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# *Balancing research and traditional knowledge within integrative medicine education*


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# Integrative medicine in the era of evidence-based practice

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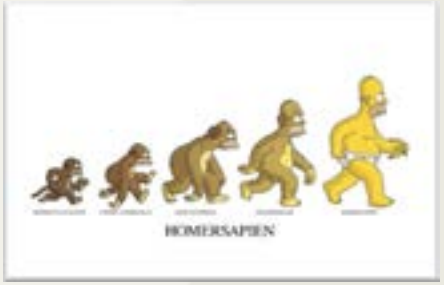
- Early 1990s: Evidence-based medicine proposed by Guyatt et al in the early 1990s (Guyatt et al. 1992)
- Late 1990s: Evidence-informed practice grew as a movement in the late 1990s (Hargreaves 2007)
- Late 1990s: The Lancet published a special edition on CAM stating "*there is no alternative medicine. There is only scientifically proven, evidence-based medicine supported by solid data or unproven medicine, for which scientific evidence is lacking*" (Fontanarosa & Lundberg 1998)

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# Time passed…

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# Integrative medicine in the era of evidence-based practice

- Mid 2000s: Core competencies in integrative medicine were developed for North America
  - which defined IM as: "*an approach to the practice of medicine that makes use of the best-available evidence taking into account the whole person…it emphasises the therapeutic relationship and makes use of both conventional and complementary/alternative approaches*"
  - Outlined a requirement for IM practitioners to describe the basic concepts of CAM treatments including current research evidence for efficacy and reputable sources for in-depth information

(Kligler et al. 2004)

# Integrative medicine in the era of evidence-based practice

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- Mid 2000s: A reflection on evidence-based medicine and naturopathy by Australian academics proposed that "*EBM does have a role to play in CAM…as part of the mix of evidence, and not as a gold standard of clinical practice and research*" and that "*traditionally based beliefs and practices are often marginalized and excluded by opponents and fellow practitioners keen to mainstream and/or scientize*"

  (Jagtenberg et al. 2006)

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# Where are we now?

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Practitioners

Students

Faculty

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# The practitioners' perspective

- Study design: semi-structured interviews with naturopaths (n=12) in clinical practice in south-east Queensland

  (Steel & Adams 2011)

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# Main findings

| Theme | Perception |
|---|---|
| What is traditional knowledge? | Disparate definitions including antique texts, oratory knowledge from lecturers, and recently published texts with content drawn from ancient texts |
| Validity of traditional knowledge | Authentic information source even in the absence of modern research |
| Validity and value of research | Affected by clinical transferability and absence of available research. Undermined by bias. |
| Science supports traditional knowledge | Research was proving traditional knowledge |
| Sciences undermines traditional knowledge | A focus on research was devaluing and eroding the role of traditional knowledge in modern practice |
| Linking science and tradition | Traditional knowledge can be used to direct research, and science can be used to explain traditional knowledge |

# The interface between tradition and science

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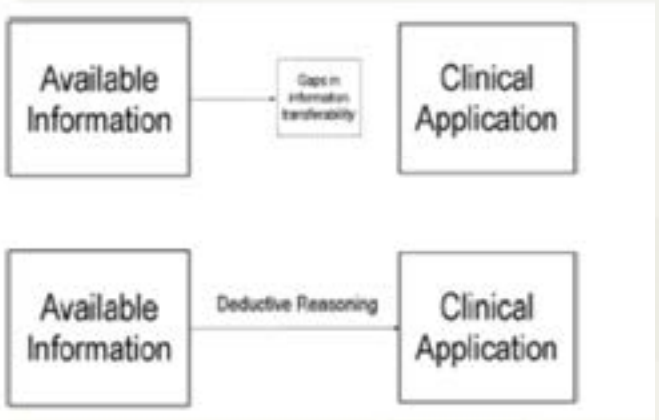


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# The perspective of students

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- Study design: Seven focus groups in Australian (n=3) and North America (n=4) involving a total of 29 students of naturopathic programs

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# Main finding

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# It’s all about balance

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*“I know one issue that comes out a lot amongst students as well as practicing doctors and kind of see everywhere the naturopathic world is kind of, as you put it there’s trying to find the balance between like practicing evidence based and also the traditional style. Like I feel like there’s the two extreme ends of the spectrum, one was just evidence based words. Much more conventional sort of medicine with a few extra sort of natural treatment thrown in. now the other end of the spectrum there’s people who really frown upon evidence based medicine almost like it’s a bad thing because their intuition tells them something else or… so in this regard research, and I’ve heard students and professors say that they actually disregarded research before because they contradicted their tradition and so they sometimes try to hush it out.” – Student, North America*

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# It’s all about balance

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*“Yeah I think that’s a really good point I actually had a bit of an existential crisis about my career choice halfway through school which is why I took a year off at the program. But when I came back you know the kind of balance I kind of reached was just kind of accepting that you know evidence based medicine has a lot of value but all it really does is kind of narrow things down first of all it doesn’t explain everything. Also it’s having lot of respect for these traditional healing methods.”* – Student North America

*“Combination of the science and I suppose still lack my common flaws lack I'd like to see and value traditional knowledge just as much as scientific in the assessments and all that because how would well philosophies this are, we value it just as much as so I suppose that’s where I'd like, that’s the main change.”* – Student, Australia

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# What kind of balance?

**The balance is about right:**

*"I think what gives us the advantage is that we're towards the things that allopathic doctors are toward, but we also have what nature has provided and what there is naturally."* – Student, North America

**More science is needed:**

*"I think that the education that we get is really great. I think that they do, they do definitely try and balance and they definitely, because I mean like luck when you go and you are trying to use these things you have to know, how they're being used, you need the mechanism you need to understand what to use them for and all that and they're just go out and say the law of signatures looks like these so it's going to do that. I don't really fly it from me either just because I do I want to know like exactly how these are going to work"* – Student, North America

# What kind of balance?

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**More tradition is needed**:

*"I think for me the scientific knowledge is less important, but I know that it's important to be taken seriously, as a healthcare professional. I know that it's important to know that, but I just think science knows so little. I'm pretty interested in all of the knowledge outside of that. We haven't dis-proven, we just haven't worked out scientifically yet."* – Student, Australia

*"If I was honest, I would like it more balance, more traditional"* – Student, North America

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# The perspective of faculty

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- Study design: semi-structured interviews (n=28) with naturopathic academic and professional leaders in North America and Australia

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# Main findings



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# Skills in critical appraisal of research

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*"I think the appreciation and the ability of our students to critically appraise an article, for example, and distinguish good research trial from one that has many, many flaws, from all of the, even non-scientific stuff that are all around the internet these days, I think their ability to critically think through and appraise those kinds of things has improved quite a bit, hence, it really is important that it has because there's so much information out there now that it's impossible for us to just give them context.*

*It's really helping them understand how to find the resources and sift through what's quality and what's not. I think we have evolved and improved in that regard."* (Karen)


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# Informing clinical decisions

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*"It may sound like a broken record but I think what are students need to understand is when they are choosing a therapy, understanding what the research is behind it and being able to speak to it"* (David)

*"Recognizing that study and it flaws and criticisms is important. It doesn't mean that you can't still teach about that therapy but you're aware of the existing evidence behind it and that if you're choosing to use this it is not been shown in the way to do this sort of things, it may still be doing other things or it may be doing this in a different way or this is maybe not the way that that therapy is being implemented or its close to it or its not but at least you know a piece of information."* (Robyn)


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# Filling the evidence-based gap

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*"..where you know we have a little bit of clinical evidence that supports our mechanisms but yet we don't have definitive clinical trials…how do you objectively evaluate your response clinically and what labs do you need to put into place and evaluate on which timeline to make sure it's actually doing what's its supposed to be doing and so that self critical evaluation of one's practice"* (Gae)

"*Truthfully evidence based medicine is meant to be mixing the best evidence with the current state and your clinical experience and coming up to a decision that's best to your patient and that implies traditional knowledge or experiential knowledge and trying to match it with scientific evidence that is known the fact of the matter is they rarely come together unless there is a triangle in the middle of the diagram."* (Robyn)

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# The traditional blind spot in the critical gaze

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*"One of things that students will need to be able to understand is how to borrow into the evidence so if the scientific evidence says something, is the population specific to the person I've got sitting in front of me? You know that's a big question how generalisable is the evidence, is the preparation the one that I'm going to actually be utilizing in the first place? You know this was done on a powder I'm using a fluid extract I mean what are those comparisons?"* (Alexia)

*"Yeah I mean, obviously they need the skills to be able to assess a paper and look at the relevance of that data to the case that they're looking and applying it to so they don't throw the idea out with the bath water from the point of view of saying, okay this is just a study saying it doesn't work for that so therefore its out all together you know let's have a look at it from another perspective is that herb ideally suited from a traditional perspective to that person for other reasons."* (Zara)

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# The traditional blind spot in the critical gaze

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*"I feel like the tendency is often when if research sort of contradicts the historical use, the tendency is usually to try to pick up part of the research integrate or criticize the research rather than to re-evaluate the traditional practice…and it's waved from the flag pole if it supports traditional practice you know despite it perhaps methodologically weaknesses."* (Gae)

*"I was sitting in a conference in with [eminent naturopaths] presenting about different herbs and [one speaker] was kind of highlighting a really important change, I can't remember honestly what the herb was but just a change in the traditional use and how we now think about it and how we prescribe it differently and an older practitioner who was sitting next to me who had apparently been in practice for a long time just kind of went, none of this really matters I'm just going to practice the way I was practicing and walked out."* (Tamara)

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# Teaching critical thinking

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"*In my view critical thinking is the most important thing to teach so that nothing that you read in a book and nothing that anybody says to you is taken at face value and it's taken me a while to cultivate that and its probably something that comes with maturity and so some of our school leaver type students may not come directly into that. That capability to look at things that way but I think really imparting to them the importance of always questioning everything and not taking anything at face value"* (Tamara)

*"You know we're talking about evidence based medicine, scientific medicine and traditional medicine like they're different things and they require different approaches and they don't, they just require critical thinking and I think if you're critical about the traditional knowledge forms you're using and you're equally critically about the scientific knowledge you're using then you going to end up with good reflective critical practice regardless."* (Zeus)

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# Teaching Critical Thinking

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"*The first classes need to actually be full of information about scientific papers, they need to be about the whole critical thinking process and about logic and about you know the application of logic to what people are doing you know I'd be teaching some sort of clinical components in the latter parts of that you know in terms of things like outcome raiser and you know base the concept behind basing in probabilities. While what you've done to them is taught them how to read a scientific paper you haven't actually necessarily improved their really critical thinking skill at all and so I'm an advocate and every time I get an opportunity to be an advocate I'm an advocate that there should be a course, a stream of critical thinking that can be identified at curriculum."* (Alexia)


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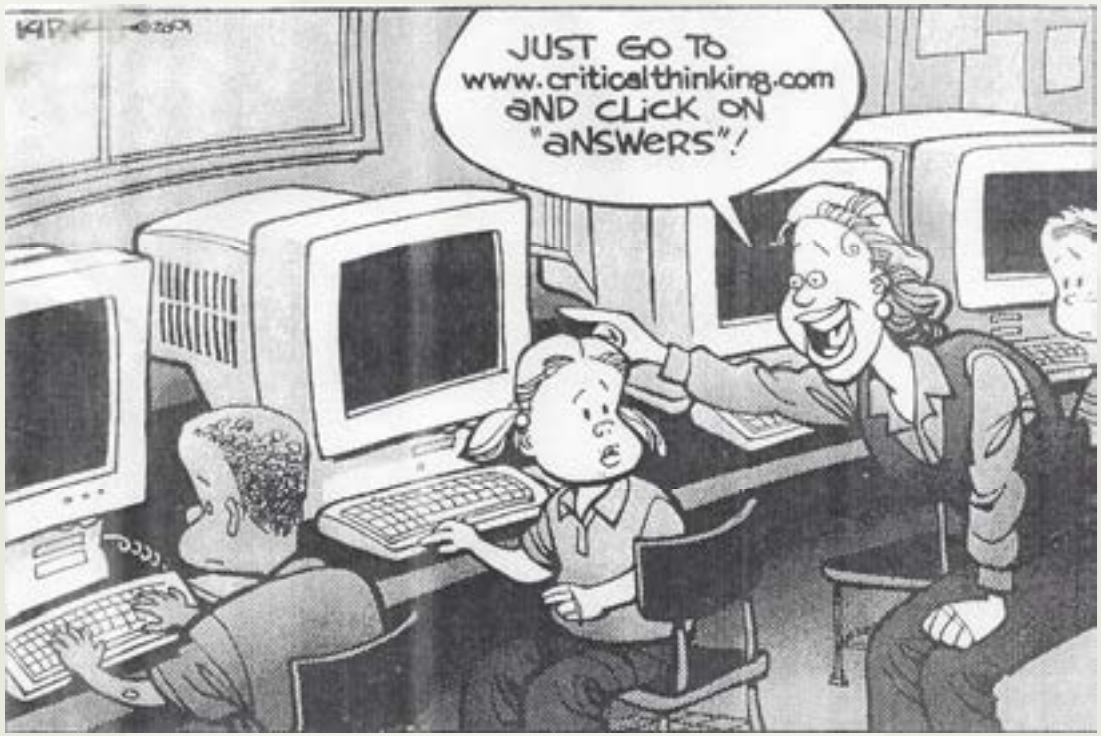
# Adding critical appraisal to the curriculum




A recent survey of UK medical students indicated 93% felt critical appraisal teaching was inadequate (Jaunoo & Adams 2016)

# Adding critical appraisal to the curriculum

Evidence-based healthcare competencies centre on research-based information sources, methods and approaches to evaluation.
(Young et al. 2014)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# Critical appraisal in integrative medicine curriculum

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# Critical thinking not critical appraisal

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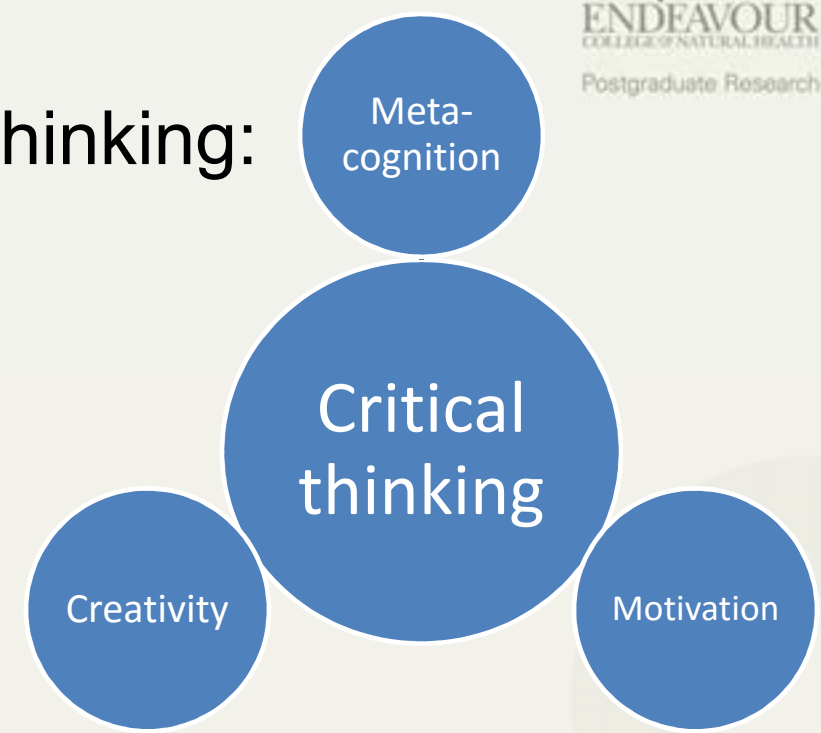
- Characteristics required for critical thinking:
  - Open-mindedness
  - Fair-mindedness
  - The propensity to seek reason
  - Inquisitiveness
  - The desire to be well-informed
  - Flexibility
  - Respect for, and willingness to entertain, others' viewpoint

(Lai 2011)

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# Barriers to critical thinking

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- Pattern-seeking
- Sense-making
- Preference to personal experience as evidence
- Emphasis on knowledge not thinking in education

(Lai 2011)

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# Take home points

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- Traditional knowledge does have a role in evidence-based practice for IM
- There is an acknowledged need for their to be a balance between science and traditional knowledge within IM education
- Critical thinking needs to be emphasised as a skill for students of IM

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# References


- Fontanarosa, P B & Lundberg, G D 1998, 'Alternative medicine meets science', *JAMA,* vol. 280, no. 18, pp. 1618-1619.
- Guyatt, G, Cairns, J, Churchill, D & et al. 1992, 'Evidence-based medicine: A new approach to teaching the practice of medicine', *JAMA,* vol. 268, no. 17, pp. 2420-2425.
- Hargreaves, D 2007, 'Teaching as a research-based profession: possibilities and prospects (The Teacher Training Agency Lecture 1996)', *Educational research and evidence-based practice,* vol., no. pp. 3-17.
- Jagtenberg, T, Evans, S, Grant, A, Howden, I, Lewis, M & Singer, J 2006, 'Evidence-Based Medicine and Naturopathy', *The Journal of Alternative and Complementary Medicine,* vol. 12, no. 3, pp. 323-328.
- Jaunoo, S & Adams, H L 2016, 'A Survey Showing the Need to Incorporate the Teaching of Critical Appraisal Skills in the Undergraduate Medical Curriculum', *British Journal of Medicine and Medical Research,* vol. 14, no. 12, pp.
- Kligler, B, Maizes, V, Schachter, S, Park, C M, Gaudet, T, Benn, R, Lee, R & Remen, R N 2004, 'Core Competencies in Integrative Medicine for Medical School Curricula: A Proposal', *Academic Medicine,* vol. 79, no. 6, pp. 521-531.
- Lai, E. R. (2011). "Critical thinking: A literature review." *Pearson's Research Reports* **6**: pp. 40-41.
- Steel, A & Adams, J 2011, 'The interface between tradition and science: Naturopaths' perspectives of modern practice', *The Journal of Alternative and Complementary Medicine,* vol. 17, no. 10, pp. 967-972.
- Young, T, Rohwer, A, Volmink, J & Clarke, M 2014, 'What are the effects of teaching evidence-based health care (EBHC)? Overview of systematic reviews', *PloS one,* vol. 9, no. 1, pp. e86706.


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