Reflective Practice: Two Essentials and Three Applications

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Abstract
Reflective practice is a special learning process in which past experiences are carefully evaluated in relation to relevant theories. But its distinct qualities are yet to be defined, making it harder to measure its effect. Moreover, the process is prone to human bias since participants are also the subjects of examination. Grounded in epistemology and dual processing theory, this paper argues that a state of doubt and open-minded inquiry should be included as essential features in reflective practice. Three applications, seeking clarity, being open-minded, and uncovering implicit assumptions, are presented to illustrate the central role of the two essential features.

Key words: Reflective practice, dual processing, clarity, open-mindedness, implicit assumption.

Introduction
For two decades, reflective practice has evolved into various conceptualizations and models. While the concept is grounded in theories and has gained broad support and implementation, what counts as reflective practice is not well defined. Having reviewed the concept of reflective practice concerning dance education, Tembrioti and Trangaridou (2014) concluded that the notion of reflective practice remains elusive, mysterious, interpreted differently, and used variously in educational settings. After conducting a literature review of 33 articles written (in) more than a decade, Standal and Moe (2013) found that students showed little progress on critical reflections through a plethora of reflective practices in terms of learning effect. This little progress could be attributed to the elusive and mysterious reflective practices that were inadequately defined. Logically, when reflective practice as an independent variable does not actually engage students in critical reflection, there is hardly any chance for the progress to be measured. That is, the loosely defined reflective practices have posed a methodological difficulty: What is being measured is not actually seen in the practices.

While being multidimensional is often true of a concept, essential features or core values are necessary for the concept of reflective practice to keep its focus so that the practice will be easily recognized, the outcome explicitly identified, and the effect rigorously measured. The purpose of this paper is to argue that a state of doubt and open-minded inquiry should be two essential features in reflective practice. They are essential because they guard
against human susceptibility to unwarranted assumptions and acknowledge the incremental nature of knowing. Recent research (Herschbach, 2015; Kahneman, 2011; Sowden, Pringle, & Gabora, 2015) in dual-process theory strongly suggests that we are genetically content with our existing knowledge even though it proves fragmental or unfounded. To illustrate how these two features are incorporated in reflective practice, this paper also presents three applications: Seeking clarity, being open-minded, and uncovering implicit assumptions.

Two essentials: A state of doubt and open-minded inquiry

Our general picture of the world provides us with both the grounds for doubt and the means for potentially removing the doubt (Klein, 2014). The journey from doubt to certainty is characterized by Wittgenstein (1972) as “a doubt without an end is not even a doubt.” This perception goes back to Kant (Stern, 2008) when he stated “skepticism in itself does not give us any certain information in regard to the bounds of our knowledge; but it conducts us to a sound investigation into the understanding and the reason.” In other words, a state of doubt can be an engine of mind driving inquiries into knowing process, that is, how knowledge is shaped and reasoned through. To bring attention to this process of knowing, Dewey (1910) called for reflective thinking, which he defined as “careful, active, and persistent consideration of a belief or a supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends”. At the heart of his reflective thinking is a state of doubt, prompting us to pause and take a hard look at our belief or anything in the name of knowledge. But the goal of reflective thinking is to lift the doubt, at least, for the time being through open-minded inquiry based on available evidence and foresight at the implications of the belief.

The discovery of the laws of planetary motion illustrates the triumph of a state of doubt and open-minded inquiry. Kepler was hired by Tycho Brahe to mathematically prove the latter’s decade-long celestial observations. He was a firm believer in Copernican system, in which the sun was at the center while its planets executed a uniform circular motion around it. Kepler had never doubted the circular motion around the sun until he tried in vain to fit the motion of Mars to Brahe's observations in every possible combination of circles his ingenuity could devise. Subsequently, he tried noncircular paths, which eventually led to his revolutionary discovery: Mars revolves in an elliptical motion with the sun occupying one of its two focuses. His discovery not only unveiled the mystery of planetary motion but also laid to rest the universally held mistaken belief. Like his contemporaries, Kepler had believed firmly the circular motion of the planets. But he stood above them in that he had integrity and courage to doubt his belief in light of evidence or his failure to justify the available evidence even when the belief was held sacred by the Church and endorsed by Aristotle. Moreover, his open-minded inquiry led him to test an alternative bordering on blasphemy in his time. These two essential qualities brought him the fame and honor of discovering three laws of planetary motion, opening a new chapter in the study of universe. His journey from a firm believer to a doubter, an open-minded inquirer, and finally a revolutionary discoverer indicates that scientific research involves a self-scrutiny as well as objective investigation (Strobel, 2015). A reasonable doubt and open-minded inquiry are the essential elements in reflective practice if we intend it to expand our knowledge.
If some philosophers might have made a case for a state of doubt and open-minded inquiry out of epistemic consideration and concern for susceptible bias, the dual process theory has provided some empirical evidence for these two elements. Kahneman (2011), a Nobel Memorial laureate in economics, published a book that documented his 40-year research on the dual process theory. His writing style made the complicated theory comprehensible to the layperson. He likened the dual processing to two mental operations named system 1 (S1) and system 2 (S2). S1 is good at inferring causality and inventing intentions, a genetically wired ability as the result of our long evolved survival instinct. Meanwhile, it tends to neglect ambiguity and suppress doubt in search for coherence associated with emotion and beliefs. Things that are incongruous with the emotion and beliefs will fall by the wayside. As a result, it sees the world more vastly coherent than it actually is. S2, on the other hand, is capable of higher level thinking and hypothetical reasoning but is cognitively passive until it is forcefully activated. Such a disproportional influence of S1 is the breeding ground for suboptimal judgments and flawed predictions. Since S1 processing is autonomous, often effortless, unconscious, and associatively coherent, it is fast and essentially impossible to control, especially in the case of perception and intuitive response. In contrast, the key feature of S2 processing is the ability to model hypothetical situations, involving effort, consciousness, and logical coherence often seen in critical decisions and complicated calculation. Not surprisingly, S2 is called slow thinking.

Stanovich and his colleagues (2014) made distinction between intelligence and rationality, claiming that intelligent tests largely failed to tap the reflective level of cognitive control. In other words, a high IQ person may not necessarily execute a higher level of cognitive control. A case in point is the result of a mini test that taps the reflective level of cognitive control. About 50% of Ivey League students selected the answers to the few questions in the test that seemed apparently right but in fact wrong. What separates these students from their counterparts who selected the correct answers was not their IQ but their ability to activate S2 processing at the time. In other words, they failed to let S2 override their S1 that acted on the associative coherence: What looks simple IS simple.

The dual processing research unveiled an unsettling fact about our mind. We are not only potentially equipped for sophisticated thinking (S2) but also genetically programmed for impulsive response (S1). Moreover, it does not spare even the extremely intelligent. Einstein, in his steadfast belief in determinism, claimed “God does not throw dice with the universe”, which later was belied by the newly discovered uncertainty in quantum mechanism. More troubling is that the two systems interact to the advantage of S1. S2 will need stimulation to set in motion whereas S1 usually responds in a split second. A state of doubt can serve to stimulate S2 to examine or override S1 if necessary. Afterwards, open-minded inquiry will take over to rationalize the stimulation or the override. These two essential elements are not only necessary as explained above but also easy to understand, execute, and observe in reflective practice.

**Application one: Seeking clarity**

When they explored the experiences of students in a teacher education program, Reimer and McLean (2009) observed inadequate confidence in their ability to implement the concept of global education in their future classroom. They found that it stemmed from their broad but vague view of the concept. While the notion of virtuous mess and wicked
clarity needs to be accepted in some cases (McArthur, 2012), lack of clarity when it is crucial can lead to confusion and miscommunication. Dai and Chen (2013) suggested that definition and delineation would result in clear conceptual understanding freed from confusion and ambiguity.

In this paper, we propose three stages in seeking clarity. Stage One is to cultivate a mindset that is poised to question our belief and/or initial impression. This stage is necessary and crucial for two reasons. To begin with, we have to address the disproportional influence between S1 and S2. As the dual processing theory finds, the active S1 will quickly respond to stimulus and form an impression based on its belief. A questioning mindset is to alert the passive S2 into scrutinizing the impression. Otherwise, the initial impression will go unchecked and guide all the subsequent thinking, likely in the wrong direction. Apart from the interaction of the two thinking systems, language as the vehicle of thought and the major means of communication is often vague, leaving much room for multiple interpretations and personal associations. It is not infrequent that we use the same language to mean different things. Therefore, effective communication should start with clear definitions of or consensus on key terms.

This leads to Stage Two: Identify key words or ideas for clarification that are vague but crucial for smooth communication. This may sound less challenging than it actually is since some key words can seem so familiar at first sight that they will fail to alert S2 to questioning. For example, Einstein (claimed) (1936) defined education by quoting an anonymous wit “education is that which remains, if one has forgotten everything he learned in school” (.) In order to understand his view of education, three things need to be clarified: What remains, what one has forgotten, and what one has learnt. While these words all look familiar, the loaded meaning of remains, forgotten, and learnt will mean different things to different people. Therefore, they should be clarified before a consensus on Einstein’s idea of education can be reached.

Stage Three makes an open minded inquiry so as to reach insightful understanding as well as a critical view. According to Einstein, education involves learning, forgetting, and remembering (cited above). Thus, the discussion should be focused on what is supposed to be learnt in school, what is likely forgotten (while still in school), and what can be retained even when school is left behind. Einstein was famous for his theories of special and general relativity that forever changed our understanding of space and time. (This is an established consensus: the previous understanding of time and space is framed by Newton’s classic physics – no need for citation) But this theory was unknown to him as a student. In fact, it was almost unthinkable to the talented of his time. The obvious question is what he had retained that was responsible for his theory? The inquiry for possible answers will bring reflective practice to a higher cognitive level, thus making it a truly educational process.

**Application two: Being open-minded**

Dewey (1916) laid out the most cited definition of open-mindedness as accessibility of mind to any and every consideration that will throw light upon the situation that needs to be cleared up, and that will help determine the consequences of acting this way or that. His view of open-mindedness that advises a thorough investigation and an appropriate control of the state of doubt can be seen as complementary to his call for reflective thinking that encourages a state of doubt propelling further inquiry into a belief. To set a boundary, Hare
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(2009) delineated open-mindedness from respectful and thoughtful attention to pseudoscience, paranormal claims, and ideas that have failed the test of critical scrutiny. His view of open-mindedness required readiness to reconsider present conclusions in light of future evidence that is technically possible but not currently available. Believing that open-mindedness is central to any account of education that rejects prejudice and uncritical belief, Hare studied and disseminated the concept since late 70s. He (2004) emphasized a willingness to revise one’s beliefs. In recent years, this notion has been adopted and expanded by other scholars such as willingness to learn from others’ perspectives (Taylor & Bright, 2011), an openness about mistakes (de Groot, Endedijk, Jaarsma, Simons, & van Beukelen, 2014), and awareness of one’s fallibility as a believer (Riggs, 2010). All these ideas are relevant today when divided views are common in a growing complicated world.

A willingness to revise one’s beliefs is a crucial attitude in open-mindedness. It starts with awareness of one’s fallibility as a believer, also referred to as intellectual humility. Only genuine awareness of one’s limitation can enable one to perceive the value in adopting the lens of others and to realize the merit in revising one’s beliefs when proved necessary. Intellectual community is ridden with various beliefs or schools of thought, a sign of progress as well as a source for controversies. In education, standardized tests remain a controversial issue for decades. Either side holds fast onto its beliefs, almost to the point of impossible reconciliation. Meanwhile, it is an important issue in need of collaboration since it concerns educational outcome as well as process. Only when each side is aware of its fallibility will it be willing to learn from the other side and revise its own perspective accordingly. Thus, the issue may be more constructively reviewed and the controversy can result in progressive improvement.

Before one is willing to revise one’s beliefs, all must be open about mistakes regardless of who made them. However, the link between mistakes and stupidity is so embedded in American culture as Stevenson and Stigler (1992) came to realize while observing an elementary classroom in Japan. Their epiphany occurred as they watched a Japanese boy struggle with the assignment of drawing cubes in three dimensions on the blackboard. The boy kept at it for forty-five minutes, making repeated mistakes, until he eventually mastered the problem. In the course of it, Stevenson and Stigler experienced increasing anxiety and embarrassment. Yet the boy appeared utterly at ease and so did his classmates and teacher. The contrast suggested strongly that American culture exacts a great psychological cost for making a mistake whereas Japanese culture truly perceives mistakes as a natural part of the learning process. To this day, prevailing American culture still considers calling a mistake as it is hurting students’ self-esteem. What really hurts them is this mistake phobia psychology that not only prevents them from learning freely but also discourages them from testing novel ideas later in their career. The merit of mistakes in learning was contextually evidenced in the research conducted by Cyr and Anderson (2014). It is time to celebrate mistakes when they occur in the course of learning and reflecting.

**Application three: Uncovering implicit assumptions**

This paper defines implicit assumptions as beliefs that are unstated but taken for granted (Fisher, 2011). These beliefs range from factual to analytical to values. They are unstated because they are taken for granted either individually or collectively, regardless of being
verified or validated. This is the inherent problem with implicit assumptions. Moreover, everyone makes implicit assumptions at one time or another due to the uncontrollable operation of S1. While unstated, they usually serve as the hidden logic for a viewpoint. Uncovering implicit assumptions will provide an opportunity to examine the underlying reasons. For example, it is widely assumed that higher education is an effective means of social mobility, a statistically based belief when in comparison with those short of a bachelor’s degree. But this assumption can be misleading if applied blindly. In recent years, this assumption has been proved questionable as globally oriented economy and constant technology innovations have left many college graduates with a job below their credential (DeSilver, 2014). After a closer look at the implicit assumption, the function of higher education can be critically viewed in terms of its mission, curriculum, innovation, and adaptability to the changing reality. In fact, social mobility stems from the rightful and timely response by higher education to a progressive society and careful choice of majors by students. (In other words, not any college degree guarantees access to social mobility.) (The last sentence is deleted since it doesn’t seem to follow the previous sentence. The need for citation is addressed by the above one.)

Uncovering implicit assumptions will bring out unshared assumptions so as to remove the barrier to effective communication. In order to design instruction that will more efficiently assimilate prescribed content, Garrison (1993) used cognitive constructivist learning theory to explicate implicit assumptions regarding distance education. More recently, Australian nursing educators Grealish and Smale (2011) proposed a shared critical reflection method after they found the graduates’ critical thinking being hindered by implicit clinical educational practices. People sometimes make implicit assumptions intentionally, either anticipating a consensus or considering them self-evident. The (exchange below is between an Iraqi journalist and a U.S. military spokesman that) following conversation shows that the key concept of liberation is implicitly assumed, taken for granted but not mutually shared. (Since no original text can be located, I deleted some text in red parenthesis and added some words in red to keep the text coherent and cohesive.)

The journalist: You claimed that you have liberated Iraqi people. Why are there demonstrators outside?
The spokesman: This is exactly the right we have fought for them through our lives and blood.

(The spokesman met the challenge with witty and appropriate response.) It is fair to say that the reply to the question (His message) would be readily understood by those growing up in democracy but may likely get lost to an audience not yet personally exposed to democracy. Apparently, they made different implicit assumptions about the key concept of liberation. If they were articulated and addressed in the first place, they would be elaborately discussed and the communication could lead to a more sophisticated idea about liberation.

Uncovering implicit assumptions can facilitate learning new knowledge. According to Piaget (1952), learning roughly occurs in two kinds of process: Assimilation and accommodation. In a classic story titled Fish Is Fish, Lionni (2015) illustrates vividly how prior knowledge can act as a double edged sword, providing both the creative opportunities and dangers inherited in the knowledge. Upon hearing the frog’s description of creatures on land and in air, the fish assimilates all of it into its prior knowledge about fish. As a result,
the creatures evoked in its mind are fish with feet on land and fish with wings in air. Because his prior knowledge of fish is implicitly assumed and not given an opportunity to be uncovered, no accommodation or paradigm change takes place, leaving the new knowledge wrongly conceptualized. The danger of such learning is depicted when the fish almost chokes to death in its attempt to become a fish on land. This story is analogous to human learning. Before coming to formal education, students have already acquired a range of prior knowledge that significantly influences how they organize and remember the new knowledge. This prior knowledge is often deeply embedded and implicit, suggesting that the false belief and distorted concepts will be brought to a given subject to cause mistaken conceptions and likely lay a barrier to subsequent learning. Moreover, the interaction between S1 and S2 makes prior knowledge hard to resist since it is assumed implicitly. Such power of implicit assumptions was validated by Bransford and his colleagues (1999) when they found that students tend to fall back to their prior knowledge or old habits in a different situation even though they appeared to have mastered the new knowledge in class. Therefore, learners should be given ample opportunity to articulate and discuss their prior knowledge until they fully recognize its influence on their learning.

In conclusion, reflective practice should have some distinct qualities to make it effectively operated, readily recognized, rigorously measured, and educationally rewarded. A state of doubt and open-minded inquiry are proposed as two essential features to serve the above purposes. They are essential mainly because of the unique feature of the practice in which participants reflect on their own experiences, acting as participating observers and observing participants. According to the dual processing theory, we are all subject to the influence of S1, which may trap us in questionable beliefs and unwarranted assumptions, especially when something seems familiar to us. A state of doubt can alert the relatively passive S2 so as to guard us against possible biases and misconceptions. Some distinguished philosophers claimed that a state of doubt can send us to open minded inquiry that will investigate into how our ideas as well as others’ are reasoned and whether our knowledge is validated with available evidence. It is fair to say that the two essentials combined are likely to maximize the reward of reflective practice. The three applications of seeking clarity, being open-minded, and uncovering implicit assumptions are meant to illustrate how a state of doubt and open-minded inquiry can be fulfilled in specifically designed activities.

References


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