedback to manage your own and others’ responses

Susan Caldis
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PhD Candidate and Sessional Academic, Macquarie University

Acknowledgement Of Country

I would like to acknowledge the Wann-gal people who are the Traditional Custodians of the land upon which we meet today.

I would also like to pay respect to Elders both past and present, and extend that respect to other Aboriginal and Torres Strait Islander people at the Conference and in this session.

- **What** do I want my students to be able to know, understand and do by the end of XX?

- How will ***I*** know…?

- How will ***they*** know…?

So, before we start…

On the A4 paper, with reference to a unit you are teaching now…

1. **What** do you want your students to be able to know understand and do by the end of the current unit?

2. How will ***you know*** this has been achieved?

3. How will ***they know*** this has been achieved?

Red; Green; Yellow; Questions?

Outline of the session

What and Why

1. An overview about assessment in geographical education

2. What makes our Geography assessments geographical?

How

3. Formative or Summative? Feedback or Feed-Forward?

Next steps

4. Enabling or constraining influences in the development of our assessments for Geography

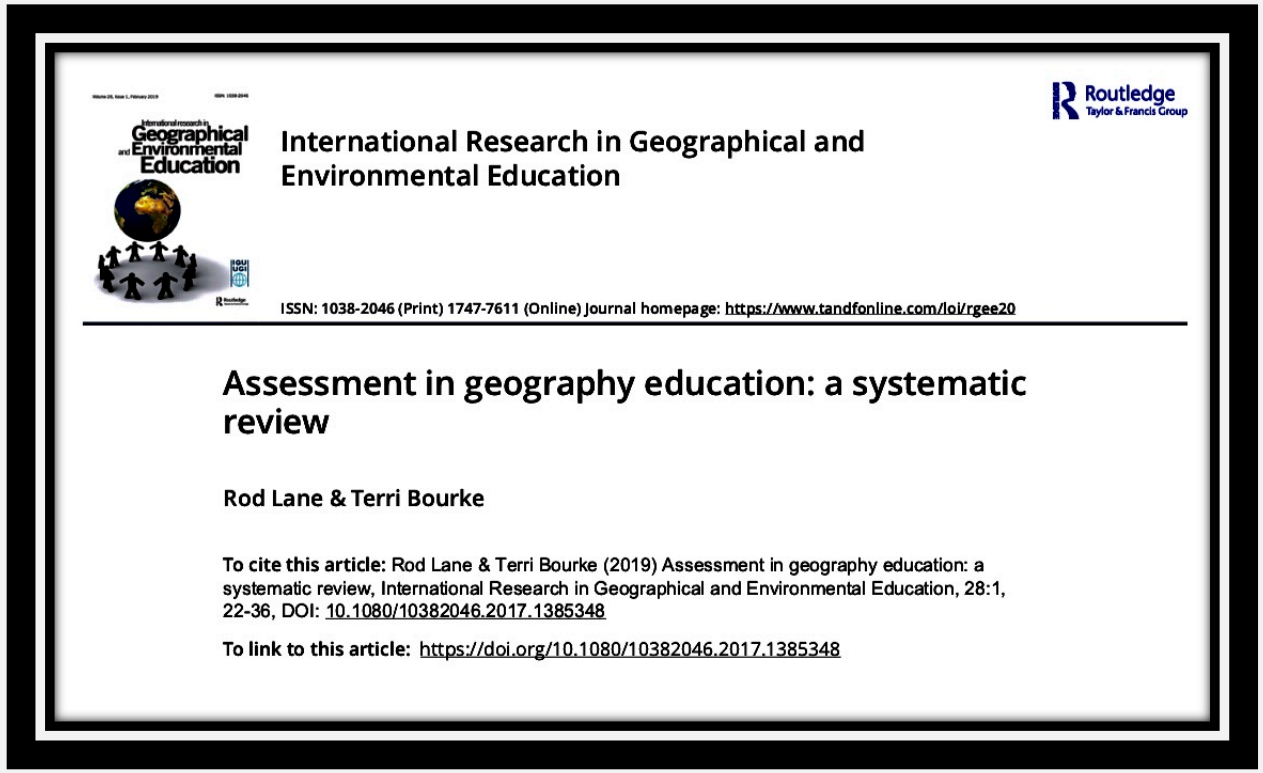
Objectives of the Session

1. To demonstrate an understanding about and application of the nature of geographical assessment.
2. To demonstrate an understanding about the possible enablers and constrainers to assessment practice in the Geography classroom.
3. To develop three SMART goals, related to assessment in the Geography classroom, to work towards and reflect on during the year.

1. An overview about assessment in Geography education

Lane & Bourke (2019)

- Formative and summative approaches are required;
- Formative assessment – enhanced student engagement and demonstrated depth of teacher knowledge about Geography;
- Spatial reasoning needs to be evident and can act as a benchmark for complexity of thinking and application of key concepts -> content analysis; and
- Concept mapping, sketch-mapping, visual representations, diagrams, word-association need to be evident in rigorous assessments and can be used to show progression in learning.



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International Research in Geographical and Environmental Education

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Assessment in geography education: a systematic review

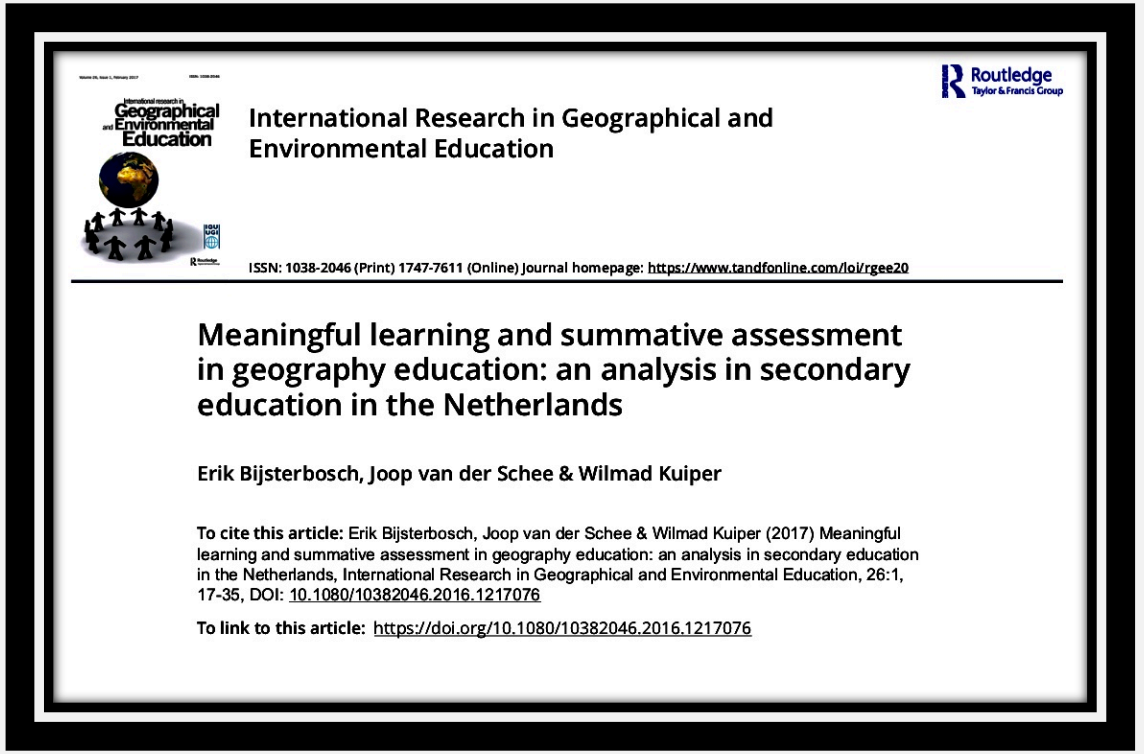
Rod Lane & Terri Bourke

To cite this article: Rod Lane & Terri Bourke (2019) Assessment in geography education: a systematic review, International Research in Geographical and Environmental Education, 28:1, 22-36, DOI: 10.1080/10382046.2017.1385348

To link to this article: https://doi.org/10.1080/10382046.2017.1385348

Bijsterbosch, van der Schee & Kuiper (2017)

- Formative and summative approaches need to be focused on meaningful geographical learning;
- Active construction of knowledge using prior and new - apply, integrate, create, evaluate – procedural and conceptual to accompany core knowledge;
- Spatial reasoning can become an taxonomic assessment tool either formatively and/or summatively such as SOLO; and
- Alignment needs to occur between what is valued in geographical education and the purpose and outcomes of internal assessment.



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Meaningful learning and summative assessment in geography education: an analysis in secondary education in the Netherlands

Erik Bijsterbosch, Joop van der Schee & Wilmad Kuiper

To cite this article: Erik Bijsterbosch, Joop van der Schee & Wilmad Kuiper (2017) Meaningful learning and summative assessment in geography education: an analysis in secondary education in the Netherlands, International Research in Geographical and Environmental Education, 26:1, 17-35, DOI: 10.1080/10382046.2016.1217076

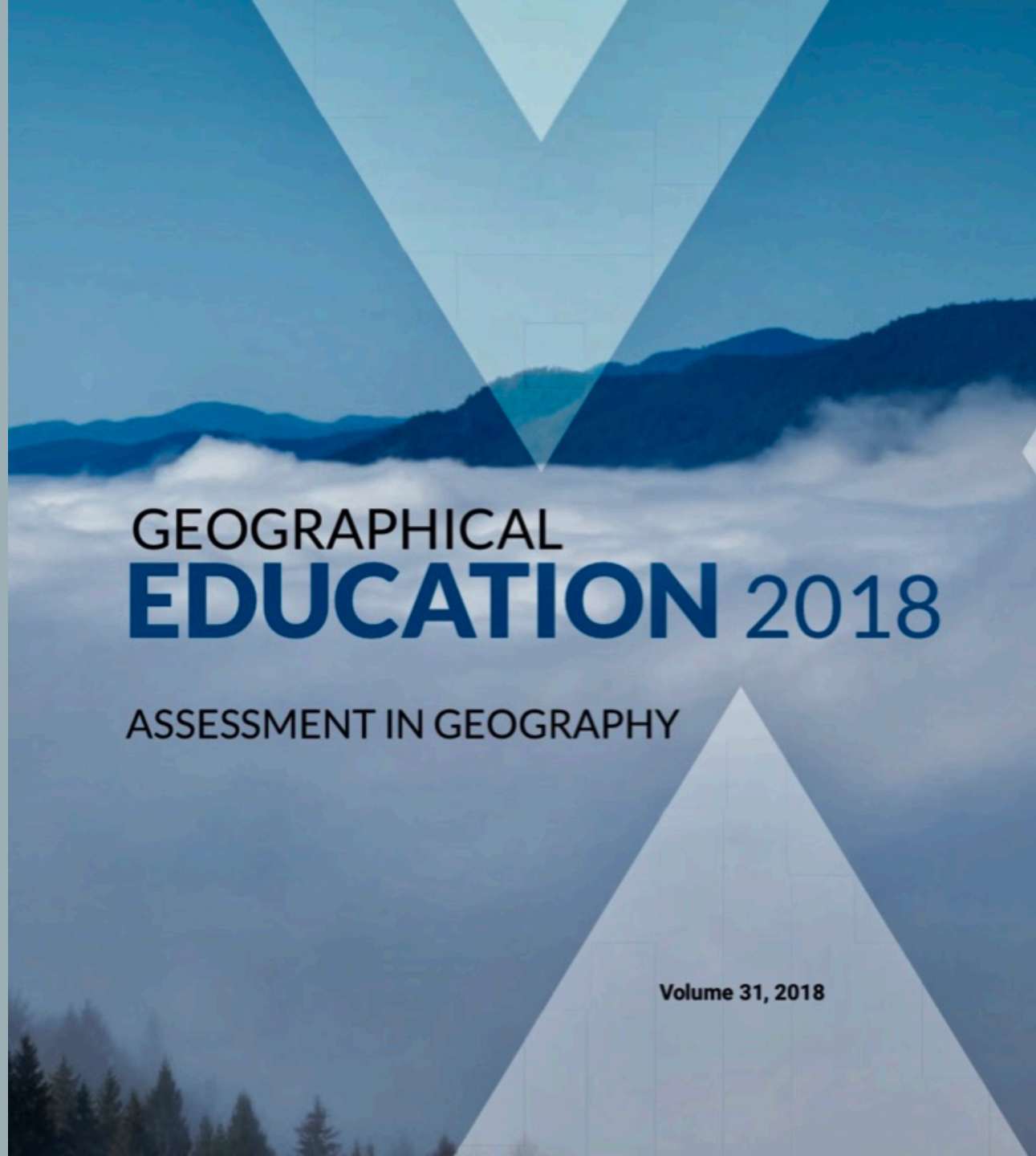
To link to this article: https://doi.org/10.1080/10382046.2016.1217076

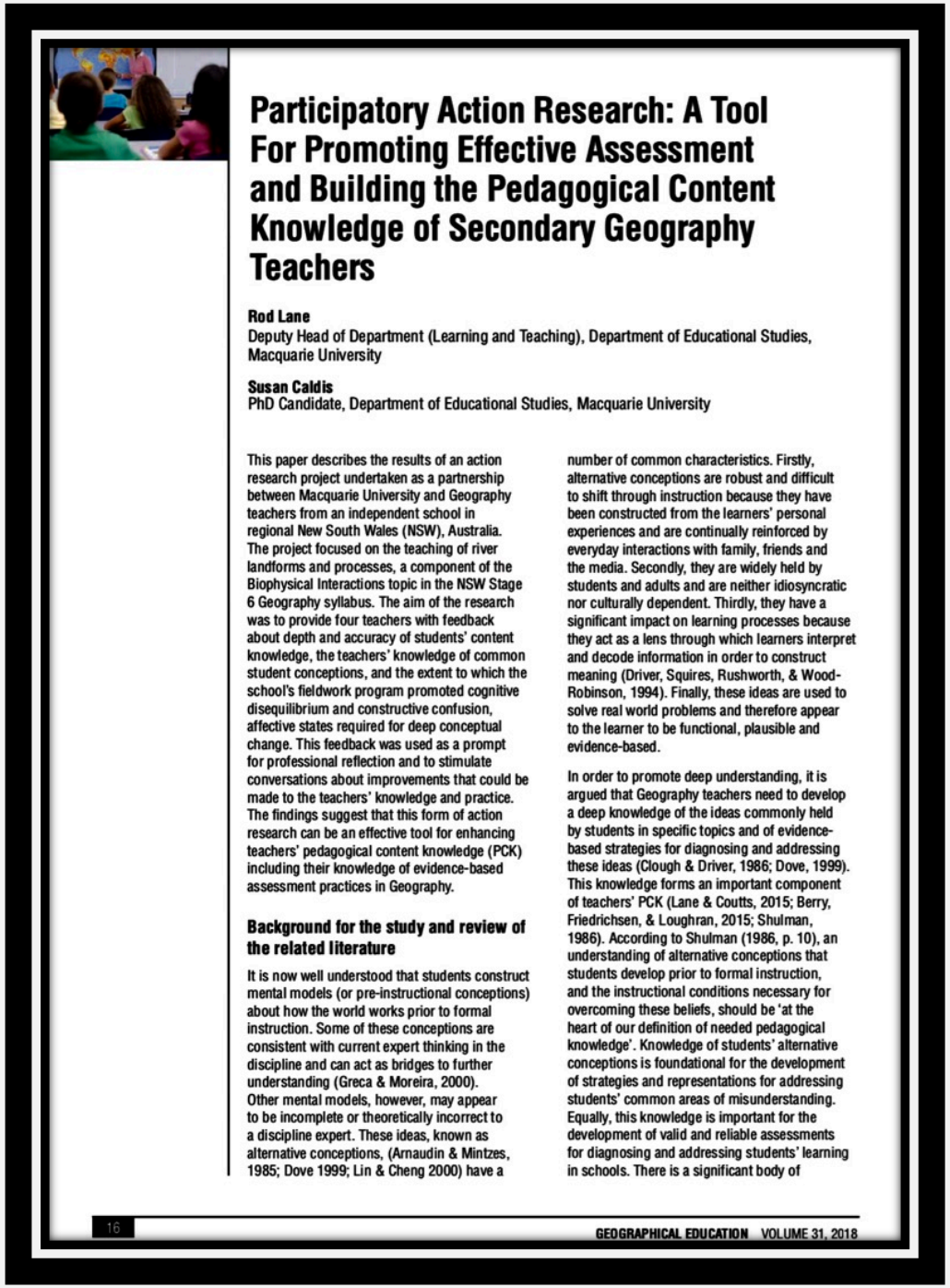
Available from the AGTA website

www.agta.asn.au

Under the

‘Resources’ tab





Participatory Action Research: A Tool For Promoting Effective Assessment and Building the Pedagogical Content Knowledge of Secondary Geography Teachers

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This paper describes the results of an action research project undertaken as a partnership between Macquarie University and Geography teachers from an independent school in regional New South Wales (NSW), Australia. The project focused on the teaching of river landforms and processes, a component of the Biophysical Interactions topic in the NSW Stage 6 Geography syllabus. The aim of the research was to provide four teachers with feedback about depth and accuracy of students' content knowledge, the teachers' knowledge of common student conceptions, and the extent to which the school's fieldwork program promoted cognitive disequilibrium and constructive confusion, affective states required for deep conceptual change. This feedback was used as a prompt for professional reflection and to stimulate conversations about improvements that could be made to the teachers' knowledge and practice. The findings suggest that this form of action research can be an effective tool for enhancing teachers' pedagogical content knowledge (PCK) including their knowledge of evidence-based assessment practices in Geography.

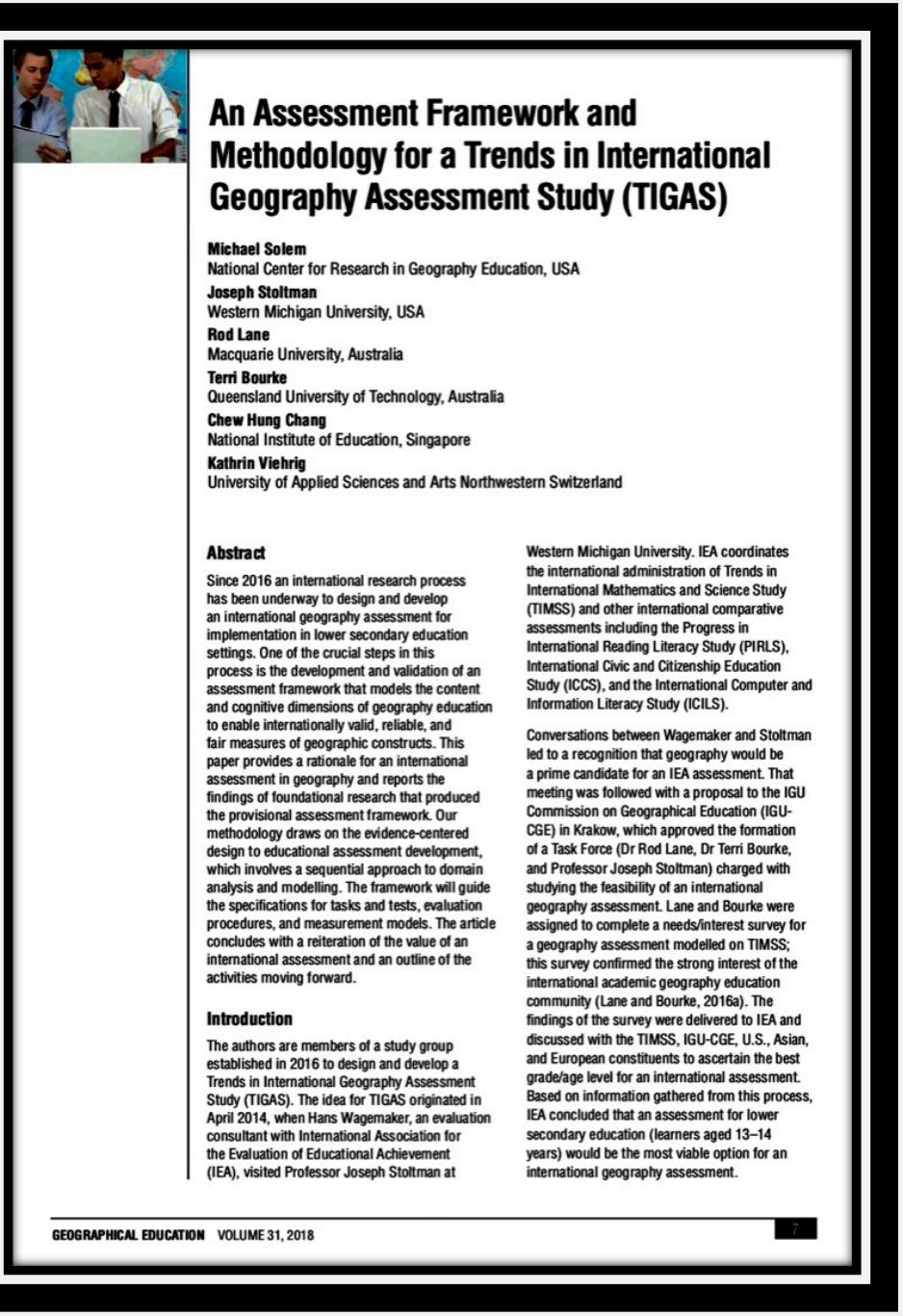
Background for the study and review of the related literature

It is now well understood that students construct mental models (or pre-instructional conceptions) about how the world works prior to formal instruction. Some of these conceptions are consistent with current expert thinking in the discipline and can act as bridges to further understanding (Greca & Moreira, 2000). Other mental models, however, may appear to be incomplete or theoretically incorrect to a discipline expert. These ideas, known as alternative conceptions, (Arnaudin & Mintzes, 1985; Dove 1999; Lin & Cheng 2000) have a number of common characteristics. Firstly, alternative conceptions are robust and difficult to shift through instruction because they have been constructed from the learners' personal experiences and are continually reinforced by everyday interactions with family, friends and the media. Secondly, they are widely held by students and adults and are neither idiosyncratic nor culturally dependent. Thirdly, they have a significant impact on learning processes because they act as a lens through which learners interpret and decode information in order to construct meaning (Driver, Squires, Rushworth, & Wood-Robinson, 1994). Finally, these ideas are used to solve real world problems and therefore appear to the learner to be functional, plausible and evidence-based.

In order to promote deep understanding, it is argued that Geography teachers need to develop a deep knowledge of the ideas commonly held by students in specific topics and of evidence-based strategies for diagnosing and addressing these ideas (Clough & Driver, 1986; Dove, 1999). This knowledge forms an important component of teachers' PCK (Lane & Coutts, 2015; Berry, Friedrichsen, & Loughran, 2015; Shulman, 1986). According to Shulman (1986, p. 10), an understanding of alternative conceptions that students develop prior to formal instruction, and the instructional conditions necessary for overcoming these beliefs, should be 'at the heart of our definition of needed pedagogical knowledge'. Knowledge of students' alternative conceptions is foundational for the development of strategies and representations for addressing students' common areas of misunderstanding. Equally, this knowledge is important for the development of valid and reliable assessments for diagnosing and addressing students' learning in schools. There is a significant body of

Lane & Caldis (2018)

- Understanding the nature and extent of conceptual change in student learning as a source of feedback to teachers about the effectiveness of fieldwork, teaching, learning and assessment; and
- Incorporating diagnostic assessment opportunities around alternative conceptions to enhance constructive alignment between teaching, learning and assessment and determine levels of complexity or simplicity to enhance understanding about learning progression.
- https://storymaps.esri.com/stories/2018/misconceptions/index.html



An Assessment Framework and Methodology for a Trends in International Geography Assessment Study (TIGAS)

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Abstract

Since 2016 an international research process has been underway to design and develop an international geography assessment for implementation in lower secondary education settings. One of the crucial steps in this process is the development and validation of an assessment framework that models the content and cognitive dimensions of geography education to enable internationally valid, reliable, and fair measures of geographic constructs. This paper provides a rationale for an international assessment in geography and reports the findings of foundational research that produced the provisional assessment framework. Our methodology draws on the evidence-centered design to educational assessment development, which involves a sequential approach to domain analysis and modelling. The framework will guide the specifications for tasks and tests, evaluation procedures, and measurement models. The article concludes with a reiteration of the value of an international assessment and an outline of the activities moving forward.

Introduction

The authors are members of a study group established in 2016 to design and develop a Trends in International Geography Assessment Study (TIGAS). The idea for TIGAS originated in April 2014, when Hans Wagemaker, an evaluation consultant with International Association for the Evaluation of Educational Achievement (IEA), visited Professor Joseph Stoltman at Western Michigan University. IEA coordinates the international administration of Trends in International Mathematics and Science Study (TIMSS) and other international comparative assessments including the Progress in International Reading Literacy Study (PIRLS), International Civic and Citizenship Education Study (ICCS), and the International Computer and Information Literacy Study (ICILS).

Conversations between Wagemaker and Stoltman led to a recognition that geography would be a prime candidate for an IEA assessment. That meeting was followed with a proposal to the IGU Commission on Geographical Education (IGU-CGE) in Krakow, which approved the formation of a Task Force (Dr Rod Lane, Dr Terri Bourke, and Professor Joseph Stoltman) charged with studying the feasibility of an international geography assessment. Lane and Bourke were assigned to complete a needs/interest survey for a geography assessment modelled on TIMSS; this survey confirmed the strong interest of the international academic geography education community (Lane and Bourke, 2016a). The findings of the survey were delivered to IEA and discussed with the TIMSS, IGU-CGE, U.S., Asian, and European constituents to ascertain the best grade/age level for an international assessment. Based on information gathered from this process, IEA concluded that an assessment for lower secondary education (learners aged 13–14 years) would be the most viable option for an international geography assessment.

Solem, Stoltman, Lane, Bourke, Chang, & Viehrig (2018)

- Assessment (formative and/or summative) should cover content (conceptual, contestable, theoretical) and cognition; and
- Students should be able to demonstrate multiple perspectives and global relevance of an issue/issues and a process/processes across a range of scales – active citizenship and application of knowledge, skills and capabilities.

So, continuing from where we started…

On the A4 paper, with reference to the unit and the literature, has anything been confirmed or challenged…

1. **What** do you want your students to be able to know understand and do by the end of the current unit?
2. How will ***you know*** this has been achieved?
3. How will ***they know*** this has been achieved?

Red; Green; Yellow; Questions?

2. What makes our Geography assessments geographical?

What makes a Geography lesson geographical?

What happens in a Geography lesson that confirms you have been in a *Geography* lesson?

- Individually, on post-it-notes, write down 3 points. You can draw from personal experience and/or theory

Activity:

Think, Share, Compare

- Share your 3 post-it-notes with the group
- Arrange the post-it-notes to show most frequently to least frequently mentioned points OR clusters of similar themes
- Contribute to a whole group discussion

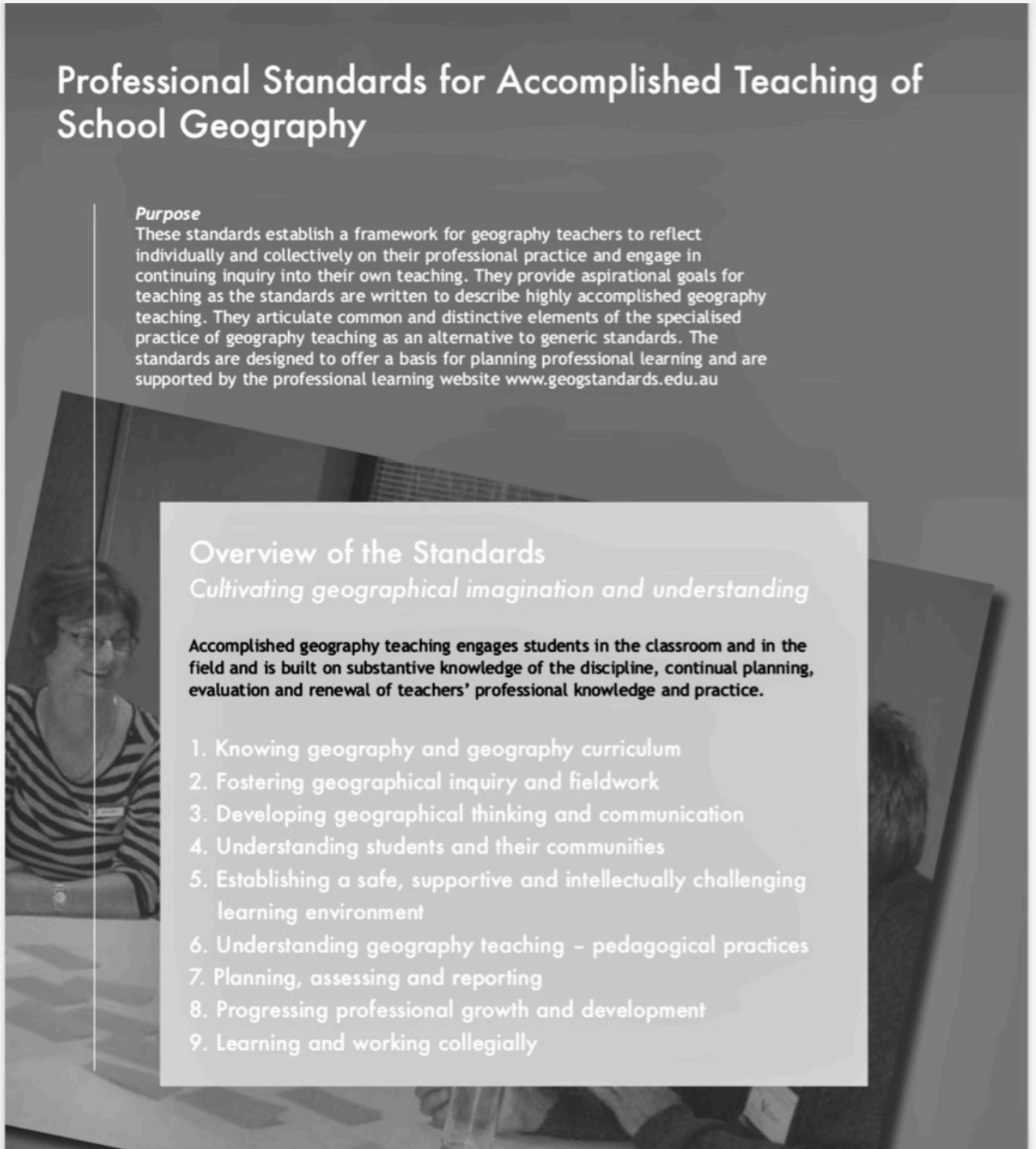
www.GEOGstandards.edu.au
(website under reconstruction)

Hutchinson & Kriewaldt (2010)

www.agta.asn.au

Under the ‘Resources’ tab,

Professional Standards



1. Knowing geography and geography curriculum

Accomplished geography teachers:

- 1.1 know the breadth and depth of the academic discipline including its concepts, skills, values and understandings
- 1.2 assist students to understand that geography draws from the physical sciences, the social sciences and the humanities
- 1.3 understand current curriculum documents and reasons for curriculum change
- 1.4 locate geography within a wider educational context, making connections with other curricular and co-curricular areas

2. Fostering geographical inquiry and fieldwork

Accomplished geography teachers:

- 2.1 encourage students to carry out a range of geographical inquiries, from structured to more open-ended and active investigations, from prearranged problem-solving and discovery to negotiated inquiry. Through these inquiries, students identify topics, generate questions, evaluate the quality of evidence, process and analyse data, select presentation methods to communicate the research findings effectively, think creatively about geographical issues, propose individual or group action in response to the research findings and, where appropriate, take such action
- 2.2 make judgements about the essential skills, processes, understandings and values that students need to develop to carry out meaningful and ethical geographical inquiries
- 2.3 support students to undertake inquiry in the field, and to select and use fieldwork tools and techniques appropriately, safely and efficiently. Tools may range from simple purpose-built equipment to digital and video cameras, GIS and environmental sensors.

7. Planning, assessing and reporting

Accomplished geography teachers:

- 7.1 design curriculum to develop geographical thinking in their students in such a way as to spark an interest among all students – an interest that is active, contemporary, enlivening and sustained
- 7.2 plan and continually monitor their students' learning, using a wide range of formal and informal assessment methods
- 7.3 prepare assessment for learning, recognising the positive achievements of students and indicating directions for improvement
- 7.4 conduct summative assessment which is made available to students and care-givers
- 7.5 use assessment methods that are appropriate, valid and reliable; in reporting students' achievements and areas for improvement, they employ a variety of procedures, ensuring they use clear and accurate language that is suitable for the intended audience
- 7.6 employ diagnostic assessment to inform their own teaching and student understanding.

3. Developing geographical thinking and communication

Accomplished geography teachers:

- 3.1 promote understandings of physical and human processes, structures and patterns and their interdependence in place, space and time
- 3.2 assemble the many strands of geography, providing multiple resources for the further development of geographical thinking by students. They set this comprehensive knowledge in contemporary contexts, opening the way for significant interconnections to be made
- 3.3 support students to think spatially and use maps, visual images and new technologies, including geographical information systems (GIS), to obtain, present, analyse and evaluate information
- 3.4 provide students with varied contexts through which to construct a deep understanding of geographical concepts and use case studies to give support to the subject's breadth and depth
- 3.5 encourage students to recognise their personal geographies and to use these lived experiences as an entry point to understanding the complexities of the contemporary world, seen through events and issues arising at personal, local, national and global scales
- 3.6 share narratives with students which have real world contexts, whether they are based on the teacher's own life experiences or others' narratives and, in so doing, they make visible their geographical thinking.

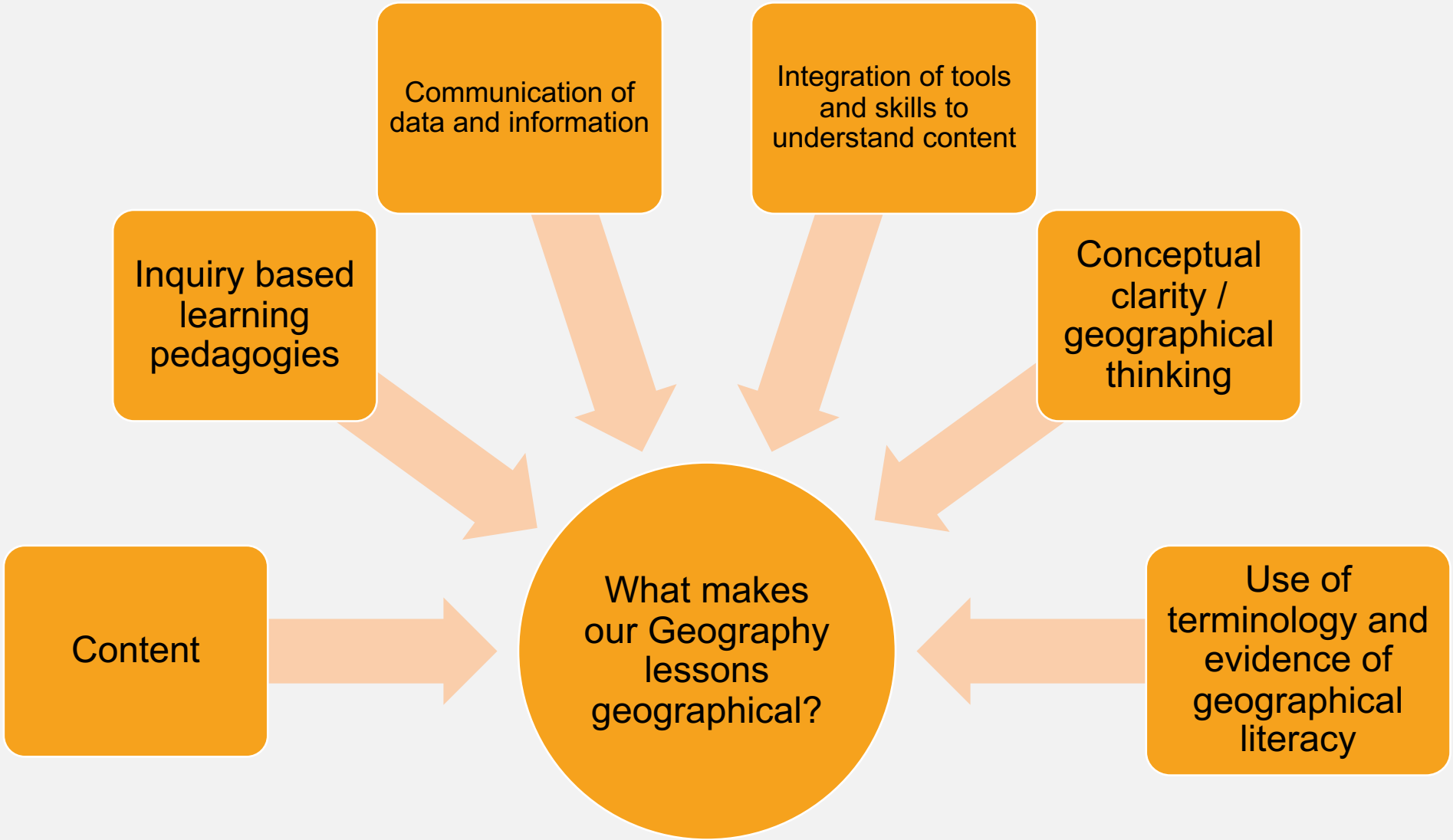
6. Understanding geography teaching – pedagogical practices

Accomplished geography teachers:

- 6.1 have current and extensive understanding of geographical education processes, including pedagogical content knowledge. They select, adapt and create field-specific and general teaching approaches and resources to support deep understanding of place, space and environments and they justify their choices about planning and teaching
- 6.2 promote gathering of information for geographic inquiry from a variety of sources, including fieldwork, libraries, the internet, digital and print media
- 6.3 use fieldwork and outdoor learning as a key practice to develop students' data collection, analysis and evaluative skills, to deepen their understanding of place, space and environments
- 6.4 systematically introduce and develop a range of cartographic, statistical and graphical tools and skills that enable students to think and communicate geographically. This includes making and interpreting maps, and a range of other representations collectively described as graphicacy. They teach students to critically evaluate maps and other forms of representation.

From theory and practice…

What makes our Geography lessons geographical?



What makes a Geography assessment geographical?

Are elements of a geographical Geography lesson evident in your assessments for Geography?

Yes	No	Something else

- **What** do I want my students to be able to know, understand and do by the end of XX?

- How will ***I*** know…?

- How will ***they*** know…?

So, continuing on…

Revisiting the unit and the evidence base so far...

1. Changes or amendments?
2. An ‘aha’ moment
3. A challenge

Red; Green; Yellow; Questions?

3. Formative or Summative?

Feed-back or Feed-forward?

- http://bravatrak.com/whats-the-difference-between-feedback-and-feedforward/

Please stand in a circle and choose to share one of (a), (b), or (c):

(a) Provide a feedback and a feedforward comment to Susan about this session so far; OR

(b) Provide a feedback and a feedforward comment to yourself about ‘the unit’ and geographical assessment; OR

(c) Outline the typical content and mode of delivery of a recent feedback and a feedforward comment to one of your students.

https://teche.mq.edu.au/2018/08/coffee-course-day-1-why-is-feedback-so-tricky-to-get-right/

Misconception	The hard question	Response
The role of feedback is to justify the mark	How often do we do this? Why?/Why not?/How?/Who with?	
The educator is the only source of feedback	How often do students receive feedback and feedforward from sources other than me? Why?/Why not?/How?	
Students recognize when they receive feedback	Reflection question from website	
Students understand and receive my feedback	How do I know? What is the evidence?	
It is not possible to provide quality feedback in a short amount of time	Do I believe this? Why/Why not? If so, what else could I do? If not, what do I do?	

BRAIN BLAST

24 Exit Ticket Questions

CHOOSE A QUESTION

1. Write one thing you learned today.
2. What gave you the most difficulty today? Why?
3. Something that really helped me learn today was...
4. My "aha" moment or epiphany today was...
5. Describe how you solved a problem today.
6. Write a question you have about a topic you're curious about.
7. Working with others today made ____ easier or harder. Explain.
8. Describe a connection you see between today's material and your life. (Source: Adapted from Jennifer Green)

BLOOM'S TAXONOMY PROMPTS

- **Remember:** Describe _____.
- **Understand:** What would happen if _____?
- **Apply:** How would you alter _____ to _____?
- **Analyze:** Discuss the pros and cons of _____.
- **Evaluate:** List criteria to judge _____.
- **Create:** What would happen if _____?

AFTER EXAM PROMPTS

1. How much time did you spend reading? Re-reading? Reviewing? Using note cards? 2. What study approach worked best for you? 3. How would you categorize mistakes made on the exam? 4. What do you need to do to prepare for the next exam _____?

AAR

AFTER ACTION REPORT: What worked? What didn't? Why? What would you do differently next time? (Source: BetterEvaluation)

3 TICKET FOLDERS

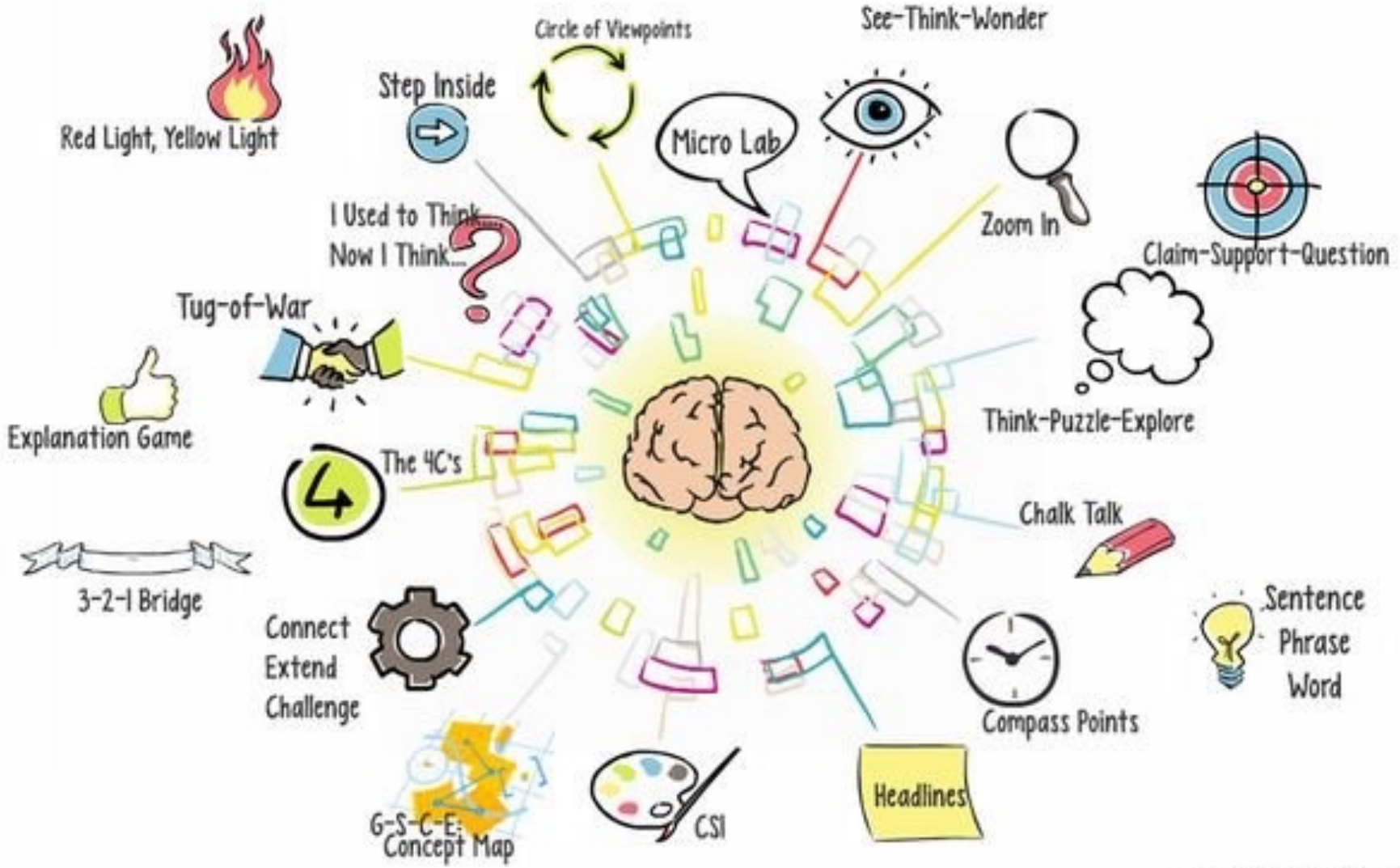
After they write their names, what was learned and lingering questions, direct students "to deposit their exit tickets in a folder or bin labeled either 'Got It,' 'More Practice, Please,' or 'I Need Some Help!' (Source: Erika Savage)

THE BIG QUESTION

A year from now, what will be important for you to remember about today's lesson?

Todd's BRAIN

VISIBLE THINKING ROUTINES



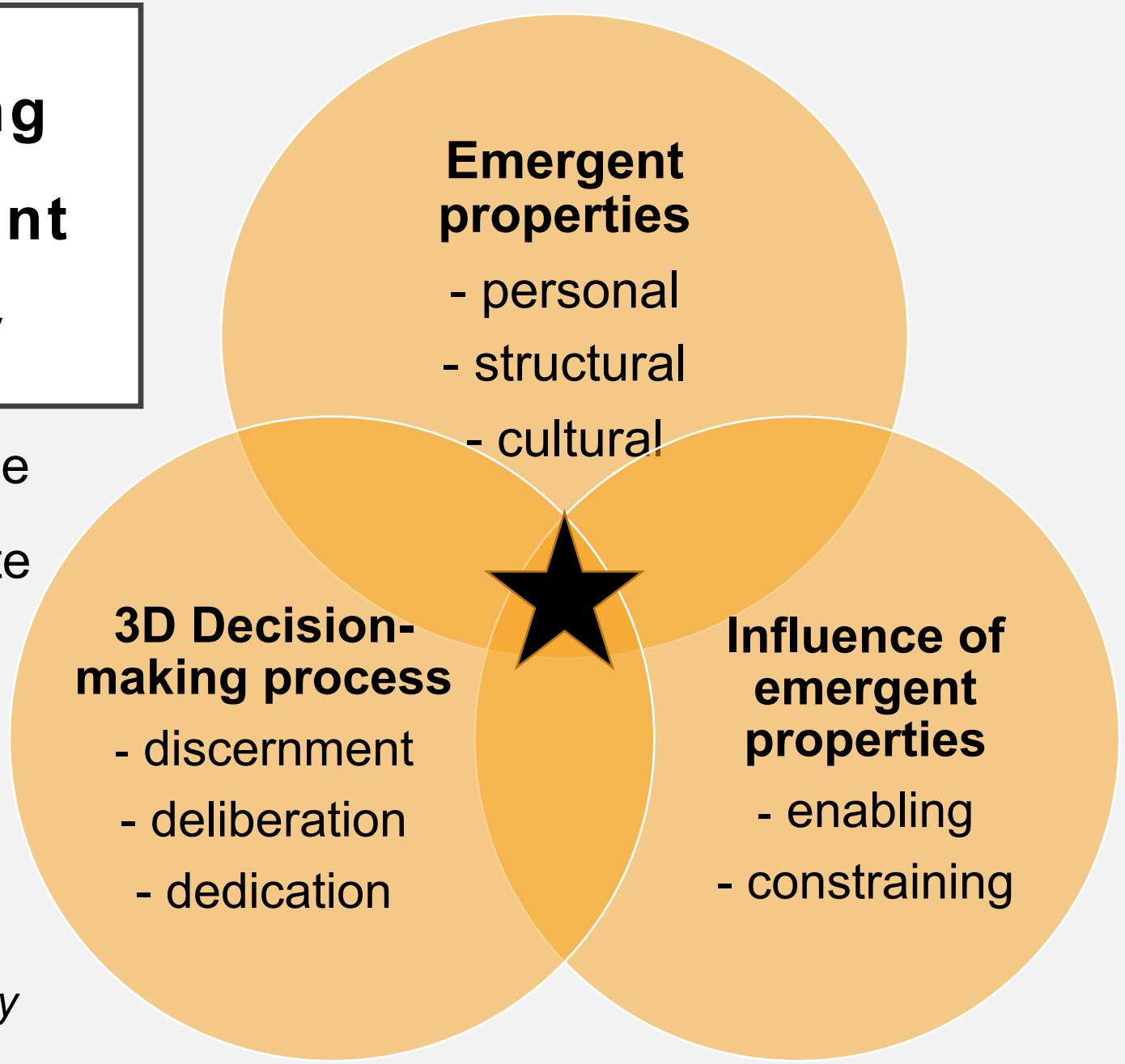
resources from Making Thinking Visible

4. Enabling and/or constraining influences

Enabling or constraining influences on assessment practice in Geography

The Theory of Reflexivity is about the 'bending-back' of thought to stimulate 'internal dialogue' that shapes thoughts and demands action (Archer, 2010a, 2010b, 2012).

Example: assessment and reflexivity theory



Theory of Reflexivity (Archer, 2010a, 2010b, 2012)

	Enablers	Constraints
Personal (e.g. my own convictions)		
Structural (e.g. syllabus, empirical research, timetabling)		
Cultural (e.g. school, faculty)		

Individual; most powerful

Group; most prevalent

Identifying possible influences that enable or constrain your assessment practice in the Geography classroom

1. Individually, list an influence from each emergent property that enables or constrains your own assessment practice in the Geography classroom.
2. Share with your group. Discuss and rank the top 3 enablers and the top 3 constrainers to assessment practice in the Geography classroom.
3. Share as part of whole group discussion.

Making my Geography assessments more geographical: Maximising the enablers and mitigating the constrainers

- Thinking about the literature
- Thinking about my pedagogy
- Thinking about the needs and capabilities of my students
- Thinking about the feedback and feedforward I provide to students
- Thinking about the enabling influences
- Thinking about the constraining influences

So, still continuing on…

On the A4 paper, with reference to the unit, literature, and discussion what will change?

1. ***What*** do you want your students to be able to know understand and do by the end of the current unit?
2. How will ***you know*** this has been achieved?
3. How will ***they know*** this has been achieved?

Red; Green; Yellow; Questions?

SMART goals: Personalised goals for assessment in the Geography classroom

- Introduce the idea of SMART goals
- https://www.projectsmart.co.uk/smart-goals.php
- Individually develop 3 SMART goals about assessment practice in the Geography classroom for you to work towards and reflect on during the remainder of this school year
- Please write one of your goals on the A4 paper

SMART goals: Personalised goals for assessment in the Geography classroom

- **S** - specific, significant, stretching
- **M** - measurable, meaningful, motivational
- **A** - agreed upon, attainable, achievable, acceptable, action-oriented
- **R** - realistic, relevant, reasonable, rewarding, results-oriented
- **T** - time-based, time-bound, timely, tangible, trackable

- **What** do I want my students to be able to know, understand and do by the end of XX?

- How will ***I*** know…?
- How will ***they*** know…?

- **What am I going to do**?

Objectives of the session

- [x] To demonstrate an understanding about and application of the nature of geographical assessment.

- [x] To demonstrate an understanding about the possible enablers and constrainers to assessment practice in the Geography classroom.

- [x] To develop three SMART goals, related to assessment in the Geography classroom, to work towards and reflect on during the year.

THANK YOU FOR YOUR INTEREST AND PARTICIPATION

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