Highlighted Literature Reviews

The attached PDFs show two SoTL articles with their **literature review sections highlighted**. These examples illustrate two common approaches you might take when presenting your own inquiry:

- **Bloch-Schulman (2016)** – a more narrative, free-form approach, where the literature review is woven throughout the discussion.
- **Chan, Sidhu, Suthagar, Lee, and Yap (2016)** – a traditional IMRaD structure, where the literature review appears up front in the introduction.

Neither format is "better" than the other—they reflect different disciplines, styles, and ways of framing inquiry. In both, notice how the authors engage sources with depth and intentionality, moving beyond lists of citations to show how prior scholarship informs their work. The highlights are meant to help you see where and how authors represent the existing conversations they're entering, so you can begin thinking about the choices you'll make in your own SoTL writing.

Full Citations

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Chan, Yuen Fook, Gurnam Kaur Sidhu, Narasuman Suthagar, Lai Fong Lee, and Bee Wah Yap. 2016. "Relationship of Inquiry-based Instruction on Active Learning in Higher Education." *Pertanika Journal of Social Science & Humanities* 24, 55–72. http://www.pertanika.upm.edu.my/resources/files/Pertanika%20PAPERS/JSSH%20Vol.%2024%20(S)%20Oct.%202016/05%20JSSH%20Vol%2024(S)%20Oct%202016_0263-2016_pg55-72.pdf.

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A Critique of Methods in the Scholarship of Teaching and Learning in Philosophy

ABSTRACT

The goal in this article is to offer a vision for a scholarship of philosophical learning that philosophers find plausible and helpful and that utilizes our disciplinary skills and knowledge to produce useful insights into how students learn philosophy. Doing so is a challenge because philosophers typically and historically conceive of our work as being properly done in the proverbial armchair, that is, done without being tied to empirical data. To begin, I look at three common types of philosophy pedagogy research and I show ways that each can be done well and the limitations of each. Ultimately, I argue that, while useful and revealing in some ways, the techniques typically fail to illuminate where philosophy students are in learning the habits, dispositions and skills that are most typically associated with the discipline. Arguing that to understand students in these ways requires observation, and thus, non-armchair methods, I briefly explore the use of think alouds, arguing that they offer one viable path to a scholarship of learning in philosophy that would allow philosophers to both observe and to use our own disciplinary skills to make the thinking of our students visible in ways that will help us be clearer about how student and expert thinking differs so we can better determine how to help them improve.

KEYWORDS

philosophy pedagogy, methods, think alouds, armchair philosophy, critique

I regularly attend both Scholarship of Teaching and Learning (SoTL) and philosophy pedagogy conferences and typically leave frustrated because of what I see as methodological weaknesses that are common in both milieus. My primary purpose in this article is to focus on the philosophy pedagogy side, highlighting the possibilities and problems that typically exist in the disciplinary pedagogy literature and in the habits of philosophers as they practice and talk about teaching—and when they talk about pedagogy, they do overwhelmingly talk about teaching rather than talk about learning (Bloch-Schulman, 2012)—and to offer a vision of how to move forward toward more student and student learning-centered pedagogy research in philosophy. By focusing on these possibilities and problems in philosophy pedagogy, along the way I note (but do not explore in detail) a missed opportunity which hurts the overall project of SoTL.[1] In more positive terms, I think that philosophy needs the student-focus of SoTL and that SoTL would benefit greatly from some of the questioning critique and distinction-making that philosophers offer.

After describing briefly in very general terms the way most philosophy is done within institutions of higher education, I articulate and critique three typical approaches to doing philosophy pedagogy research: 1. through the adoption and use of scientific and social scientific methods, 2. through the application of scientific and social scientific knowledge discovered outside of the philosophy classroom to philosophic settings, and, most popularly, 3. exclusively in the proverbial armchair. I do not take these

to be a hard-and-fast distinctions; much research is done blending these and, as I will show, work in the armchair shows up in unexpected ways throughout. I contend that each of these can be done well, and when done well, each has a value both for philosophy and its teaching, and also for the study of teaching and learning more broadly. I will also argue how each of these are limited and can, and often do, go wrong by ignoring the appropriate limits, costs of these limits, and the problems when they are not adhered to. In the end, I argue that all three fail to forefront a way of observing our students and thus fail to give us sufficient insight into their philosophic learning, and suggest a specific way that philosophers can adopt and adapt SoTL methods for the study of philosophic learning; specifically, I do this by arguing for, and showing an example of the use of, think alouds to highlight differences in reading practices of philosophy majors and professional philosophers.

A caveat before I begin: I write from the context of philosophy within the United States of America, and speak about philosophy and its pedagogical research within this space. In addition, I am not interested here in theoretical arguments about what philosophy ought to be or what it is in theory; I take philosophy as it is practiced, specifically as it appears in our classrooms, as we, as philosophers, are trained to practice it through our teaching of it within the academy, and as we describe and enact it in our pedagogical research. I expect that the description will more easily fit some other contexts (e.g., other English-speaking, Western contexts, like Canada), and will fit less for philosophy and its pedagogical research done differently and in different contexts.

PHILOSOPHY AS TRADITIONALLY DONE FROM THE ARMCHAIR

It is impossible to talk in general terms about the current state of philosophical pedagogy in the US without giving a short, incredibly general context about philosophy as it is typically practiced within the US. Overwhelmingly, even across incredibly diverse areas of interest, commitment, and specialization, contemporary philosophy is done in, as Timothy Williamson describe it, the armchair. By that, he means that philosophy "consist[s] of thinking, without any special interaction with the world beyond the chair, such as measurement, observation or experiment would typically involve" (Williamson, 2007, p. 1). He explains the reason for this: "For good or for ill, few philosophers show much appetite for the risky business of making predictions and testing them against observation, whether or not their theories in fact have consequences that could be so tested" (Williamson, 2007, p. 1). As I will show in the discussion of the three typical ways philosophers engage with teaching and learning, this vision of how philosophy ought be done casts a huge shadow over the way philosophy pedagogy is conducted and taken up, which I discuss in the following three sections.

An example might help: in "Knowledge, Understanding and Pedagogy," James Digiovanna argues that we need to be clearer about what we mean when we claim that a student "knows" something, and that common ways of thinking about knowing are pedagogically insufficient (Digiovanna, 2014).[2] In particular, he takes up the question of whether a quite common understanding of knowledge, that it is justified, true belief, meets our pedagogical needs. He argues through a thought experiment, by offering a case where we recognize a student having a justified, true belief who fails to achieve the kind of knowing we want our students to have. He starts by imagining a student who comes to have a justified, true belief that "Fermions have half-integral spin" (Digiovanna, 2014, p. 327). What is interesting about this justified, true belief, in this case, is that it is justified purely on the basis of appropriate authorities: this student's instructor who is a renowned expert in the field and other highly reputable resources and experts all agree. The rub, though, is this: for this thought experiment, the student does not know what a fermion is, or what it would mean for a fermion to have a half-integral spin. Yet, the student still has, Digiovanna argues, a justified, true belief. He argues, and I suspect he is right, that as teachers, we think

this is insufficient; specifically, we would want a student to understand what fermions are, what "half-integral spin" means, and what it means that fermions have such a quality. We can, as Digiovanna argues, thus imagine "incrementally increase[ing] the degree of understanding," recognizing that the student can meet the threshold of knowing and not understand at all, can know and understand somewhat, or can know and understand at a high level (Digiovanna, 2014, p. 328).

We see from Digiovanna's work, two things. First, we see an example of an argument from the armchair; and, I would add, a compelling one at that. His method for arguing that we should not accept justified, true beliefs as our pedagogical understanding of knowledge is through thought experiment, and includes no necessary empirical claims. Second, his work shows something important that philosophy and philosophers do that would help SoTL more generally, namely, making finer distinctions that would help SoTL work be clearer and less equivocal. If we do not articulate clearly what meaning of "know" we are using (and why), we are likely to find some pedagogical techniques, for example, that lead to justified, true belief but not understanding, and others that lead to justified, true belief with understanding, and we might not see why some of these techniques are preferable to others.

METHODS OF PHILOSOPHICAL PEDAGOGY: A CRITICAL ANALYSIS

Philosophy pedagogy research through the use of scientific methods

Though, in my experience, it is still very rare, there is some, and recently there has been an increase in, the use of traditional scientific and social scientific methods in studying philosophy pedagogy. In one particular area, the use of scientific methods seems to me to have increased in philosophy pedagogy research in recent years. Specifically, there is an increasing and increasingly important use of social scientific methods in the study of inclusiveness—or lack thereof—in philosophy (within the profession, at graduate schools and for undergraduate programs).

While I will not focus on this type of research more broadly, as it fits into existing paradigms within SoTL generally, I have three notes as it pertains to philosophy pedagogy research conducted using traditional social scientific methods: 1. When done well it can be quite useful; for philosophers, this typically means that it is used to study topics that admit of large-sample data analysis and that it is done by people who are trained to do such work. For almost all philosophers who might wish to produce research of this type, outside help is needed: they must rely on the expertise of the rare philosopher who is trained in these methods (e.g., Baron, Dougherty and Miller, 2015, relied on Baron's expertise in this area) or collaborating with someone in another discipline entirely (e.g., Concepcion et al., forthcoming, relies on Messineo, a sociologist), to perform the analysis and make sense of the statistics. 2. Even when there is a philosopher who has statistical skills, there is still a crucial role for "work from the armchair," as it is still necessary to think carefully and precisely about what the research takes as its guiding questions and how the research fits into the larger discussion of teaching and learning (Schouten, 2015). These are, no doubt, practices that scientists and social scientists engage in, as well. But they are armchair roles, nonetheless, and they are skills that philosophers are particularly trained for. It might be, in fact, that because philosophers do not typically spend any time learning other methods and are judged merely on armchair analyses, that they are particularly (though, of course, by no means, uniquely) well-suited to this do this type of work. 3. Though the numbers seem to be growing, it is still a very small minority of philosophers who are trained to do statistical anaylsis because armchair thinking remains such a powerful norm within philosophy. One important implication for philosophy pedagogy done using statistical anaysis is this: most philosophers are left without much insight in judging the quality of the work in the terms in which it was produced—that is, we can make sense of the conclusion, but are unable and unlikely to be in a position to judge the merits of the data and the analysis that justifies the

conclusion offered. Utilizing a method that is foreign to its readership makes it likely that the conclusion is acccepted without further examiniation of the argument and evidence that justified the conclusion (which, as the think alouds below will show, is odd for philosophers) or is rejected, dismissed or ignored out of hand, also without a full engagment in the research and evidence.[3] Thus, if researchers are trying to do work that impacts teaching practices, work of this type is likely to play a small role (for at least the forseeable future).

Philosophy research through the application of scientific findings

Another way that philosophy pedagogy utilizes scientific methods is through the application of findings in other disciplines (e.g., cognitive science, psychology) to the philosophy classroom. This is, in my experience, becoming more common, but is still fairly rare, especially at philosophy pedagogy conferences or presentations. As I will argue, the best research in philosophy pedagogy that applies what is learned elsewhere to philosophy is attentive to the research in other fields that is available, understands this research deeply, and judges wisely the insights from elsewhere that can best be adapted for use within philosophy classrooms. Ideally, this is not merely to connect research to learning *simpliciter*, as if learning in and across disciplines has the same goals, problems, and challenges. For example, if the discussion above about the typical "armchair" nature of philosophy distinguishes it from much—though as I argue, by no means all—empirical work, some pedagogical techniques that will be effective in a philosophy class will be quite different, in at least some important respects, than what works in other classrooms. I do not want to overstate the differences, though. As Galileo and Einstein sufficiently showed in the work they did from the armchair, armchair work can have unbelievable important impacts on even the most natural and "hard" sciences. And, as I will argue below, while application of general results to specific contexts is necessarily done in every discipline, it requires non-empirical, non-scientific ways of thinking and judging.

In addition, at its best, research through application of findings to novel contexts does not merely apply some general understanding of learning to "the philosophy" classroom, as if there is one site for the teaching of philosophy and one generic student population; rather, the best of this research recognizes that, as Alexandra Bradner articulates in her "Teaching Modernity in Appalachia," any "class is a community primed in a particular way; and we ought to think about that when designing our syllabi, ordering texts, and writing assignments, even if it means straying from, neglecting, and, in the end, complicating the storied themes of modernity" (2008, 231) or other traditional conceptions of what we ought to teach and how. In other words, the best of this type of research is attentive to how it is, and often is not, relevant to the pedagogical needs of "specific groups of students" (Bradner, 2008, p. 235).

One might ask, though: if the empirical research is, in this type of pedagogy research, done by applying the insights of social and natural scientists, how is this research philosophical at all? This type of applied research would seem, at first glance, indistinguishable from how those in social and natural sciences, or in professional programs, would apply general conceptions of learning to their own contexts. In her work on judgment, Hannah Arendt highlights the challenges with moving from the general to the concrete case,[4] arguing that this move is always a move of judgment, not of knowledge, because there cannot be rules to determine how to apply the general to the particular. There cannot be rules to govern the application because, in the very least, those rules would themselves be in need of rules to determine when to apply them, which would themselves need rules to determine when to apply them, thus leading to an infinite need for rules (Arendt, 1978, p. 69 and 223 n. 3.). In our context, it follows that applying a finding from one context to another requires something that cannot itself be determined scientifically. For example, Plant et al.'s work on "deliberate practice" is based on certain kinds of activities, such as

learning how to play tennis (Plant, Ericsson, Hill, & Asberg, 2005). In terms of the classroom, unless the class is tennis, in every case, the analogy between tennis and the activity being taught will include some similarities (there is an attempt to learn something) and some differences (even if it is another sport, there will be different goals and different techniques to meet those goals). One will always have to ask: does the general fit *here*, for *this* task? As Arendt further noted, there is always a need to make judgments about the applicability of the general because something new is always possible (new students, new context, and even the instructor changes as a person through time); that is, it is always necessary to determine if the findings that were shown valid elsewhere, at a different time and in a different context, fit in always new (or potentially new) circumstances. Thus, Bradner's admonishment is generalizable: it is not just teaching Modern Philosophy that needs to be re-thought in Appalachia, but there is always the need to think through and judge how the general fits in one's own context. Making these determinations requires armchair work.

In other words, what we need is not merely pedagogic knowledge—though we clearly do need that—but, also, pedagogic judgment. Furthermore, this pedagogic judgment cannot be reducible to something knowable; even as it ought rest on the knowable, it always, and by its very nature, exceeds the knowable. Thus, when philosophy pedagogy research that applies findings from other disciplines is done well, philosophers have studied widely in the scholarship of teaching and learning and have used their judgment, from the armchair, to find what is relevant and important to philosophy within that broad literature and offer insight into how philosophers might teach and how philosophy students might learn.

A final note about philosophy pedagogy that works in the application mode: it only works for those cases and in those ways where philosophy is similar to other disciplines, and where philosophic teaching and learning are similar to the teaching and learning in other disciplines. Where it is, or might be different, applying principles from other disciplines will be of little help (or worse, will lead to errors).

Philosophy pedagogy research from the armchair

There are two largely distinct ways that philosophers have done philosophy pedagogy research from the armchair, and I will look at each separately. I will refer to the first as the unjustified armchair method (UAM), and the later I call here the justified armchair method (JAM).

The unjustified armchair method

By far the most common method that I have seen used by philosophers who engage in pedagogy research is what I am calling the "unjustified armchair method." A typical case is Harry Brod's work, "Euthyphro, Foucault, and Baseball: Teaching the Euthyphro" (2007). In this work, Brod offers an ingenious way to explain the central argument Socrates makes about piety in *Euthyphro*—where Socrates asks: "Is the pious loved by the gods because it is pious? Or is it pious because it is loved by the gods?" Brod offers an analogy to the cause of a runner being "out" in baseball: is the runner "out" because the umpire says so, or does the umpire call the runner "out" because the runner was, for example, tagged while not touching one of the bases? (Brod, 2007). After describing the analogy in some detail as he describes it to his students, Brod writes: "It is now easy for students to understand the issue here, and also to see that it is essentially the same question Socrates is asking Euthyphro" (Brod, 2007, p. 253). Brod is thus explaining one difficult concept by using an analogy to a different, supposedly more intuitive situation. But what Brod does not take into account is that he is attempting to make something complicated easier to understand by utilizing a quite complex method, one that is often hard for students: argument from analogy. For this to work, the student would have to be able to pick out the elements of both cases that are similar (that both are cases where there is an authority, a judgment of the

authority, and some state of the world that the authority is either making true or is reporting the truth of through that judgment), as well as the dissimilarities, which are too numerous to mention. Brod may well be right that, having articulated the analogy as he has (and, presumably, as the reader of the article would in their own classroom), students will see what, until that point, was incomprehensible. But the crux here is this: as is so often true of philosophy pedagogy research, Brod has offered no evidence at all that this approach actually makes the Platonic argument any clearer to students, which was the goal, either by giving evidence of his students' improved learning or by applying empirical work done elsewhere to his classroom context to show that it is likely to be successful or why. That is, while it *could* be studied empirically, Brod has used only armchair methods in drawing his conclusion, and has not given the reader any evidence of its effectiveness other than his say-so. The concern here is not that Brod's suggestion is a poor one—I have, in some contexts, used his argument in class, and often to great effect—or that the evidence he provides of its effectiveness is insufficient or weak; the concern is that that there is no evidence given, and it is clear that he does not believe any evidence is needed.

In other words, in Brod's article and other research like it, we see philosophers doing armchair work to make claims that are open to empirical study but are ungrounded empirically (either on their own, or through applying the empirical work of others). Michael Goldman, the then editor of *Teaching Philosophy*—the primary and most prestigious venue for the publication of philosophy pedagogy in the United States—wrote a review article that included a critical analysis of the state of philosophy pedagogy at the time, centered on the problems and prevalence of just this method of research (though he takes up different examples of it), describing the state of philosophy pedagogy research in the following way:

> *Virtually all the essays [in the book under review] purport to offer techniques for improving teaching and/or learning but little is said either about what improvement consists in or how one measures it. Consequently little or no evidence (other than subjective reports) is provided to show that a recommended approach "works" (Goldman, 2005, p. 278).*[5]

I thus call Brod's approach, what Goldman describes in his review article and what I describe elsewhere (Bloch-Schulman, 2012), as the UAM not because his work is bad or unhelpful, but because it uses (1) armchair work and (2) the hope that work from the armchair will seamlessly transfer to the real world, without specific evidence that it does or the belief that one needs to provide evidence that it does. I mean the term "unjustified" therefore literally: he has not offered justification for his central claim. The problem is so wide-spread that Goldman says this of the book he is reviewing: the articles contained therein "confirm what has become evident to me in my ten years as editor of this journal: that the scholarship of pedagogy, at least in philosophy… is rather primitive" (Goldman, 2005, p. 278).

The question, here, is begged: why would philosophers not offer evidence that their proposed techniques work? I suspect they do not explore these questions because they believe that that they already know the answers to these questions about their students and about philosophic learning. Or, more accurately, they tend to act and research as if they know these things, whether they would claim they do or not. Talking with philosophers (and many other faculty) about their teaching in a variety of contexts, the refrain I hear most often goes something like this: "X worked for me." The implication being that I teach how I was taught, because *I* was able to learn through this method, and thus my students will be able to learn through this method as well. Without saying as much, this answer implies that what was done and seems sufficient in one case is both optimal and generalizable across contexts and for different students. But there are serious reasons to doubt both. Just because a person feels like X worked well for them does not mean, if they have only experience with one X, that the X was the method

that worked better than other methods. And furthermore, this view misses the problem of generalizability, particularly problematic because of the gap in skill, interest, and habits between typical students and those who will end up in the professorate.

As I argue elsewhere (Bloch-Schulman, forthcoming), I fear that Iris Marion Young is right when she claims that when "privileged people obey the injunction to put themselves in the position of others, they too often put *themselves*... in the positions they see the others. When privileged people put themselves in the position of those who are less privileged, the assumptions derived from their privilege often allow them unknowingly to misrepresent the other's situation" (italics in the original, Young, 1997, p. 48). That is, we look at our students and fail to take seriously the differences between us and them, or, more likely, between our projection of what we think we were like as a student and what they are actually like. Thus, when Brod or others think their methods work, they are really proposing that they "would have worked for them," and, implying that "because they would have worked for them, they would work for other students, too." But most of our students are quite unlike both what we were like as undergraduates, and even more unlike what we are like now, in many really important ways. What is needed, as I show below, is a method for us to accurately understand our students and to see accurately how they are different from us.

The justified armchair method

Daryl Close's Lennsen Prize winning article, "Fair Grades," might be a paradigm example of a philosopher working in philosophical pedagogy purely from an armchair, and by that I mean that he addresses issues that do not admit of empirical investigation (Close, 2009). He is interested not in "what works," to use Hutchings' language (Hutchings, 2000), but in what *ought to be*; that is, he takes as his goal the articulation of what role grades *ought* to play, justifying his conclusion by setting out a guiding principle of fairness, and then arguing though thought experiments for the implications of this view of fairness for how we ought grade. For example, he uses the "the apocryphal professor who grades papers by throwing them down the stairs in order to rank them, A through F" (Close, 2009, p. 364) to show how grading ought not be based on chance, but rather on merit. He also looks at typical views of how we ought to grade and argues against them. For example, he argues against the view that grades (particularly attendance grades) should be used as a punishment. Those who hold this view might cite research that shows that students, in the whole, are likely to do better by attending class. Close argues that, while it may be true for many or most students, we can imagine a student who performs very well without having attended a class, and that it would be unfair to punish this student for not using the commonly used means (attendance) to arrive at the goal of the class (learning, that is) (Close, 2009, p. 365).

While one might argue against the atomistic way Close describes the learner and their role within the classroom and in society, and while one might find his tone ungenerous, it is easy to appreciate in Close's article a strong example of the kind of work that is clearly done by a philosopher, using typical philosophic methods, and in which those methods are appropriate for the intention he sets forth. It is not that he makes no empirical claims at all. Certainly he does, throughout. But rather, the empirical claims he uses he believes to be uncontroversial, and thus offers no justification for them. Even so, the real work he does, the source of the justification of his conclusion, is normative through and through. Agree with him or not, his work would strike philosophers as clearly identifiable as philosophy, fitting well within the norm of the style and method of argumentation. It is not a surprise, then, that "Fair Grades" has been taken up so vigorously by the philosophy community, including a detailed critique, in John Immerwahr's, "The Case for Motivational Grading," (2011), which itself was good enough for an honorable mention for the Lennsen Prize.

Summary of the state of philosophy pedagogy from the perspective of methods

The above account of what philosophic methods are, generally, that is, armchair methods of analysis (conceptual, logical, textual) and how these armchair methods are used in philosophy pedagogy research shows ways that philosophers have sometimes eschewed, though often used—sometimes well, sometimes problematically—our disciplinary methods to advance our understanding of the institutional study of philosophy. Largely absent from all of these types of philosophical pedagogy research, however, is a close examination of what students can do, how they do it, and how they understand what we are asking them to do. That is, there is some, rare but important work on what Hutchings calls the "what is" question within philosophy, which is almost exclusively done as large-sample data analysis. There is also a linking of "what is" with what Hutchings calls the "what works" question in the application research, described above. But the philosophy pedagogy research that offers a close reading of "what is" is almost always using insights of "what is" from other disciplines, that is, it is based on non-disciplinary understandings of learning that are then applied to the philosophy classroom. Finally, in the third case, philosophy pedagogy from the armchair, there is no attempt to study "what *really* is" at all: in the UAM, there is an attempt to say "what works," but without grounding that claim in empirical research, and in the JAM, there is an articulation of "what ought to be." What I call for, then, is a close examination of "what is" in philosophy, upon which we could build "what works," recognizing that some of "what is" (and thus "what works") will be the same as it is in other disciplines, some will be similar, and some is likely to be quite different. If we are interested in learning and activating what increases learning, and learning is an increase in something (certain skills, habits, knowledge, dispositions) or a decrease in something (other skills, habits, knowledge, dispositions), we need to know where students are, what they know how to do, how they habitually behave and think, what they know, and what their dispositions are. That is, we need to know "what is."

Towards new methods: using think alouds to understand philosophical thinking

Here, I will advocate for a specific approach to understanding philosophical learning, namely, through the use of think alouds. The purpose of this method is to make thinking visible by having participants talk out loud, saying as much as they can of whatever they are thinking, as they are thinking it and while doing a specific task. Think alouds can be done while participants do just about any task. Because they are done in real time, rather than offered as a reflection on a task already completed, they often offer wonderful insight into the choices, starts, false-starts, reversals and changes students make as they perform a task.

While originally developed by psychologists and used in other disciplines (notably, history and mathematics), for philosophers the advantages of using think alouds are multiple. Most importantly, having students and philosophers[6] create a text that then can be analyzed as one would any other philosophy text allows us to utilize our skills, values, and habits of mind. I am arguing here that coming to understand student learning requires, at the very least, observing, and I recognize that think alouds are therefore not primarily an armchair method of study. Still, think alouds allow us to learn about philosophical thinking philosophically in two ways: first, in asking participants to do philosophical tasks, and second, in the method of interpretation. That is, we might ask questions about aspects of learning that are particularly philosophic (even if not unique to philosophy), like using armchair methods to make arguments about why something ought to be done or not done. We are also in a position to read and interpret the think aloud data philosophically, using our own styles and methods of interpretation.

Ultimately, though, the proof of my claims is in the tasting, and the value and amenability of this approach for philosophers will be proven not a priori, but through use and analysis of think alouds.

One important note: while the questions about what philosophy is, what it studies, and what its methods are have been, and remain, an area of ongoing controversy within the field, "essentially contested concepts,"[7] I am examining philosophical thinking, and what I mean by that is the thinking done by those who are disciplinarily and socially recognized as philosophers as it appears in an institutional pedagogical context. This allows me to leave behind much of the internecine disagreements within the discipline about the nature of the discipline. It also means, interestingly, that traditional divisions (say, between Continental and Analytic philosophers) play no role in this analysis because, though there might be important differences in how these groups of philosophers think, these differences were not evident in the think alouds I conducted with philosophers trained in both. What was important, and quite striking, were ways that philosophers differed from students of philosophy, and it is to those differences that I now turn.

Initially inspired by Sam Wineburg's work and, in particular, his use of think alouds to gain insight into expert reading of history (Wineburg, 2001), I turned to think alouds to understand philosophical expertise. I have asked a variety of people to perform think alouds (high school students, college students, graduate students and faculty, both within and outside of philosophy). I will focus here on comparing data from the think alouds of senior philosophy majors and minors from the study (which included 4 majors, 3 minors in their last semester before graduation) with philosophy faculty. To give some context: the students are all from Elon University, a small-to-medium sized private coeducational, selective Master's level university located in Elon, NC, where the majority of students are white, straight, cis, traditional aged, and from quite affluent homes. The faculty included two colleagues at Elon and one from Ball State University in Muncie, Indiana.

For this study, I devised think alouds to examine schema differences between the reading practices of philosophers and students. In particular, I wanted to investigate whether students were reading philosophic work through a schema driven by plot, which is quite different from how philosophers read, seeing philosophy as argumentation, and thus that students might be utilizing the reading skills they would correctly use reading fiction when reading philosophy, and missing the purpose and structure of philosophical writing (on schema theory, see Widmayer, n.d. and Armbruster, 1986).

I therefore set up the think alouds to gain greater insight into the ways students understood different types of writing by giving them narrative writing paired with more clearly argumentative writing to see if there were significant differences between the way philosophy students and philosophers approached these distinct genres. I also wanted to hear students reason out a moral argument (that is, to do some classical armchair philosophy). To set up these various tasks, I turned to Simon Wiesenthal's *The Sunflower,* because it offered everything I needed: a powerful narrative which culminates in a provocative ethical question about the narrative and, at the end, others' arguments about how to answer that same ethical question (Wiesenthal, 1998). The narrative text recounted the story Wiesenthal tells of how, as a concentration camp prisoner, he was taken to a hospital for his work assignment where he was asked by a nurse if he was Jewish; when he said he was, he was asked by the nurse to follow him; he was brought upstairs to a room with a dying Nazi solder who told Wiesenthal his own story and, on his deathbed, asked Wiesenthal to forgive him, for all the Jewish people, for his role in the atrocities perpetrated against the Jews. Wiesenthal said nothing in response and left the room.

I rewrote the story in very brief form (about 1000 words), ending the narrative with a modified version of the question Wiesenthal asks at the conclusion of the book (asking: "At the conclusion of the book, Wiesenthal asks the reader simply enough if he did the right thing. Did he?"); and followed

Wiesenthal's narrative with a very short argument in response to Wiesenthal from Roger Kamenetz (Kamenetz, 1998). Participants thought aloud while reading the narrative, while answering the "did he do the right thing?" question, and while reading Kamentz's own answer to that question.

It is also important to keep in mind the context in which the students and faculty performed the think alouds.[8] I was the one conducting them, there was a consent form for them to fill out, and as participants did their think aloud, I videotaped them. There was, thus, little natural or normal about the context in which these took place. It seems likely, therefore, that students (and faculty) would be trying to play to what they expected my expectations would be of their "performance."

In this article, I will focus on the think alouds of one undergraduate, Matthew Monito, a philosophy major then preparing to graduate, and Ann Cahill, my colleague in the Elon philosophy department.[9] I have chosen to focus on these two participants, in particular, because neither are experts on the Holocaust, so there is no difference in content knowledge in the strict sense, and because they offer particularly clear examples for the case I am trying to make, though the same conclusions can be found throughout the comparison between philosophy students and philosophers. I begin with a short comparative excerpt from Monito and Cahill. In this excerpt, the text they are doing their think aloud about, which is the same for both, appears in bold text.

MONITO THINK ALOUD

Click here to watch the video of Monito's think aloud.

Q: Anything that you're thinking we want out loud.

A: O.K.

Alright… "**"This is an abbreviated version of a true story originally recounted by Simon Wiesen… Wiesen…."** I can't pronounce that.

"…in his book *The Sunflower.*)"

"Simon, a Jew who was captured trying to escape Nazi persecution of the Jews, is placed in a concentration camp though he had committed no crime. He is horribly

CAHILL THINK ALOUD

Click here to watch the video of Cahill's think aloud.

Q: Any questions before we start?

A: The only question is that I am in a different situation depending on what I'm reading. For example if I'm doing research I wouldn't even sit down to read something until I had thought through what problem I am working on. So I come to it with a lot as opposed to scanning the newspaper or something like that. It's not a universal position when I'm sitting down to reading. We'll see what I do when I read this.

"This is an abbreviated version of a true story originally recounted by Simon Wiesenthal in his book *The Sunflower.*)"

treated, underfed, overworked and in fear for his life." Interesting… underfed and overworked. I've read those in other stories, in other true stories. Similar true stories. I find it interesting those are put right next to each other and… but I think it is good because it really emphasizes the, um, lack of health. You've got the no food so you are not going to get stronger and overworked so you are constantly getting weaker.

So the first thing I notice is that there's a parenthesis that's lonely so maybe they meant there to be a parenthesis in the beginning of the sentence.

"Abbreviated version." So that makes me think, I wonder who did the abbreviations. I wonder what's missing. For what purpose was it abbreviated? Was there anything that was important that was missed out? I wonder if I can get my hands on the whole version of the story.

"Version of a true story." I stop there and think wow, there's been a lot of controversy about memoirs and what constitutes the true stories. It's a first person narrative. Who says it's true? Does he say it's true and in what ways is it true?

"Simon Wiesenthal" … I know that name but I don't think I've ever read anything by him so I'm not thinking if I had known something about the author I'd probably have stopped there in some ways and try to remember what I had read and what I thought about what I read and what context I had read it. I have no specific associations although again I recognize the name. The book *The Sunflower* I have no associations with that at all. So I think this is something completely new. I am thinking – my vague associations with Simon Wiesenthal are about something about the Holocaust and World War II. I can't remember. Maybe I'm only 75% accurate about that so I'm wondering about that or if I'm confused him with something or someone else.

Okay, so **"Simon, a Jew who is captured trying to escape the Nazi persecution of Jews is placed in a concentration camp though he had committed no crime."** I would stop there and say that's kind of interesting phrasing actually. **"Though he committed no crime."** I never think of people in concentration camps as actually having committed any crime. Or if I had thought about them as criminals they would be artificial criminals in that they had broken some very unjust laws. That sentence stops me

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> because it somewhat contradicts all my—not all but many of my assumptions about why people were placed in concentration camps. I assume people were placed in concentration camps because of identity. Perhaps because of so called subversive activity, which I would not see as criminal. So that stops me.
>
> **"He is horribly treated, underfed, overworked and in fear for his life."** Nothing about the negative connotations of those two first sentences stops me at all because it's like yeah—concentration camps, of course. That's not a playground. So that doesn't stop me in my thinking.

Before talking about the differences, I want to start by highlighting Monito's attention to the particular way the passage was written, specifically, as he recognizes, from the perspective of Wiesenthal, the detrimental effects of being both overworked and underfed. While the text does not specify the relationship between the two, Monito is sensitive to how the two interact and reveals one essential element to the terror of this regime. This is all the more impressive, on Monito's part, because it is, as he notes, typical and is thus easy to overlook. One can thereby see Monito's sensitivity to the circumstances Weisenthal endures here. Monito does many other things well, too, including relating the new story to his prior understanding of the events of the Holocaust and showing a deep concern for the importance of forgiveness and its role in overcoming atrocities.

What is, perhaps, most noteworthy in thinking about the differences between how philosophy faculty and students read, as exemplified above, is found in the role of questions. Cahill is not just asking many more questions—which she clearly is—but what emerges from her (and from other philosopher's think alouds) is a much more skeptical stance, putting into question not just the motives and actions reported in the story, but putting the narrative itself into question. Students, on the other hand, ask some questions to make sense of the motives and actions of those within the story, but are powerfully credulous of the narrative, as written, so much so, that they remained credulous even when I altered the text in some cases to include errors, which the students largely overlooked and ignored. Philosophers not only read the narrative more skeptically, wanting to know not just about what happens within the story, but as we see in the Cahill think aloud here, also questioning why and how it was written, what role the writing is playing, and what purpose it serves as a written text. That is, students took the story as describing events that had taken place, whereas philosophers saw the writing of it as performative, asking about how, and for whom, and to what effect the performance was being enacted. In other words, the philosophers saw the text as *doing* something other than mere reporting (on the distinction between descriptive and performative utterances, see Austin, 1962, pp. 1-11).

In addition to putting the text into question, philosophers expressed skepticism of the final question, the "did he do the right thing?" that comes at the end of the story. In fact, of the three philosophers who do think alouds, not a single one answered the question as it was given, choosing instead to question the question, offering alternative questions, or suggesting alternative methods to answer the question (e.g., I would want to discuss this with others). Cahill starts her response by

questioning the premise of the question, saying "Well, it begs the question of whether he was capable of doing the right thing. To me, a more interesting question: Is he in a position?—it seems to me, I think that's an easier question to answer." After arguing that he was not blameworthy (rather than answering whether he did the right thing), she ends her response to the final question by explicitly saying, "I'm not sure I like the question." Cahill and the other philosophers thus did not only see the text and its writing as a performance, they also saw the think aloud process itself as performative, and as something itself to be put into question.

Click here to watch Cahill answer the concluding question.

For Cahill and the other philosophers, the text as a whole is under investigation, is something to be taken with a grain (or more) of salt. Wineburg argues that unlike in the "medical model of reading," where readers stop and pay attention only when they perceive something to be going wrong, experts see the text, as a whole, "as a social instrument skillfully [or not so skillfully] crafted to achieve a social end" (Wineburg, 2001, p. 69). That is, unlike for these students, who read as if problems in the text are exceptions, as we see even in the short excerpt from Cahill quoted above, there is little unproblematic, little that does not call for close attention and critical engagement.[10]

My point is that we in philosophy should focus on how our students' approach to the texts and tasks, as revealed in the think alouds (and in the difference between their responses and those of philosophers) can and ought to inform the goals we set in our teaching and the agenda we set in our pedagogical research. Given that philosophers do consistently critique the text and tasks we are given, question the text and even question the prompt, ought not we articulate to our students why and take as a goal teaching students these habits, skills and dispositions? The need to teach these skills is highlighted in findings from Wieman and Perkins in the context of teaching physics. Specifically, these authors define the goal of "effective physics instruction" to be "instruction that changes the way students think about physics and physics problem solving and causes them to think more like experts" (Wieman & Perkins, 2005, p. 36). They describe research they have conducted based on "extensive interviews and well-tested surveys" which examine how well students' are, or are not, changed by taking physics classes. Their findings are that, after taking a class, "students, on average, are found to be *less expert-like* in their thinking than before" (Wieman & Perkins, 2005, p. 37). Specifically, they reveal how students, post-course, are *more* likely to hold that physics is "less connected to the real world, less interesting, and more as something to be memorized without understanding," (Wieman & Perkins, 2005, p. 37).[11] They additionally found this to be true even of classes that are successful in imparting content and in classes in other disciplines (they mention, specifically, chemistry [Wieman & Perkins, 2005, 37]).

Juxtaposing Wieman and Perkins's research with the think aloud findings articulated above, what becomes clear is that we, in philosophy, want to train students to question and question deeply, and yet, there is a good chance that our methods—if the analogy holds between philosophy and these other subjects—are likely to encourage content memorization without understanding and without questioning. This would seem intuitively most likely to be a problem in those philosophy classes where "content" is seen as most important, for example, in many introductory, survey and history of philosophy courses, though the task of faculty-directed assignments might itself habituate students to simply answer all questions, rather than to ask questions of their own and to question the questions they are given. The way students approach questions and their role in philosophy is under-studied and might reveal

opportunities and challenges throughout philosophy instruction. What is clear is that philosophers act, in this regard, quite different from how students act and likely want students to act more like they do; it is also clear that philosophical research in teaching, as described above, largely ignores the skills, habits and dispositions of good philosophic question-asking and question-askers. In this way, focusing on the "what is" question through the think alouds reveals a significant lacuna in what we focus on as philosophers and what we focus on in our research intended to help students become more expert-like.

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NOTES

1. In my experience, for example, at meetings of the International Society for the Scholarship of Teaching and Learning, the norms at the concurrent sessions and the way SoTL is described and engaged by the plenary speakers is often quite different. I am speaking here of the problems I see in what I take to be typical SoTL work as it is enacted in the concurrent sessions.
2. Digiovanna actually uses other methods in other parts of the article, but the argument and method he uses in section III, "Adding Understanding to the Concept," is a particularly helpful example of the use of armchair methods to offer important insights for SoTL.
3. I would like to thank Morgan Thompson, a central figure in the study of the inclusion of women and non-white persons into philosophy, for helping to shape my thinking here.
4. Arendt's argument is about the application of general moral principles, though her argument holds equally well for general pedagogical principles.
5. For an updated analysis of this same problem, see Bloch-Schulman, 2012.
6. Here, I use "philosophers" to mean: professional philosophers, with Ph.D. in hand. Though I do not doubt that there are philosophers who do not have these specific qualifications, this is a fast way to distinguish a group of people who are societally and disciplinarily understood to be experts in the field. This qualification thus is sufficient, even if not necessary, for the application.
7. An essentially contested concept are "concepts the proper use of which inevitably involves endless disputes about their proper uses on the part of the users," Gallie, 1955-1956, 169.
8. Before asking anyone to do a think aloud, I gave them explicit instructions about what a think aloud is and how to do it; because it can be quite awkward, I also had everyone do a practice think aloud on a mysterious object, during which I made suggestions or offered reminders about how to make sure as much as possible is verbalized. During the think alouds themselves, I tried to be as unintrusive as possible, mainly staying quiet, occasionally reminding a participant who had remained silent too long to verbalize what she was thinking.
9. All of the think alouds have gone through IRB approval, and I have received consent from the participants to use their real names.
10. On the way faculty problematize, see also Graff, 2002.
11. Here, the argument from Digiovanna, described above, becomes particularly relevant and important.

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The Relationship between Collaboration in Learning, Quantity and Timing of Feedback, and Self-Efficacy of Students in Higher Education

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ABSTRACT

The purpose of this study was to identify the effect of collaboration in learning, and the quantity and timing of feedback towards the enhancement of self-efficacy among students in a public university in Malaysia. Data was collected using a survey questionnaire. The questionnaire was distributed to a total of 500 randomly selected tertiary students. A total of 475 questionnaires were returned and used for analysis. Data was analysed with both descriptive and inferential st atistics. The findings revealed that most of the students collaborate with peers in their learning. Feedback that was identified has a positive and significant relationship with student self-efficacy. A moderate, positive and significant correlation has been identified between collaboration in learning, quantity and timing of feedback and self-efficacy among the students in a public university. However, collaboration in learning and quantity and timing of feedback only induced a low effect size on self-efficacy.

Keywords: *collaborative learning, feedback, self-efficacy, higher education*

INTRODUCTION

Prince (2004) believes that Collaborative Learning *includes a*ny instructional approach where students work together in small groups with a common objective. Therefore, it can be assumed that collaborative learning encompasses all group-based instructional approaches, inclusive of cooperative learning. However, some scholars make a distinction between collaborative and cooperative learning in terms of their divergent historical developments and distinct philosophical backgrounds. Nevertheless a common strand in both distinctions is that collaborative learning and cooperative learning also highlight the importance of student interactions in learning, instead of solitary individual activity. The most prevalent model of cooperative learning sited in the engineering literature is that of Johnson, Johnson and Smith (1998). This model integrates five specific tenets, namely: individual accountability, mutual interdependence, face-to-face primitive interaction, appropriate practice of interpersonal skills, and regular self-assessment of team functioning.

While different cooperative learning models exist, the core element held in common is a focus on cooperative incentives rather than competition to promote learning (Prince, 2004). According to Wikipedia.org (2014), in active learning, it is common place for teachers to plan activities for students in small groups (also termed as "cooperative learning.") In this approach, typically teachers organize small group activities for students to undertake and complete specific tasks together. For instance, students could be engaged in solving Math problems or discussing issues concerning literature, etc. In this circumstance, groups could be engaged in a similar task or they may be assigned different tasks. Small group activity can be conceptualized in techniques such as Think-Pair-Share. This technique can be instrumental in helping instructors organize content, track students' performance and saves time for the instructor as they can move on to the next topic. Most importantly, it is a technique that engenders interactive learning among students (Radhakrishna, Ewing & Chikthimmah, 2012). There are three ways instructors can apply collaborative learning in their classroom:

- Create learning cells occupied by pairs of students who take turns to ask and answer questions based on material that both have read. Learning cells are an effective technique for students to learn and progress together (Radhakrishna, Ewing & Chikthimmah, 2012).

- Following instructor explanations or lecture, stop and ask students to prepare a brief review of the lecture or explanations in one minute. This technique is aptly called the one minute paper and is an effective way of reviewing materials and obtaining feedback.

- Establishing collaborative learning groups is a great way to introduce diverse learning materials in different classes. In this technique students are assigned to groups of 3-6 students who work together on a task. Each group establishes its own leader and scribe who help ensure that they keep to their objective or target. This is a prime example of active learning where students working together, continuously revise their work (McKinney, 2010).

In order to induce participation and draw on the wisdom of all the learners, it is imperative that the classroom seating arrangement is flexible enough to allow for the creation of small groups (Bens, 2005) for collaborative learning.

A. Quantity and Timing of Feedback

Boom, Paas and Merrie¨nboer (2007) stated that, with regard to feedback it is important to identify and name the source of the feedback. In educational settings, feedback is usually provided by teachers (it refers to lecturers in this study). Many researchers have found that the most effective feedback is timely, specific and tied to explicit criteria. Teachers adjust their feedback strategies to meet different needs identified in the assessment. Teachers' feedback has proven to be adequate (Chi, 1996) and they are often sought as a favorable source of external feedback anticipated to reinforce the effect of reflection. With regards to SRL (self-regulated learning), teachers are deemed better prepared in providing feedback in comparison to student peers (Boom, Paas & Merrie¨nboer, 2007). Teachers are more neutral and objective in their feedback, while student peers, due to their emotional attachment may provide feedback which is less direct and concrete (Nilson, 2003). Nevertheless, there are studies which have indicated that peer feedback has its inherent effectiveness (Bangert-Drowns, Kulik, Kulik & Morgan, 1991). In the present study, peers were used as a secondary resource for external feedback. This study has also undertaken to identify the impact of peer feedback and teacher feedback.

E-learning provides opportunities for feedback to be channeled by the lecturers through e-mails and discussion boards or automatically by the software (Krause, Stark & Mandl, 2009) or learning management systems. Automatic feedbacks are economical and effective in reaching out to students with immediate feedback. Therefore it is highly recommended in institutions with large student populations and scarce resources. Furthermore, e-learning accords the possibility of choosing between standardized feedback to all students (e.g., knowledge of right answer) or adaptive feedback (feedback is adapted to students' answers) (Sales, 1993). This is made possible by incorporating adaptive (Gielen, Peeters, Dochy, Onghena & Struyven, 2010) and heuristic technologies which are capable of providing varying amounts of feedback and this seems to be associated to their effectiveness in enhancing performance (Narciss & Huth, 2006).

The elaboration provided in feedbacks often initiates a learning effect on students. This effect coupled with the presence of explanations enhances collaborative learning (Webb, 1991). Notwithstanding of the differences in the amount, substance and style of feedback (i.e., volume and type of information), and the learning processes that are anticipated (i.e. viewpoints on how feedback encourages learning), the findings accrued from traditional feedback studies, however, can always be regarded as accurate.

Webb (1991) stated that in order to give metacognitive feedback, the tutoring system must be able to detect metacognitive errors in real time, without interrupting the learning process. This was done by evaluating students' actions using a metacognitive computational model of help seeking behavior (Webb, 1991). The help-seeking model evaluates help-seeking behaviors in a tutored step-based problem-solving environment such as the Geometry Cognitive Tutor. Unlike other models of help seeking that have been put forward in the literature (Webb, 1991), this model is comprehensive in categorizing individual actions as either help-seeking desired or undesired actions. Webb (1991) provides a thorough comparison of the model in relation to other frameworks.

B. Self-efficacy

Self-efficacy refers to beliefs in one's ability to organize and carry out a course of action required in attaining certain out lined objectives (Bandura,

1997). Zimmerman (1990) described perceived self-efficacy as personal evaluation of a person's ability to organize and execute a course of action to attain designated goals, and he sought to assess its level, generality, and strength across learning processes and contexts. Self-efficacy generally, refers to one's self-evaluation about one's capability to consolidate thoughts, feelings, and actions to produce a preferred outcome (Torres & Solberg, 2001; Bandura, 1986). Academic self-efficacy, particularly, signifies confidence in carrying out academic tasks such as reading textbooks, posing questions in class, and priming for examinations (Solberg, O'Brien, Villarreal, Kennel & Davis, 1993). Bandura (1994) believes people's perception about their efficacy can be enhanced by four main sources of influence. Mastery experiences are known as the first method to create the most successful forms of efficacy in learning. Learning events that results in a success help leads to a strong belief in one's personal efficacy while any experience of failure results in an erosion. Failures are detrimental, especially if it occurs before a strong sense of efficacy is formed. People who are exposed to easy success and quick gratification are easily disheartened by failure. Building a strong sense of efficacy requires life experiences that involve the surmounting of difficulties with a persistent effort.

The second method of building a strong sense of self-efficacy is by observing the life experiences of social models (Bandura, 1994). Observing others from a similar status, achieve success through persistent effort, kindles an observer hopes that they too can achieve success by mastering certain abilities that lead to success. However, in the same sense observing others fail despite persistent hard work has a detrimental effect to one's own sense of self-efficacy and any prior effort may lose its worth. The effect of a model on self-efficacy depends largely on the observers' perceived proximity to the model. The impact of modelling on perceived self-efficacy is strongly influenced by the observers' perceived correspondence to the models. The influence of a model goes beyond the provision of social standards against which observers can measure their own abilities. Observers select models who display the abilities that they themselves aspire to achieve. Competent models by way of their displayed life style and thoughts convey meaningful skills and strategies to observers on the means of maneuvering environmental anxieties. Acquiring effective means elevates the value of perceived self-efficacy.

A third method of enhancing people's perception that they are endowed with all the skills to succeed is social persuasion (Bandura, 1994). People can be persuaded verbally to belief that they possess the skills to master certain abilities which would set them on the road to success. Such people work harder on a sustained basis and are more successful in solving problems, in comparison to those who continue to verify their own abilities and dwell on self-pity. Social persuasion works as a boost in persuading people to strive harder in pursuing success. They augment the acquisition of skills and promote the development of personal efficacy.

It is more difficult to instill high beliefs of personal efficacy by social persuasion alone than to undermine it. Unrealistic boosts in efficacy are quickly disconfirmed by disappointing results of one's efforts. However, people who have been dissuaded from believing in their own abilities develop an inferiority complex that drives them away from challenging experiences which hold the potential for learning and growth and often give up easily when faced with difficulties. The role of effective efficacy builders goes beyond the task of providing positive reviews (Bandura, 1994). Apart from raising people's self confidence in their own abilities, they construct situations with ample opportunities for success and avoid involving them in untimely placements where the chances for failure is high. The basis for success is self-improvement and not triumphs over others.

A fourth method of improving self-beliefs of efficacy is by reducing people's reaction to stress and modifying their negative emotional inclinations and misconceptions regarding their somatic conditions. In stress inducing situations, the intensity of the emotional and somatic reactions is not as important as the perceptions and interpretations regarding it. Among people who have a higher sense of self-efficacy there is a tendency to view emotional situations as a catalyst or challenge for better performance. On the other hand people who are plagued by self-doubts often regard affective arousals in a debilitative sense. Somatic markers of efficacy play a significant part in preserving health, athletic and other physical endeavors.

Gusavac, Hamann, Felch, Johnson, Lamborn & Torres, 1998). Among Latino students, the correlation between academic self-efficacy and social integration ranged between .40 and .39 in another study (Hamann, 1997).

RESEARCH METHOD

The study was conducted at the Faculty of Education in a public university in Selangor, Malaysia. Data were collected using a survey questionnaire. A total of 92 diploma students, 213 undergraduate students and 156 postgraduate students have responded to the questionnaire. The researchers distributed and collected back the questionnaire in a semester. The questionnaires used a 5-point Likert-scale to gauge the perception of students towards the practices of collaboration in Learning, Feedback and Self Efficacy in higher education. Both descriptive and inferential statistics were used to analyse the data. Besides that, Cronbach's Alpha test was conducted to analyse the reliability for each variable. The Cronbach's Alpha result for each variable was shown in Table 1:

Table 1: Reliability Analysis

No.	Variable	Cronbach's Alpha	No of Items
	Collaboration in Learning	0.728	9
	Quantity and Timing of Feedback	0.673	9
	Self-efficacy	0.950	7

FINDINGS

Demographic Factors

Data analysis showed that 21.7% were males while 78.3% were females. In terms of ethnicity, 96.3% were Malays, 1.1% were Iban, 0.9% were Kadazan, and others 1.8%. Majority of the respondents were pursuing a Bachelor's Degree (46.2%), followed by Master's Degree students (33.8%) and lastly Diploma students (20.0%). Table 2 shows the mean for the current CGPA of the respondents as 3.36 while the standard deviation was .27.

Table 2: Descriptive Analysis of Current CGPA

Descriptive Statistics	N	Mean	Std. Deviation
Current CGPA	355	3.36	.27

Table 3: Descriptive Statistics of Collaboration in Learning

Collaboration in Learning	Mean	Std. Deviation
collaborate with my peers	4.11	.73
spirit of cooperation	4.03	.78
take opportunity to exchange ideas	4.00	.75
creativity and critical thinking enhanced	3.99	.82
coordinate with individuals and groups	3.97	.71
enjoy working with peers	3.89	.95
use problem-solving techniques	3.84	.80
do better in individual assignment	3.53	1.09
'passengers' within my team	3.06	1.22

The result portrayed in Table 3 showed that the student collaboration with peers has the highest mean compared to others (m=4.11, SD=.73). Followed by spirit of cooperation (m=4.03, SD=.78) and take opportunity to exchange ideas (m=4.00, SD=.75). The respondents did agree that their creativity and critical thinking enhanced (m=3.99, SD=.82) and they enjoy working with peers (m=3.89, SD=.95).

Table 4: Descriptive Statistics of Quantity and Timing of Feedback (N=473)

Quantity and Timing of Feedback	Mean	Std. Deviation
Learn more if receive feedback	4.00	.83
Lecturer provides more verbal feedback	3.91	.81
Get feedback from peers	3.69	.95
Receive prompt feedback	3.63	.91
Plenty of feedback on how I am doing	3.56	.94
Appreciate more written feedback	3.44	1.06
Less useful when receiving delayed feedback	3.28	1.11
Hardly receive feedback	2.91	1.10
Receive less guidance	2.70	1.10

Table 4 showed that "students learn more if they receive feedback" (m=4.00, SD=.83). Followed by "lecturer provides more verbal feedback" (m=3.91, SD=.81) and the respondents did "get feedback from peers" (m=3.69, SD=.95). However, the respondents were reluctantly to agree that they receive "prompt feedback" (m=3.63, SD=.91) and "plenty of feedback on how they are doing" (m=3.56, SD=.94).

Table 5: Descriptive Statistics of Self-efficacy (N=473)

Self-efficacy	Mean	Std. Deviation
Enhance learning capability	4.21	.69
Develop self-concept	4.19	.70
Increased motivation	4.18	.74
Enhance self-esteem	4.17	.75
Enhance confidence	4.17	.73
Guided control learning progress	4.16	.73
Enable self-regulate	4.16	.74

Table 5 showed that students have enhanced their learning capability (m=4.21, SD=.69), followed by "developing students' self-concept" (m=4.19, SD=.70), "increased students' motivation" (m=4.18, SD=.74), "enhanced self-esteem" (m=4.17, SD=.75) and "enhanced confidence" (m=4.17, SD=.73).

Table 6 shows the correlation between collaboration in learning, quantity and timing of feedback and self-efficacy. The Pearson Product Moment Correlation results in Table 6 showed that that there was a moderate, positive and very significant relationship between collaboration in learning and self-efficacy ($r=.496$, $p<.01$). There was also a moderate, positive and very significant relationship identified between quantity and timing of feedback and self-efficacy ($r=.306$, $p<.01$).

Table 6: Correlation between Collaboration in Learning, Quantity and Timing of Feedback and Self-Efficacy

Variables		Collaboration in Learning	Quantity and Timing of Feedback	Self-Efficacy
Collaboration in Learning	Pearson Correlation	1	.419**	**.496****
	Sig. (2-tailed)		.000	.000
	N	465	458	460
Quantity and Timing of Feedback	Pearson Correlation	.419**	1	**.306****
	Sig. (2-tailed)	.000		.000
	N	458	466	462
Self Efficacy	Pearson Correlation	.496**	.306**	1
	Sig. (2-tailed)	.000	.000	
	N	460	462	469
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 7: Multiple Regression

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.509[a]	**.259**	.256	.54798	1.867
a. Predictors: (Constant), Quantity and Timing of Feedback, Collaboration in Learning					

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.415	2	23.707	**78.950**	**.000[b]**
	Residual	135.429	451	.300		
	Total	182.843	453			
a. Dependent Variable: Self-Efficacy						
b. Predictors: (Constant), Quantity and Timing of Feedback, Collaboration in Learning						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	**1.489**	.221		6.727	.000
	Collaboration in Learning	.557	.056	**.440**	9.883	**.000**
	Quantity and Timing of Feedback	.161	.055	**.132**	2.952	**.003**
a. Dependent Variable: Self-Efficacy						

The relationship between the variables in multiple regression analysis for the study was proposed as:

$$\mathbf{y = 1.489 + .440x_1 + .132x_2}$$

y= self-efficacy

x_1=collaboration in learning

x_2=quantity and timing of feedback

R-Square (R^2) is the proportion of variance in the dependent variable which can be predicted from the independent variable. From the Table 7, the R^2 value of .259 implies that 25.9% of the variance in the "self-efficacy" scores can be predicted from the "collaboration in learning" and "quantity and timing of feedback". The ANOVA result ($F=78.950$, $p<.01$) further confirmed the significant contribution of "collaboration in learning" and "quantity and timing of feedback" toward the formation of self-efficacy among students in higher education.

DISCUSSION

From the findings obtained, the results show that students tend to agree that collaboration in learning help them in their studies. Prince (2004) states that cooperative learning as a structured form of group work where students pursue common goals while being assessed individually. This collaborative learning enables students to learn because they allow students the chance to take a position and gather information to support their view and explain it to others. Besides, students also tend to agree that the quantity and timing of feedback improve their learning. Chi (1996) supported the findings in this study that that lecturer feedback has proven to be sufficient and they are often required as a promising source of the external feedback intended to reinforce the impact of reflection in learning. In terms of self-efficacy, the results show that students tend to strongly agree that their self-efficacy have increased. Schunk (1981) further supported the multiple regression analysis in this study that the effects of recognized self-efficacy on perseverance, path analyses have shown that students' skill influence the acquisition both directly and indirectly by increasing their perseverance. Hence, if students collaborate in learning, and receive adequate feedback to enhance their learning, they tend to have higher self-efficacy. The correlation results also show that all the three variables did have a weak to moderate relationships among themselves.

CONCLUSION

Torres and Solberg (2001) indicated that stronger academic self-efficacy leads to better college outcomes because students with higher self-efficacy

perceive failed experiences as challenges rather than threats (Dinther, Dochy & Segers, 2011). Besides that, academic self-efficacy was also found contributing to increased participation in social activities and discussions with faculty. As these performance attainments result in positive outcomes, self confidence improves the likelihood that these students will feel connected to their environment (Hamann, 1997). Moreover, students with higher academic self-efficacy also indicate a higher rate of persistency (Karpanty, 1998) in learning. When students perceive difficult college tasks as challenges, this kind of self-efficacy will strengthen college students' self-efficacy and lower their academic stress, and maintain psychological and emotional health (Solberg, Gusavac, Hamann, Felch, Johnson, Lamborn, & Torres, 1998). As a mediating variable in training studies, self-efficacy was known to react positively to advance students' learning and as a predictive of achievement outcomes. These empirical findings of its relevance as a significant arbitrator of students' academic progress and motivation confirm educators' belief that students' self-belief about their academic abilities does play a crucial role in propelling them towards success.

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