Threshold Concepts and Troublesome Knowledge

A Transformational Approach to Pharmacy Education

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1. ‘A dance with ambiguities’: education, risk and the contemporary world

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1. A dance with ambiguities: education, risk and the contemporary world
‘A dance with ambiguities’ (Appiah 2016)

Characteristics of the 21st century

- Surveillance
- Post-truth, post-trust, fake news
- Unpredictability
- Risk
- Displacement
- Need for flexibility and agility
- Entitlement v responsibility
- Scarcity of resources
- Austerity
- Sustainability
- Need for prudence
- Transparency & accountability
- Discontinuity and rupture
- Shifting paradigms
- Poverty v affluence
- Outsourcing of jobs, automation
- Youthfulness

- Uncertainty
- Speed and acceleration
- Complexity
- Interculturalism
- Mobility of population(s)
- Conflict (social, military)
- Inter-generational tension
- Need for ethical citizenship
- Information saturation
- Proliferation of knowledge
- Globalisation
- Internationalisation
- Private /public sector tension
- Increasing panic
Sankofa (Adinkra symbol Ghana)
Pedagogies of uncertainty

In these settings, the presence of emotion, even a modicum of passion, is quite striking--as is its absence in other settings. I would say that without a certain amount of anxiety and risk, there's a limit to how much learning occurs.

One must have something at stake. No emotional investment, no intellectual or formational yield.

(Shulman 2005:4)
Venturing into strange places

The student is perforce required to venture into new places, strange places, anxiety-provoking places. This is part of the point of higher education. If there was no anxiety, it is difficult to believe that we could be in the presence of a higher education.

(Barnett 2007: 147)
Barnett (2004) argues that it would be irrational and self-defeating to assume that we can prepare a new generation of students to cope with uncertainty by establishing a new kind of certainty in the curriculum.
The ‘beautiful risk of education’ (Biesta 2013)

Biesta argues the ‘stronger’ education becomes -- more secure, more predictable, risk-free, standardized -- the more we lose sight of what it actually is: a practice that is slow, difficult, insecure, unpredictable, and full of risks and uncertainties.

Weakness (*pensiero debole*), in this sense, is ‘the very condition that makes education possible’

Weakness is to be praised as an asset rather than decried as a deficit.

(Biesta *The Beautiful Risk of Education*, 2013, p.4)
phenomenological distinction between ‘learning from’ and ‘being taught by’. Learning from a teacher means that the teacher is a resource used by students to gain access to what they want to know or learn to do.

Being taught by: ‘someone showed us something or made us realize something that really entered our being from the outside’ (p. 53). The teacher is transcendent, offering the student a gift of something that is beyond their immediate intellectual grasp or set of interests.
Transcendence in teaching

- transcendence (Kierkegaard) v maieutics (Socrates)

- ‘...teaching only has meaning if it carries with it a notion of ‘transcendence,’ that is, if it is understood as something that comes from the outside and adds rather than that it just confirms what is already there’. (Biesta 2013, p.453)
• Learning – an ‘individualizing’ processual term, which lacks content and purpose

• Education – a ‘relational’ term
Alterity in teaching

• ‘...the maieutic model erases the significance of the Other and claims that learning is a recovery contained within the I, rather than a disruption of the I provoked by the Other in a moment of sociality.’ (Todd 2003, p. 30).

• **Double truth giving**: presenting students with something that ‘is neither derivable from nor validated by what [they] already know’ (Westphal 2008, p. 26).
Three Domains of Education

Qualification:
- acquisition of knowledge, skills, values, and dispositions

Socialisation:
- acculturation to existing traditions and ways of doing and being

Subjectification:
- emancipation and freedom of the subject and the responsibility that comes with such freedom; ‘coming into presence’
Education

Qualification
- acquisition of knowledge, skills, values, and dispositions

Socialisation
- acculturation to existing traditions and ways of doing and being

Subjectification
- emancipation and freedom of the subject and the responsibility that comes with such freedom; ‘coming into presence’
The capability to make informed and reasoned judgments as the basis of good decisions
Transformational Learning
The only real voyage of discovery consists not in seeing new landscapes, but in having new eyes, in seeing the universe with the eyes of another.

Marcel Proust, 1900
Troublesome knowledge

Perkins 1999
Questioning safe space

‘The solemnity with which teachers, students, and researchers invoke the ideal of a “safe space” suggests that there are literal pedagogical conditions under which students can be free from self-doubt, hostility, fear, or non-affirmation. .. there are no such spaces. What we count as “safe” is an imaginary construction reliant on ritualised forms of control.’

*Questioning safe space*, Stengel and Weems 2010, p.505
2. A pedagogy of uncertainty: threshold concepts and troublesome knowledge
pax intrantibus, salus exeuntibus (1609)
Threshold Concepts

Real learning requires stepping into the unknown, which initiates a rupture in knowing...

By definition, all TC scholarship is concerned (directly or indirectly) with encountering the unknown.

Schwartzman 2010 p.38
‘To go anywhere you must also leave where you are ....’ (Sentier 2014 p.17)
Threshold Concepts

As a consequence of comprehending a threshold concept there may thus be a transformed internal view of subject matter, subject landscape, or even world view.

Such a transformed view or landscape may represent how people ‘think’ in a particular discipline, or how they perceive, apprehend, or experience particular phenomena within that discipline, or more generally.
However the engagement by the learner with an unfamiliar knowledge terrain and the ensuing reconceptualisation may involve a reconstitution of, or shift within, the learner’s subjectivity, and perhaps identity.

Ontological implications. Learning as ‘a change in subjectivity’. (Pelletier 2007).
East of Eden through the threshold
WORSHIP SAT 5PM SUN 8:30AM & 10:30AM

ADAM & EVE
THE FIRST PEOPLE TO NOT READ THE APPLE TERMS & CONDITIONS
Some natural tears they dropped, but wiped them soon; 
The world was all before them, where to choose 
Their place of rest, and Providence their guide. 
They, hand in hand, with wandering steps and slow, 
Through Eden took their solitary way.

John Milton (Paradise Lost, Book XII; 1667)
Liminality

a transformative state that engages existing certainties and renders them problematic, and fluid

a suspended state in which understanding can approximate to a kind of mimicry or lack of authenticity

liminality as unsettling – sense of loss

Van Gennep 1960, Turner 1969
Progressive function of the liminal state

- Countenancing and integration of something new
- Recognition of shortcoming of existing view
- Letting go of the older prevailing view
- Letting go of an earlier mode of their subjectivity
- Envisaging (and accepting) an alternative version of self through the threshold space (as a practitioner) - ‘reauthoring’ of self. ‘undoing the script’ (Ross 2011)
- Acquiring and using new forms of written and spoken discourse and internalising these
Learning as loss (Atherton 1989)*

Supplantive learning in its most general and weakest sense entails a degree of loss of competence, and perhaps of confidence, because a previous skill (or item of knowledge) has to be abandoned or rejected, while the learner is still on the learning curve with the new understanding or skill.

* ‘A semi-retired curmudgeonly pontificator’
Represented graphically, the curve of the old skill and that of the new produce a ‘learning trough’. Frustration at this loss of competence can itself be sufficient to abort the learning process.
Supplantive learning (Atherton 1989)

destabilisation

disorientation

re-orientation
Student voice:

In the beginning we were thrown into something completely new and unknown that has been difficult to deal with. The feeling of not being clever enough, and not having control of what you are doing, have resulted in a lot of frustration and stress, and this has influenced the process to the extent that I have become exhausted and depressed, and I wanted to quit.”
“Eventually it became clear that the project was about examining the edge/ridge, the exciting state of mind where meaningful and many faceted places may emerge. .......The architecture here on the edge/ridge is rich on senses, a delicate point of balance. It *is* senses”.

Student voice:
Characteristics of a threshold concept

- integrative
- transformative
- irreversible
- bounded
- re-constitutive
- discursive
- troublesome
Troublesome knowledge

• ritual knowledge
• inert knowledge
• conceptually difficult knowledge
• the defended learner
• alien knowledge
• tacit knowledge
• loaded knowledge
• troublesome language

Perkins 2006
'The path of least resistance and least trouble is a mental rut already made. It requires troublesome work to undertake the alteration of old beliefs.'

John Dewey 1933
The difficulty lies, not in the new ideas, but in escaping from the old ones, which ramify ... into every corner of our minds.

John Maynard Keynes (1936)
Janus – divinity of the threshold

epistemological

ontological
TCs Candidate concepts

• Pure Maths – ‘complex number’, a ‘limit’, the Fourier transform
• Literary Studies – ‘signification, deconstruction, ethical reading’
• Economics – ‘opportunity cost, price, elasticity’
• Design – ‘Confidence to challenge’
• Computer Science – ‘programming’, ‘Y and Recursion’
• Exercise Physiology – ‘metabolism’
• Law - ‘precedence’
• Accounting - ‘depreciation’
• Biology, Psychology - ‘evolution’
• Politics – ‘the state’
• Engineering – ‘reactive power’, ‘spin’
• Nursing ’Evidence-based Practice’
• Mental Health Nursing ‘Recovery’
• Comparative Religion– ‘Biblical texts as Literary Texts’
• Plant Science ‘Photoprotection’
• Health Science – ‘Care’
• Physics – ‘Gravity’, ‘Measurement uncertainty’
• Geology - ‘Geologic Time’
3. A Threshold Concepts in Pharmacy (group task)
Scenario a) Homeostasis and human disease.

Disease states commonly involve disruption to processes that are highly regulated by the body. A thorny concept for students is how to understand which symptoms experienced by the patient are due to the underlying disease mechanism, and which symptoms are caused by the body's attempts to "right the ship".

For example for people with heart failure, tiredness and fatigue is a consequence of the failing heart, and a fast pulse / racing heart is part of the body's attempt to maintain blood pressure and supply to organs. Separating cause and effect relies on a working understanding of the system.
Scenario b) Drug adverse effects: separating cause and effect.

New chemicals introduced into a biological system will often disrupt the normal regulation of that system, in addition to and sometimes in opposition to the beneficial effect of the drug. So some drugs will cause a reduction in blood pressure, and at the same time a rise in heart rate will be triggered as the body's response to the effect of the drug.
4. Comfort with uncertainty: implications for professional practice
To live in the liquid modern we need to act under the conditions of uncertainty, risk and shifting trust. Liquid learning on the other hand is characterised by emancipation, reflexivity and flexibility, so that knowledge and knowledge boundaries are contestable and always on the move.

(Savin-Baden 2008 p.77)
Comfort with uncertainty (Ilgen et al 2018)

• describes instances where clinicians have the confidence to act on a problem (or wait and observe) while lacking full confidence in their understanding of the underlying cause of the issue.

• Moment-to-moment decision-making. By focusing on the influences that shape individuals’ comfort, the management of uncertainty can focus on planning and enacting defensible clinical actions even when downstream outcomes remain unknown
‘not knowing’ precludes taking action, while ‘knowing’ provides license for unwavering certitude when moving forward.

Shifting our instructional models towards an emphasis on ‘comfort with uncertainty’ would instead teach students that skillful clinicians use problem-definition and problem-solving in parallel

(Ilgen et al 2018, n.p.)
To act with confidence while simultaneously remaining uncertain is a paradox that epitomizes expert practice (Ilgen et al 2018).

Instead we often strive to impose certainty on inherently ambiguous situations.

How do professionals manage uncertainty arising from complex, ill-defined problems where there are conflicting assumptions, evidence, and opinion which may lead to different solutions?

What does it mean to be ‘comfortable’ when working with ill-defined challenges (briefs) while feeling ‘uncertain?’
uncertainty v. ambiguity (Ilgen et al 2018)

• ‘uncertainty,’ as applied to ill-defined problems is frequently used in ways that do not sufficiently distinguish between the properties of the situation and the ‘lived experience’ of the individual

• A thing, is inherently ambiguous if it can be interpreted in two or more distinct ways by different individuals, or by the same individual at different moments in time
• ‘uncertainty’ represents a state of tentativeness with regard to one’s conception of a situation, arising from recognizing that a situation is ambiguous, from perceived limitations in one’s own knowledge), or from recognition that one has incomplete information

• ‘certainty’ is the confidence in one’s interpretation of a challenging situation and ‘comfort’ is the confidence in one’s ability to act (or choose to continue monitoring the situation without direct action).
5. Implications for students and universities
Students do not always enjoy studying with me. Often they find my courses challenge them in ways that are deeply unsettling. This was particularly disturbing to me at the beginning of my teaching career because I wanted to be liked and admired. It took time and experience for me to understand that the rewards of engaged pedagogy might not emerge during a course.

bell hooks (1994 p. 206)
My models were the people who stepped outside of the conventional mind and who could actually stop my mind and completely open it up and free it, even for a moment, from a conventional, habitual way of looking at things ...

If you are really preparing for groundlessness, preparing for the reality of human existence, you are living on the razor’s edge, and you must become used to the fact that things shift and change. Things are not certain and they do not last and you do not know what is going to happen. My teachers have always pushed me over the cliff ...

Pema Chodron 1994
Safe spaces, trigger warnings, deplatforming

If you hold back from learning about deception and violence, you won’t understand why we have the laws we do, or any system of law at all. Equally, you can’t appreciate great works of literature if you resist depictions of the darker side of human life... The power of these works of art comes from their truthfulness, their unswerving fidelity to the enduring features of the human world. Anyone who shrinks from them is in effect refusing to explore what it means to be human. (Gray 2016)

John Gray  *Against Safe Spaces* 2016
Difficulty

We are an entangled species. We are not to be unknotted easily. When we turn our backs on difficulty ... we turn our backs on who we are.

Howard Jacobson *In Praise of Difficulty* 2016
In public and marketing documentation our discourse of the student experience has become interwoven with narratives of graduate success, images of student happiness, a sense of student entitlement and the friendliness and helpfulness of (providing) staff.
Sorry!
The lifestyle you ordered is currently out of stock.
Threshold Concepts
References

• Biesta, G. The Beautiful Risk of Education


