

REFLECTIONS ON PRACTICE

Ill-Structured Problems and the Value of Comparable Perspectives

LEUNG Wing Sze

NUS College

Correspondence:

Name: Dr LEUNG Wing Sze

Address: NUS College, Level 1, Cinnamon West Learn Lobe University Town, 18 College Avenue East, Singapore 138593

Email: wleung@nus.edu.sg

Recommended Citation:

Leung W. S. (2022). Ill-structured problems and the value of comparative perspectives. *Asian Journal of the Scholarship of Teaching and Learning*, 12(2). 163-169.

<https://doi.org/10.24112/ajsotl.123170>

ABSTRACT

The pedagogical value of ill-structured problems in promoting learning has been widely discussed in the scholarly literature. Scholars have also proposed different strategies in developing students' cognitive skills in solving ill-structured problems. This Reflection extends the discussion of these strategies by focusing on one specific method, that is, incorporating diverse and comparable scholarly perspectives in the syllabus. This Reflection further argues that the presence of multiple scholarly perspectives can enhance students' ability to make independent judgments, because these perspectives can be compared and contrasted. Due to the room for comparison and contrast, students can better understand the strengths and weaknesses of individual scholarly viewpoints, and more actively make use of them to articulate their thoughts on how to respond to the ill-structured issue. The evidence for this argument came from the focus group discussions of a two-year study on a foundational module in one of the honours colleges at the National University of Singapore (NUS).

Keywords: Ill-structured problems, problem-based learning, comparable perspectives, scaffolding

PROBLEM-BASED LEARNING AND DIVERSITY IN VIEWPOINTS

Many studies on college students' cognitive development have pointed out the importance of ill-structured problems in developing higher-level cognitive skills. Ill-structured problems, by definition, can be challenging to define precisely or comprehensively and cannot be solved by the application of concepts or principles from any single academic discipline. Precisely because of that, the solution to such problems often involves comparing the different alternatives and selecting which is the most appropriate (Jonassen, 2004). This exercise can promote cognitive development, for it requires students to make independent judgments. For students accustomed to thinking of knowledge in dualistic terms, whereby there is a clear right or wrong answer, ill-structured problems present an important learning opportunity. Although cognitive development models suggest different pathways of development, the highest level of development happens when, facing different options and no absolute certainty in determining which is the best, students are able to determine which is a better option according to reasons and evidence, and justify their decision (Perry, 1997, 1999; King & Kitchener, 1994, 2004)

It is no surprise then that in studies on instructional strategies in problem-based learning (PBL), scholars have emphasised the importance for students to “recognize the divergent perspectives, collect evidence to support or reject the alternative proposals and ultimately synthesize their own understanding of the situation rather than find a solution for a prescribed problem” (Jonassen, 1997, p.79). In cases where students do not have the domain-specific knowledge, it may even be necessary for the instructor to provide the available alternative perspectives in the syllabus. Indeed, in the Development Instructional Model that L. Lee Knepenkamp came up with based on William Perry's scheme of intellectual development, one of the four key elements is “diversity,” which refer to the alternatives and perspectives presented and encouraged (1999, xxiv). This diversity can be introduced through the variety of readings in the syllabus. The importance of diverse perspectives in teaching is likewise noted in the scholarship on scaffolding. In Hanafin et al.'s (1999) categorisation of scaffolding, for instance, “strategic scaffolding” precisely aims at providing “alternative approaches that might prove helpful” (p. 133).

This Reflection will extend this discussion on the importance of diverse perspectives in the course readings in developing students' ability to make independent judgments about how to deal with ill-structured problems.

THE MODULE AND THE SPECTRUM OF SCHOLARLY PERSPECTIVES

The basis of my suggestions came from focus group discussions conducted for students of my module UWC2101F “Writing and Critical Thinking: Human Trafficking and Labour Migration” in AY2019/20 and AY2020/21. 24 students read the module each year, and about half of the students were invited to participate in focus group discussions after the semester was over¹.

The issue of low-skilled labour migration—whether trafficked or consensual—can be regarded as an ill-structured problem for two reasons. First, its causes are structurally complex. Neither the supply nor the demand of cheap labour can be directly explained by the actions of individual agents (e.g. consumers, traffickers) or policies of institutional agents (e.g. brokerage agencies). They need instead to be explained by the interaction between larger different structural processes, such as uneven development, the rise of educational standards in developed countries, the demand for cheap labour, the rise of the brokerage system and so on. It is challenging, however, to precisely and comprehensively identify all relevant structural processes and the nature of their interactions. In addition, because of the complexity of the causes and involvement of multiple stakeholders, the problematic treatment of the migrants—such as exploitation and human right abuses—is challenging to address and cannot be solved by any individual or standalone solutions.

Indeed, there is a diverse spectrum of scholarly accounts on how to tackle this issue, and one third of the module was devoted to studying these diverse theoretical responses. Students altogether read six different positions, ranging from utilitarian theories about the calculation of benefits and harms at one end, to theories of justice about basic moral entitlements at the other. At the end of each semester, students needed to write a research paper, formulate their own research question, and engage with—that is, extend and/or correct—at least one theoretical account from within the syllabus, and another theoretical account they looked up on their own. In other words, the theoretical readings within the syllabus were meant to give students some scholarly insights on how to make sense of and deal with the issue of low-skilled labour migration, so that they could formulate a more independent response in their research paper.

Both labour trafficking and consensual labour migration serve as a vehicle for students to understand the impact of uneven development and economic globalisation. Due to the nature of the supply chain, residents around the world may consume products produced by trafficked labour working in brick kilns in India or the Thai seafood industry (Kara, 2017). As citizens in Singapore, students may also benefit from contributions of migrant labour in their own country. Both phenomena, then, provide students a very good vantage point to examine how embedded their lives are in economic globalisation and how they should respond.

VALUE OF DIVERSE AND COMPARABLE PERSPECTIVES

In the focus group discussions, students were given a handout which summarised the six different scholarly positions they encountered in the semester. Data from the focus group discussions suggested that the spectrum of scholarly perspectives provided in the syllabus was valuable in a number of ways. First, students suggested that they found it helpful to know that there were different theoretical perspectives on the issue. The following comments shed light on, for example, the value of the spectrum in giving them the opportunity to think about what they would otherwise not think about, even when they do not necessarily agree with them. The exposure was beneficial:

“I think it’s always good that even if you do not necessarily agree, so called what is on the other end of the spectrum, or other views that they might like, you might find them maybe too practical, or too altruistic without being realistic, I think it’s *always good to consider more perspectives, and...more beneficial to be exposed to more of such theoretical positions.*”

“For me one of the most defining things was—like I guess the scope of the readings, because throughout the semester, the way [Prof] structured readings, it *swinged[sic] back and forth between different dynamics* of labour trafficking and labour migration...this process *gave me perspectives of what are the different possible views* that one can take towards this topic.”

Second, students did not only read the different scholarly perspectives as isolated from one another. The similarities and the differences between different positions actually allowed students to understand individual positions more clearly. The following comments, in particular, show how two students were able to better understand individual scholarly positions because they could compare and contrast them. While the first extract below shows that the student came to see the weakness of a theoretical position that they were initially very confident about, the second extract shows that the student was able to see the strength of another theoretical position. Either way, students’ comments demonstrated the exercise of higher cognitive skills: students compared the different approaches and made a judgment about their strengths and weaknesses (King & Kitchener, 1994):

“my position [was] utilitarian...[M]y initial reasoning for choosing Prichett, is I think, economy, like productivity, or utility, is the easiest way to quantify, I guess, like, indicators of quality of life...But

after reading all the different readings, up to Week 10...I realised that maybe...there [was] some dimension of economic activity, some dimension of our quality of life, which economic ability [could] not capture.”

“So the reason why I've chosen Stilz and Young is that I think, it firstly identifies there are various parties that are responsible for changing the...And collective change is I think, the most realistic way of looking at things. And secondly, *because the other authors*, they espouse for citizenship as an answer to the problems that [they] face, which I don't think...adequately address as a proper solution to the hardships that they face.”

Third, the comparison and contrast of multiple points of view allowed students to better understand the unique contributions of individual accounts and hence, the need for them to complement one another, so that the ill-structured issue could be more properly addressed. This ability to combine different positions served as an important marker of students' intellectual independence, for students were not passively relying on scholars to spoon-feed them with proposals, but on the contrary were constructing slightly different proposals. The ability to combine opposing perspectives, in addition, revealed their cognitive ability to identify compatibilities despite obvious differences (King & Kitchener, 1994). In both of the following comments, students were combining scholarly perspectives which are sufficiently different in their aim and approach:

“when I read Walzer, I thought he was overly optimistic and un-practical[*sic*]. But at the same time...I think it would be nice if we could just take a step back and perhaps just adopt 10% of his mindset...it would be *nice to find a balance between Prichett and Stilz's kind of mindset and also insert a bit of Walzer...*”

“I think Young is very idealistic and I kind of like that and it's true. Because I feel that if the general population doesn't really react or show optimism or fight for change collectively, there'll be no change...But then again, like, I think Young[']s proposal] is like a process, it doesn't happen overnight...So I think it's *important to complement it with like, the theory of Stilz*. So before we achieve the idealistic state, it's always important to like protect their very basic and certain rights.”

Fourth, the following comments show how one student was able to synthesise the different theoretical positions and draw out further implications from the spectrum of theoretical positions as a whole. This activity again demonstrated a higher cognitive skill in combining different approaches into a system or framework that generated further conclusions:

“[B]ecause of this multitude of positions, you start to realise that no matter what approach you decide to take in the end in addressing any particular issue, it's not entirely possible or realistic to say that that one approach or solution will benefit everyone involved...[or] solve every single problem. At least for me, I start to realise that...it's *more about what compromises are you willing to make* in order to sustain the labour needs of the countries.”

Before I conclude this section, I would like to add one more reason to explain the advantage of incorporating comparative perspectives in the readings on ill-structured issues: academic freedom. By default, ill-structured issues open themselves up to multiple scholarly perspectives, and it is possible that different students may find different views more attractive. Instituting the room for differences in the syllabus sends students the important signal that if scholars hold different views, students should also have the academic freedom to hold different views and to respect others' views. The following comments touch on the academic freedom students felt in the module:

“Because Prof Leung *didn't really sort of force her opinion on us*, whereas she *allowed us to take our own stand and figure our own positions*. And she *gave us a wide range of options*, from like very [...] I don't know how to describe the stances but like a wide range of them and allowed us to pick where do we lie on the spectrum.”

“And I felt like at the end when we had to write [the research paper], *the freedom that [Prof] gave us towards the end was rather liberating.*”

RECOMMENDATIONS FOR TEACHING

In their study of how learning takes place, Bransford et al. (2001) suggest that “[a]ppropriately arranged contrasts can help people notice new features that previously escaped their attention and learn which features are relevant or irrelevant to a particular concept” (p. 60). In Bloom's learning taxonomy, comparing and contrasting are some of the fundamental learning outcomes, the achievement of which can help students achieve the learning outcomes at the higher levels (Anderson et al., 2001). Indeed, the data from the focus group discussions on my module has confirmed that because students could compare and contrast the different theoretical positions, they could better understand the characteristics, strengths, and weaknesses of individual positions, and as a result, formulate more refined positions and drawn conclusions that scholars have not proposed. I have shown, in addition, that the exercise of comparison and contrast activated higher cognitive skills, such as identifying commonalities between opposing views, evaluating the validity of individual positions, and determining which views are more reasonable. Finally, I have suggested that the presence of diverse and opposing perspectives signals to students that they have the academic freedom to make their own independent judgment.

In order to facilitate students' judgment on the ill-structured issue, then, it is good to equip them with a range of different scholarly perspectives on how the issue should be addressed. Admittedly, how large the spectrum should be varies from case to case. In addition, there are different means to implement the goal of comparison and contrast, such as a comparative writing assignment or in-class learning activity. What is more, there are different ways to incorporate what Knefenkamp (1999) and Hannifin et al. (1999) call the “diversity” in approaches to the problem studied. Aside from diversity in the readings, diversity in students' views—as can be manifested in class discussions and peer review exercises—is important. The claim that this Reflection is trying to make is a more circumscribed one, namely, that the presence of multiple scholarly positions in the syllabus can enhance students' ability to make judgments about how to address the ill-structured problem, and that this process of comparing and evaluating the different perspectives can develop higher cognitive skills.

ENDNOTE

1. The focus group discussions were conducted as part of an educational research project funded by the NUS CDTL Teaching Enhancement Grant (2019-2021) and the NUS University Scholars Programme. The main findings will be published on a separate occasion.

REFERENCES

- Anderson, L. W. (Ed.), Krathwohl, D. R. (Ed.), Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives*. Longman.
- Bransford, J., Brown, A. L, & Cocking, C. R. (Eds.). (2001). *How people learn: Brain, mind, experience, and school*. National Academy Press.
- Hanafin, M., Land, S., & Oliver, K. (1999). Open learning environments: Foundations, methods, and models. In C. M. Reigeluth (Ed), *Instructional-Design Theories and Models, Vol. II: A New Paradigm of Instructional Theory* (pp.115-140). Routledge.
- Jonassen, D. H. (1997). Instructional design models for well-structured and ill-structured problem-solving learning outcomes. *Educational Technology Research & Development*, 45(1), 65-94. <https://www.jstor.org/stable/30220169>
- Jonassen, D. H. (2004). *Learning to solve problems: An instructional design guide*. Pfeiffer.
- Kara, S. (2017). *Modern slavery: A global perspective*. Columbia University Press.
- King, P. M., & Kitchener, K. S. (1994). *Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults* (pp.44-74). Jossey-Bass Publishers.
- King, P. M., & Kitchener, K. M. (2004). Reflective judgment: Theory and research on the development of epistemic assumptions through adulthood. *Educational Psychologist*, 39(1), 5-18. https://doi.org/10.1207/s15326985ep3901_2
- Knefenkamp, L. Lee (1999). Introduction. In W. G. Perry (Ed.), *Forms of Intellectual and Ethical Development in College Years* (pp. xi-xxx). Jossey-Bass Publishers.
- Perry, W. G. (1999). *Forms of Intellectual and ethical development in college years*. Jossey-Bass Publishers.
- Perry, W. G. (1997). Cognitive and ethical growth: The making of meaning. In K. Arnold & I. C. King (Eds), *College Students Development and Academic Life: Psychological, Intellectual, Social and Moral Issues* (pp. 48-88). Garland Publishing. ■

ABOUT THE AUTHOR

LEUNG Wing Sze (Dr) is a Senior Lecturer at the NUS College, and teaches the “Thinking with Writing” foundational module as well as the Impact Experience Programme. Her research interests include moral theories, multiculturalism, colonial studies, globalisation, relation between ethics and aesthetics. Wing Sze has also published in the *Journal of Aesthetic Education*, *Interdisciplinary Literary Studies*, *Romanticism and The Cambridge Guide to the Eighteenth-Century Novel 1660-1820* (forthcoming), *Educational Theory* (forthcoming).

Wing Sze can be reached at wleung@nus.edu.sg.