Thinking like a Sociologist, but how? Using Reflective Worksheets to Enhance Metacognition in a Classroom with Diverse Learners

Mabel Ho, Katherine Lyon, Jennifer Lightfoot, and Amber Shaw
University of British of Columbia

Background and Motivation for Using Reflective Worksheets in Introductory Sociology

Research shows that for first year students in particular, lectures interspersed with active learning opportunities are more effective than either pedagogical approach on their own (Harrington & Zakrajsek, 2017). In-class reflection opportunities are a form of active learning shown to enhance cognitive engagement (Mayer, 2009), critical thinking skills (Colley et al., 2012), and immediate and long-term recall of concepts (Davis & Hult, 1997) while reducing information overload which can limit learning (Kaczmarzyk et al., 2013). Further, reflection conducted in class has been shown to be more effective than outside of class (Embo et al., 2014). Providing students with in-class activities which explicitly teach metacognitive strategies has been shown to increase motivation, autonomy, responsibility and ownership of learning (Machaal, 2015) and improve academic performance (Aghaie & Zhang, 2012; Tanner, 2012).

We created and implemented reflective worksheets in multiple sections of a first-year sociology course at a large research university with a high proportion of international English as an Additional Language (EAL) students. While all first-year students must learn to navigate both the academic and disciplinary-specific language expectations of university, for many international students additional barriers may exist. For these students, new expectations must be achieved through their additional language and with possible diverse cultural assumptions, such as being unfamiliar with active learning and thought processes privileged in a Western academic institution. With both domestic and international students in mind, our aims with these reflective worksheets are to:
- facilitate and enhance students' abilities to notice and monitor disciplinary awareness and knowledge while promoting disciplinary comprehension and practices.
- connect course material to personal experiences (micro) and social trends (macro).

Nuts and Bolts: Method

We structured individual writing reflection opportunities every 10-15 minutes in each lecture in the small (25 students), medium (50 students) and large (100 students) classes. Each lesson

Author Contact Information: Mabel Ho, Department of Sociology, University of British Columbia; Katherine Lyon, Department of Sociology and Vantage One, UBC; Jennifer Lightfoot, Academic English Program, Vantage One, UBC; Amber Shaw, Academic English Program, Vantage One, UBC

was one hour and students completed the worksheets during class time in five-minute segments. The worksheets had different question prompts designed to help students:

- identify affective and cognitive pre-conceptions about topics
- paraphrase or explain concepts
- construct examples of concepts just learned
- contrast terms
- describe benefits and limitations of social processes
- relate a concept to their own lives and/or cultural contexts
- discover connections between new material and prior knowledge (Muncy, 2014)
- summarize key lecture points (Davis & Hult, 1997)
- reflect on their own process of learning (see Appendix 1 for further examples)

The question prompts are indicative of *how* to think about a topic, rather than *what* to think. These reflective worksheets are a way to teach students to think like disciplinary specialists in sociology, which align with the course learning outcomes. Completed worksheets were graded by Teaching Assistants (T.A.) who used the rubric below (see Table 1) to assess students' application and critical thinking skills. By framing the worksheets as participation marks, students' were motivated to complete the assigned work while learning how to approach sociology as a discipline. As suggested in "promoting conceptual change" (Tanner, 2012), some of the worksheets required students to recognize their preconceived notions and monitor their own learning and re-learning. For example, in one of the worksheets, students tracked their own preconceptions about a social issue (e.g. marijuana usage) in the beginning of the lecture and they returned to the same question at the end of class. Through this process, a student can have a physical record of his/her evolution of beliefs, whether it be recognizing and adjusting pre-conceived notions or deepening justifications for beliefs.

Table 1: Sample Assessment Rubric

3	2	1
Entry is thoughtful, thorough and specific. Author draws on relevant course material where appropriate. Author demonstrates original thinking. Entries correspond to questions asked.	Entry is relevant but may be vague or generic. Author could improve the response by making it more specific, thoughtful or complete.	Entry is unclear, irrelevant, incomplete or demonstrates a lack of understanding of core concepts.

Outcomes: Lessons Learned

We found the reflective worksheets were effective because they gave students time to think about what they were learning and, over time, increased their awareness of disciplinary construction of knowledge. As instructors, the worksheets were a useful tool in monitoring students' learning and 'take away' messages from the lectures. We also utilized the worksheets as a starting point in the next lecture to clarify any misunderstandings.

Overall, we found that while the reflective worksheets seemed to be appreciated by all the students, EAL students specifically benefitted from the worksheets in a number of ways.

First, the guided questions gave students additional time to think about the topic on hand and preparation time before classroom discussion. Instead of cold-calling students, this reflective time allowed students' to gather their thoughts and think about what they just learned in an active way. Second, students were able to explore the structure of academic discourse within the discipline of sociology. As students learn through different disciplinary lenses, these worksheets reveal how a sociologist will approach a topic. In our case, international EAL students are taking courses such as psychology, academic writing, and political science. Each of these disciplines engages with a topic using a different lens and language, and having the worksheet made the approach explicit. Last, the worksheets allow students to reflect on both the content and the way language is used within sociology. For example, the worksheets gave students time to brainstorm and think about what questions are explored from a disciplinary perspective and what counts as evidence. Furthermore, when given time to reflect on the strength of disciplinary evidence, students can then determine which language features may be most appropriate to present evidence, such as whether the use of hedges (may indicate, possibly suggest, etc.) or boosters (definitely proves) would be more appropriate. When working with international EAL students, it becomes extremely important to uncover language features so students can in turn take ownership of those language features in their own language use. Looking forward, these worksheets can help guide both EAL and non-EAL students' awareness of how knowledge is constructed in the discipline and how language can be used to reflect and show their disciplinary understanding.

REFERENCES

Aghaie, R., & Zhang, L. J. (2012). Effects of explicit instruction in cognitive and metacognitive reading strategies on Iranian EFL students' reading performance and strategy transfer. *Instructional Science*, *40*(6), 1063-1081.

Colley, B. M., Bilics, A. R., & Lerch, C. M. (2012). Reflection: A key component to thinking critically. *The Canadian Journal for the Scholarship of Teaching and Learning, 3*(1). http://dx.doi.org/10.5206/cjsotl-rcacea.2012.1.2

Davis, M., & Hult, R. E. (1997). Effects of writing summaries as a generative learning activity during note taking. *Teaching of Psychology*, *24*(1), 47-50.

Embo, M. P. C., Driessen, E., Valcke, M., & Van Der Vleuten, C. P. (2014). Scaffolding reflective learning in clinical practice: a comparison of two types of reflective activities. *Medical teacher*, *36*(7), 602-607.

Harrington, C., & Zakrajsek, T. (2017). *Dynamic Lecturing: Research-based Strategies to Enhance Lecture Effectiveness*. Stylus Publishing, LLC.

Kaczmarzyk, M., Francikowski, J., Łozowski, B., Rozpędek, M., Sawczyn, T., & Sułowicz, S. (2013). The bit value of working memory. *Psychology & Neuroscience*, *6*(3), 345-349.

Machaal, B. (2015). Could explicit training in metacognition improve learners' autonomy and responsibility? *Arab World English Journal, 6*(1), 267.

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). New York, NY: Cambridge University Press.

Muncy, J. A. (2014). Blogging for reflection: The use of online journals to engage students in reflective learning. *Marketing Education Review, 24*(2), 101-114. doi:10.2753/MER1052-8008240202

Tanner, K. D. (2012). Promoting student metacognition. *CBE-Life Sciences Education*, *11*(2), 113-120.

APPENDIX 1 – TYPOLOGY OF REFLECTION PROMPTS

- the prompt order follows Bloom's cognitive and Krathrowl's affective domain of learning

Type of prompt	Justification	Example (*italics indicate answers*)
Bridge	Review of prior material Making connections between lectures and units across the course within sociology (and cross-disciplinary) Identifying missing information	Do you have a question from last lecture?
Identifying own bias/incoming perceptions/assumptions	Help students recognize their own biases and assumptions	On a scale from 1 to 10, do you agree with Canada legalizing marijuana?
Paraphrasing key concepts	Aid critical thinking, understanding, and memory Paraphrasing as a metacognitive component: being aware of your novice voice / participating as a novice scholar Ownership of the material Improve students' communication skills	If you had to explain "medicalization" to a friend who skipped class, what would you say?
Exemplifying	Prepares students to connect abstract concepts to concrete examples within disciplinary and personal contexts	Locate the definition of "medicalization" from the textbook. Use the term "medicalization" in relation to child birthing processes. Come up with your own example of how "medicalization" connects to something in your own life.
Interpersonal positioning	Prepares students to identify any evaluative language that indicates an opinion or attitude from the writer	Describe two positive and two negative outcomes of "medicalization", using evaluative language. Example: *"The <u>dangerous</u> trend of medicalization has led to the commodification of illness."*
Comparing and	Helps students see larger	Describe the differences

contrasting terms, concepts and ideas	connections between course material Ownership of material Discover nuances Makes cross-disciplinary intersectionality	between "race" and "ethnicity" Describe the differences between the "biomedical" and "social" models of health Describe the differences between "sex" and "gender"
Making connections	Connecting new knowledge to existing knowledge Mind-mapping	What is one course concept this reminds you of or relates to "medicalization"?
Summary and identifying core information	Organizing information into knowledge hierarchies	If you were going to write a multiple-choice question based on the last 10 minutes of class, what would you write?
Multidisciplinary thinking	Clarify disciplinary assumptions, expectations, and boundaries	What is one question a psychologist might ask about "medicalization", and why?
Affective learning	Identify shifts in own perspective and assumptions	After unit X, on a scale from 1 to 10, do you agree with Canada legalizing marijuana?
Role-taking	Ability to empathize; appreciate others' lived experiences	Describe five reasons why an individual may use marijuana.
Shifting scales of analysis	Becoming aware that personal experiences are tied to social structures; Separate personal experience from societal trends (e.g. seeing both overlap and distinctions)	Identify three reasons why Canadian provinces have different rates of marijuana use per capita
Key Takeaway	Organizing information into knowledge hierarchies Begin planning for post-lesson studying Memory	What is the main take-away from this lesson?