Editorial

Critical Thinking and PBL: What, Why and How?

At the most recent annual symposium on Problem-based Learning at Cheju Halla University,

I was asked to reflect on the concept of critical thinking for health professionals. For me, the relationship between professional practice, Problem-based learning (PBL) and Critical thinking is crucial to optimal client outcomes. However there are some of the challenges in defining critical thinking and the implications of this for the design of curriculum blueprints and approaches to learning and teaching.

There have been numerous attempts to identify the elements of critical thinking with many authors suggesting it not a singular ability. Rather it encompasses a set of behaviours which are underpinned by a disposition toward critical thinking (Facione & Facione, 1992).

Examination of some of the large volume of research that centres on the conceptualization of critical thinking within professional practice should lead the reader to an understanding of

i) why it is an essential element of graduate profiles within higher education

ii) how PBL philosophy and methodology incorporate elements that are thought to enhance critical thinking

iii) evidence that PBL processes appear to offer an integrated approach to the development of critical thinking which can be thought of as a suite of cognitive processes that underpin contemporary roles in professional, evidence based -practice.

There is some evidence that well designed PBL encourages students to develop what is broadly categorised as critical thinking (Kong et al 2014). Studies have been conducted in a range of countries including South Korea (Tiwari et al., 2006; Son & Song, 2012) and have examined various aspects of PBL and critical thinking. It has been determined that video material and simulation within PBL assists students to develop critical thinking abilities (Kamin et al., 2003) and hypothesised that the components of well designed and facilitated PBL enhance students' critical thinking disposition and thus enhance the likelihood of them thinking critically (Martyn et al., 2014). However, the evidence and quality of evidence is limited and there is need for more high quality research into PBL and Critical thinking (Worrel & Profetto-McGrath 2007; Yuan et al 2008).

In order to develop critical thinking abilities in students, educators need to have a sound and shared understanding of what critical thinking is in their discipline. Staff development needs to emphasise the role of staff

in designing PBL learning events that support the development of the suite of abilities categorised as demonstrating critical thinking (Park, Conway & McMillan, 2016). Moreover, staff who engage with students in teaching/learning situations need to be skilled in the Socratic questioning that is part of effective facilitation of PBL.

One can clearly see that critical thinking is considered a core component of professional practice. Curriculum developers and implementers are required to consider how critical thinking is explicated in practice as well as in learning and teaching. Students, clinicians and educators are encouraged to reflect on how they approach and demonstrate critical thinking in their work as educators as well as examine how they teach and assess critical thinking in their courses.

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References

Facione, N. C. & Facione, P. A. (1992). *The California Critical Thinking Disposition Inventory Test Manual (CCTDI).* Millbrae: California Academic Press. San Jose, CA: Insight Assessment.

Kamin, C., O'Sullivan, P., Deterding, R., Y (2003). A Comparison of Critical Thinking in Groups of Third-year Medical Students in Text, Video, and Virtual PBL Case Modalities. *Academic Medicine,* 78 (2) 204-211.

Kong, L., Qin, B., Zhou, Y., Mou S. & Goa, H. (2014). The effectiveness of problem-based learning on development of nursing students' critical thinking: A systematic review and meta-analysis. *International Journal of Nursing Studies,* 51(3), 458-469.

Martyn, J. Terwijn, R., Kek, M. & Huisjer, H. (2014) Exploring the relationships between teaching, approaches to learning and critical thinking in a problem-based learning foundation nursing course. *Nurse Education Today,* 34 (5). 829-835.

Park M.Y., Conway J., & McMillan M. (2016) Enhancing critical thinking through simulation *Journal of Problem Based Learning.* 3(1):31-40. doi:https://doi.org/10.24313/jpbl.2016.3.1.31

Tiwari, A., Lai, P., So, M. & Yuen, K. (2006), A comparison of the effects of problem-based learning and lecturing on the development of students' critical thinking. *Medical Education,* 40, 547–554. doi:10.1111/j.1365-2929.2006.02481.x

Son, Y. & Song, Y. (2012) Effects of Simulation and Problem-Based Learning Courses on Student Critical Thinking, Problem Solving Abilities and Learning. The *Journal of Korean Academic Society of Nursing Education,*18(1)43-52.

Worrel, J.A. & Profetto-McGrath, J. (2007) Critical thinking as an outcome of context-based learning among post RN students: A literature review. *Nurse Education Today,* 27(5), 420-426.

Yuan, H., Williams, B., Fan, L. (2008), A systematic review of selected evidence on developing nursing students' critical thinking through problem-based learning. *Nurse Education Today,* 28(6), 657-663.