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TEACHING CRITICAL THINKING IN A COLLEGE-LEVEL WRITING COURSE: A CRITICAL REFLECTION

Critical Review of Practice

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Abstract

This paper challenges the widely held assumption that teaching writing inevitably equips students with the critical thinking skills required to succeed in college and beyond. The paper reviews the literature on the relationship between writing and the development of critical thinking skills, and critically reflects on the author's experiences in teaching an introductory college-level argumentative writing course. A synthesis of the literature and the author's experiences emphasize that the relationship between writing and critical thinking is not obvious, and that writing instructors must make intentional efforts to clarify this relationship to students, and to teach and assess critical thinking skills from students' essays. Additionally, the paper demonstrates that despite critical thinking skill development being an expected outcome in writing courses, the process of enhancing critical thinking skills through written tasks remains covert and largely undocumented. Following a critical analysis of her teaching practice, the author proposes and documents an integrated approach to fostering critical thinking within a college-level writing course. Ultimately, this paper makes a theoretical and practical contribution to the less explored quest of clarifying the link between critical thinking and writing and illuminating the process of integrating both skills sets in a writing course.

Keywords: critical thinking skills, critical thinking development, evaluating critical thinking, argumentative writing, college-level writing, writing instruction

1. Introduction

Writing competencies are valued as one of the predictors of students' academic success in post-secondary education. Writing capabilities are tied to the development of critical thinking capacity in students, both which are recognized as requisites for students' academic success, success in the workplace, and in life (Baron & Sternberg, 1987; Condon & Kelly-Riley, 2004). A widely held belief is that teaching writing skills to students inevitably promotes their thinking capacities. However, research suggests that although writing and critical thinking are related and might even overlap, the connection between writing and critical thinking is not automatic (Condon & Kelly-Riley, 2004; Yancey, 2015). Writing teachers are faced with the incongruity of well-written but poorly reasoned essays, and less well-written essays that demonstrate critical thinking. Hence, it is reasonable to conclude that writing influences and helps the writer to articulate the content of critical thinking skills but is not a "package" for critical thinking (Yancey, 2015, p.1), and does not inevitably teach critical thinking (Goodwin, 2014).

While writing is an important vehicle for critical thinking, how writing improves critical thinking is less explored. Indeed, research on critical thinking has yielded little knowledge on how the teaching of critical thinking is integrated in a writing course (Goodwin, 2014). This paper problematizes the common assumption that writing and critical thinking are inextricably related, and that students will become critical thinkers by merely learning to write. By taking a reflective and reflexive approach, this paper documents personal experiences and approaches used to introduce and foster critical thinking in an introductory writing course in a

college setting. The paper proposes that teaching critical thinking explicitly alongside writing skills has the potential to promote students' understanding and use of the critical thinking, resulting in improved overall argumentative writing. Promising strategies for fostering critical thinking skills and assessing these skills in students' writing are also discussed. Ultimately, the paper contributes to the discussion on the relationship between writing and the development of critical thinking skills and augments the limited research on how writing instructor reconcile critical thinking with other aspects of effective writing.

2. Background: Critical Thinking in Higher Education

For over 30 years, the concept of critical thinking has gained currency in debates on the nature and future of post-secondary education. Many institutions of higher education¹ have adopted the view of critical thinking "as a 'generic skill' that is central to most, if not all, subjects" (Davies, 2011, p. 255), and as one of the key competencies that their graduates will possess from participating in higher education. Indeed, critical thinking has become one of the characteristics that define western universities (Barnett, 1997, p. 3).

While the definition of the concept of critical thinking is debatable, its importance in education is not contested. Intellectual and philosophical roots of critical thinking can be traced back to the teachings and vision of the ancient Greek philosophers. Since the beginning of the twentieth century, the role of critical thinking in education and as a desirable attribute of graduates was already evident. John Dewey, an early proponent of education reform, underscored the importance of fostering good habits of thinking among students by noting that, "... all which the school can or need to do for pupils, so far as their minds are concerned ... is to develop their ability to think" (Dewey, 1966, p.152). Dewey emphasized the need to connect the teaching of factual knowledge and intellectual skills to the development of students' ability to think. By late twentieth century, Barnett (1997) underscored the ability to think critically as a requisite for engaging with knowledge, and critical to one's engagement as a global citizen. Moore (2011, p. 261) points to the consensus that "teaching students to be 'critical' in their studies is an intrinsic good" that postgraduate education should aim to fulfil.

The importance attached to critical thinking in higher education in present times is manifested in the curricula and learning materials and activities (Unrau, 1997). A focus on critical thinking is also evident in descriptions and expected outcomes of tasks and assignments students complete, and in professors' written feedback on graded tasks (Moore, 2013). There is also a growth of critical thinking courses in these institutions, aimed at helping students acquire critical thinking skills (Moore, 2011). Also, evident at least in some contexts, is the development of a range of tests aimed at measuring students' critical thinking, problem solving, and written communication skills at university entry and exit points. Such tests include the Collegiate Learning Assessment (CLA) launched in the United States in 2000 by the Council for Aid to Education (CAE), and the Graduate Skills Assessment developed by The Australian Council for Educational Research in 1999 [ACER, 2010]).

Despite the growing emphasis on, and good intentions to foster critical thinking in students in post-secondary institutions, there is concern that very little critical thinking is being taught, and many students show little improvement in their critical thinking skills (Davies, 2011; Trounson, 2011; Rimer, 2011). Even more disturbing are findings that academics, who are expected to help students develop critical thinking skills, have limited understanding of its nature, and are unable to define it. Consequently, they teach course content as distinct from the thinking that is integral to it (Atkinson, 1997; Paul, 2005). In a study by Paul, Elder, and Bartell

¹ Institutions of higher education are used here to refer to universities and colleges that offer 4-year degrees and colleges that offer 2-year diploma programs and/or diplomas leading to degree programs

(1997), a majority of instructors reported that critical thinking was of primary importance to their instruction. Nevertheless, many of them had difficulty differentiating between basic critical thinking terms such as assumptions and inferences or inferences and implications. Many instructors indicated limited or no practical knowledge on how to integrate critical thinking with course content. Hence, very few reported any teaching of critical thinking in their courses. Overall, research demonstrates that many people inside and outside the academy have little capacity for critical thinking (Khun, 1991). Lack of knowledge of the nature of critical thinking reduces educators' capacity to facilitate the development of critical thinking skills in their students (Hemming, 2000).

The current paper uses a personal lens as an instructor of writing, and perspectives from the literature to examine the status of critical thinking skills development within a college level introductory writing course. The paper underscores the importance of intentionally teaching critical thinking skills to students in order to clarify the link between writing and critical thought, and to expand their horizons on the expectations placed on their writing at the college level and in their workplaces.

3. A Writing Course as a Vehicle for Teaching Critical Thinking

This paper is inspired by my experiences as a professor teaching an introductory writing course to first year college students enrolled in various 2-year diploma programs in a college in South-Western Ontario, Canada. The paper grows from the need to examine my own practice and approaches to teaching and assessing a writing course, and the extent to which my practice might be enhancing the mandate of developing critical thinking skills in students in a post-secondary setting.

3.1 The Writing Course

The introductory writing course I teach is aimed at fostering students' writing and critical thinking skills to enable them to write effectively in their programs of study. The course is mandatory for all college freshmen unless they can demonstrate high writing competency through completing a writing test given before commencement of their first semester in the college. The course is provided in a dual-stream system with one stream comprising predominantly native English language speakers or speakers of other languages with high competency in English. Classes in this stream are scheduled for three hours each week for a total of 45 hours a semester. The other stream is dedicated to English language learners, comprised mostly of international and immigrant students whose English language skills are still developing. Classes in this stream are scheduled for a total of 60 hours a semester.

As a writing course, students are required to complete five to seven essays within the semester, and a culminating essay that acts as the final test for the semester. Each of the essays requires students to write a basic five - paragraph argumentative essay that responds to (agrees, disagrees, or partially agrees and disagrees with the prompt's argument) different short readings (prompts). With a few exceptions, students are expected to complete a prompt response in a timed 50 – 60 minutes' session in a classroom setting. The prompts students read are on different topics and do not build onto each other. Similarly, each response is graded singly using a standard rubric, and it is hoped that students will use feedback from one essay to improve the next.

In keeping with the widely accepted relationship between writing and critical thinking skills, the description and learning outcomes of the writing course that I teach incorporates aspects of writing and critical thinking. The course aims to introduce students to the principles of reading, writing, and reasoning. The learning outcomes (Cormier, 2019) include the following:

- Identify author, source title, and thesis in written prompts
- Interpret audience, purpose, and tone in written prompts
- Develop reliable critical thinking and critical reading strategies
- Summarize the arguments of written prompts
- Evaluate supporting evidence for arguments
- Compose complete sentences and paragraphs using effective vocabulary
- Express a clear written argument
- Provide evidence in support of arguments
- Apply basic principles of quotation and/or paraphrase integration
- Reflect on how prompt topics increase one's awareness of the society and culture in which one lives and work

Evidently, the learning outcomes of the course clearly outlines expectations that writing professors should help students to develop both effective writing and critical thinking skills. Given these expectations, my responsibility in teaching this course has led me to reflect on the following four questions:

- a) What is the nature of critical thinking in a writing course?
- b) Why is it important to intentionally introduce students to the concept and language of critical thinking in a writing course?
- c) How might the relationship between critical thinking and writing critically be clarified to students?
- d) What are some promising pedagogical practices for enhancing critical thought in students taking a writing course?

4. Methodology

The research methodology adopted in this paper is critical reflection. Critical reflection involves the process of learning from experience in order to improve practice (Fook, 2012). It is a research methodology (Morley, 2008, 2011) and a technique used to facilitate a deep understanding of a central issue (Hickson, 2013). Understood as both a theory and process, critical reflection enables individuals and groups to articulate, question, and analyze deeply held assumptions about their knowledge and practice, and re-consider possibility for change (Fook & Gardner, 2007). In this paper, critical reflection enables the author to identify, challenge, and analyze the widely held assumption that teaching students how to write automatically equips them with critical thinking skills. The critical reflection approach utilizes empirical evidence and information derived self-reflectively (Fook, 1999). Therefore, this paper reviews research literature on the relationship between writing and critical thinking skills development to provide a detailed account of the assumption held by some writing instructors. It also illuminates the undesirable outcomes of limited acquisition of critical thinking skills among higher education graduates. The author challenges this assumption by reflecting on her practice and detailing her integrated approach to teaching critical thinking skills in a writing course. Information from the literature and the author's reflection of her teaching generate knowledge that can initiate dialogue with other writing instructors, aimed at improving critical thinking instruction in post-secondary writing courses.

5. The Nature of Critical Thinking in a Writing Course

As practitioners, it is important to understand our own practice before we can “conceptualize and imagine the questions we want to ask of practice, before we can identify the dimensions we want to change in it, and before we can address the puzzles we want to solve about it” (Higgs, 2010, p.1). Like many other writing courses, the course outcomes of the writing course that I teach indicate the need to develop both writing and critical thinking in

students. Despite this, the writing-critical thinking instruction relationship is not automatic or always visible. There is evidence that many teachers teach more of structural, grammatical, and mechanical aspects of essay writing than critical thinking skills (e.g., Liu, 2018; Rumniski & Hanks, 1995). Similarly, the evaluation of such skills is fairly more obvious. Indeed, the evaluation of these aspects of writing in the writing course described in this paper are well-detailed in the standard rubric used to score essays in the course, which make the students to better understand the expectations of those elements in their writing. However, different elements of critical thinking that should be evaluated from students' essays are neither overt nor elaborated in the rubric.

On the other hand, the teaching of critical thinking does not occur naturally from teaching the afore-mentioned elements of writing. The writing course syllabus includes topics useful in fostering critical thinking skills in students. These include introducing students to the differences between arguments and opinions, determining arguments from texts, and crafting arguments and counterarguments in their own writing. Students also learn about the importance of supporting their claims, and the different kinds of evidence they can use to support their claims. Logical fallacies are also taught with the hope that students can determine faulty arguments from reading texts (prompts), and to avoid them in their writing. The above topics have the potential to promote students' capacity to question claims and draw logical conclusions. However, they do not necessarily introduce students to the full tenets and context of critical thinking, and how those elements are situated and connected to argumentative writing. Teaching such concepts is likely to result in more grounded and broad knowledge base of critical thinking and might persuade students to embrace and confidently enact critical thought in their writing and beyond. Knowledge of a broad range of critical thinking concepts and the cognitive skills such as those identified by Facione (2015), which will be discussed below, can help students clarify thought processes and correct misconceptions of ideas in their writing.

It might well be that teaching paragraphing, stylistic, grammatical, and mechanical aspects of writing is a transparent and relatively straightforward process for many writing teachers. Conversely, teaching students to be critical writers is an opaque and little documented process in studies reporting on how writing teachers foster critical thinking in their students. Navigating this challenge is at the crux of the examination of my practice in this paper.

6. Why Teach Critical Thinking Directly and Systematically?

Many writing course syllabuses show the intention to teach critical thinking to students. Despite this, there is limited dedicated instruction in critical thinking, leaving many students to complete their college education without ever learning much about what they intended to learn (Graff, 2003). Many college graduates lack the capacity to understand, evaluate, or write arguments, leaving them unable to distinguish acceptable arguments from structurally flawed ones (Larson, Britt, Kurby, 2009). Rumniski and Hanks (1995) emphasize that,

“If [educators] are teaching thinking skills directly and systematically, they are probably doing the right thing. If they merely assume thinking improves as a natural result of subject-specific courses, they are probably not doing a very good job of teaching thinking” (p. 6).

It would be inaccurate to state that students' writing in a college writing course are devoid of some form of critical thinking. What is apparent in many writing samples is the inconsistency, variation in degree and accuracy with which these skills are applied in argumentative essays. Writing samples produced by students in the writing course that is the focus of this paper exhibit different levels of aspects of critical thinking such as arguments,

evidence, and counterarguments, among others. Hence, evidence of critical thought in students' writing can be said to exist along a limited/weak – competent/strong continuum. Samples toward the right side of the continuum represent those that can be rated as moderate to proficiently critically sound. It is worth noting that even when a range of critical thinking skills is used in a writing sample, some skills might not be applied effectively, which compromises the overall quality of a student's argument. For example, a student's sample might demonstrate some capacity for interpretation, analysis, and inference of ideas in the text. However, the critical evaluation of the credibility of claims and the determination of strong and weak arguments might be limited. Such a sample may include biased claims and conclusions, and/or weak and/limited evidence upon which premises are built. Writing samples located towards the left side of the continuum show little critical thinking such as when a sample simply repeats the argument in the reading text and lacks original claims and/or evidence. These variations in critical thought in students' writing samples points to the need for systematic teaching of critical thinking within a writing course. The typical instructor-student conversation below emphasizes the need for direct instruction on critical thinking skills:

Instructor: Student X, why do your essays always repeat and describe the (text) author's argument instead of arguing your original ideas.

Student: Because it is easy.

A concern with student X's prompt responses was that they simply re-described the authors' claims and supporting points. Bean (2011, p. 4) outlines the following four questions to gauge critical thinking in writing: "Is the writing interesting? Does it show a mind actively engaged with a problem? Does it bring something new to readers? Does it make an argument?" X's responses lacked originality of thought or claims, which suggests that the student did not evaluate the validity and reliability of the author's claims and assumptions, in order to carefully consider whether to agree or disagree with the author's claims. Consequently, the responses failed to make a reasonable argument that would be labeled "critically well-thought out."

The student's answer above confirms the observations that, "critical thinking is hard" (van Gelder, 2005, p. 42), and it does not come naturally to anyone (Goodwin, 2014). Humans' thinking is determined by two mental systems: one which involves spontaneous, effortless thinking, and the other which involves calculated, effortful thinking (Kahneman, 2011). Kahneman observes that the human brain is lazy, and defaults to the first system. Similarly, Shermer (2002) describes humans as "pattern-seeking, story-telling animals" who like things to make sense, with preference given to simple, familiar patterns or narratives. Consequently, humans tend to accept patterns and narratives at face value and rarely pursue them further. Goodwin concludes that critical thinking is demanding and does not "spring automatically from a pen moving across paper" (p. 78 -79). To promote critical thinking skills in students, van Gelder (2005, p. 43) argues that:

"... critical thinking cannot be treated as just a kind of gloss on educational content made up of other "real" subjects. Students will not become excellent critical thinkers merely by studying history, marketing, or nursing, even if their instruction is given a "critical" emphasis Critical thinking must be studied and practiced in its own right; it must be an explicit part of the curriculum."

I argue that introducing students to the language of critical thinking helps demystify the often "slippery [and] non-overt" concept of critical thinking (Atkinson, 1997, p. 75), leading them to understand and clarify their thought processes during the writing process. They are also better positioned to understand professors' feedback on their essays and are likely to incorporate this feedback in subsequent writing. Chanock (2000) found that students do not

always understand feedback comments such as “more analysis is required” written by educators on students’ essays. This is because they lack adequate understanding of the meaning of terminology associated with critical thinking such as ‘analysis’, and how they relate to their writing. As a result, it becomes difficult to fully guide students towards improving their critical thinking and writing skills (van Gelder, 2005). Hence, teaching the meaning of such concepts is necessary.

7. An Integrated Approach to Teaching Critical Thinking in a Writing Course

I contend that effective teaching of writing skills at the college level must include the explicit and integrated teaching of core concepts and skills typically associated with critical thinking. Adopting an integrated approach to developing critical thinking alongside writing skills is an important step in teaching students to write essays that are both clear and interesting (Bean, 2011). Indeed, college students must develop these skills in order to think, write, and communicate effectively (Çavdar & Doe, 2012).

7.1 Teaching Critical Thinking Concepts and Skills

As part of an integrated approach to teaching writing and critical thinking skills, I introduce students in the course to the concept and language of critical thinking including skills useful for the critical thinking process. This practice is supported by Goodwin’s (2014, 79 -80) assertion that:

“...the best way to help students learn critical thinking may be to actually teach it. What may be more useful it to explicitly introduce students to the language of logic and reason, providing them with an approach to analyze their own and others’ thinking.”

Bearing in mind that some words have multiple meanings and usage in different contexts, clarifying the meaning of a key word such as “critical” in critical thinking is necessary (Moore, 2013).

The following questions help to assess students’ prior knowledge of the concept of critical thinking and its related skills, and to extend and relate this knowledge to the academic, argumentative writing they are expected to master in the course:

- What comes to mind when you hear the terms “critical thinking”?
- In what ways do you apply critical thinking in everyday life?
- What are some barriers to thinking critically?
- Do you think critical thinking is important to writing? Why or why not?

The class brainstorms on various understandings of the concept of critical thinking and determines some common thread in their “definitions.” Given the highly contested definition of critical thinking, it is important to note that this exercise does not aim or claim to arrive at a comprehensive definition of critical thinking, but rather to establish an operational understanding of it and its skills relevant to students’ writing in the course. Hence, our definition of critical thinking is not singular but incorporates behaviors that students perceive to be characteristic of a critical thinker including, but not limited to, ‘thinking outside the box’, supporting one’s ideas, thinking deeply about an issue, questioning what one hears and reads, and thinking about different solutions to a problem. In agreement, Condon and Kelly-Riley (2004, p. 65) suggest that faculty should “create contextually based definitions and applications of critical thinking” rather than attempting to create an all-inclusive definition. Ultimately, the class’ collective articulation of understandings of the concept of critical thinking serves to clarify expectations placed on students’ writing in general, and regarding the integration of critical thinking skills, in particular.

7.2 Facione's Conception of Critical Thinking

Facione's (2015) work on critical thinking and its importance forms the basis of my introduction of critical thinking skills in the writing course. Facione (p. 9- 10) includes six cognitive critical thinking skills that are considered to be central to critical thinking, and subskills associated with each. A summary of these core skills and subskills is provided in Table 1. Facione also provides two sets of statements, one that someone inclined to think critically is likely to agree with, and the other that a person less inclined to think critically would likely agree with. Additionally, there is a 20 item Critical Thinking Mindset Self-Rating Form that students use to rate their dispositions towards critical thinking. These documents help students to not only assess their own critical thinking dispositions but also introduce them to the language and concepts associated with it such as questioning/inquisitiveness, assumptions, open-mindedness, bias, prejudice, and impulsive thinking, among others.

It is worth noting that Facione's (2015) core cognitive skills are not the only critical thinking skills that students in a writing course should possess or need across the academic disciplines. In other words, my choice of these skills and activities is not influenced by the looming 'generalist' – 'specificist' debate on whether critical thinking skills are generic or subject/discipline-specific. (See Moore, 2004, 2011, 2013; Ennis, 1987, 1992; McPeck, 1992 for the generalist – specificists debate). Rather, I use these skills for the linkage they provide between argumentative writing and thinking critically. To clarify this connection to students, I lead them in a discussion of the full meaning of Facione's core skills and descriptions, and, using examples from a written prompt response, I illustrate how each of those skills relate to the argumentative writing that students are expected to produce in the course. This knowledge becomes foundational to their understanding of the need for, and application of critical thinking skills in their writing.

Table 1: Core critical thinking skills

Skills	Experts' Consensus Description	Subskill
Interpretation	"To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria	Categorize Decode significance Clarify meaning
Analysis	To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express belief, judgment, experiences, reasons, information, or opinions"	Examine ideas Identify arguments Identify reasons and claims
Inference	To identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to reduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation	Query evidence Conjecture alternatives Draw logically valid or justified conclusions
Evaluation	"To assess the credibility of statements or other representations that are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions, or other forms of representation"	Assess credibility of claims Assess quality of arguments that were made using inductive or deductive reasoning

Explanation	“To state and to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological, and contextual considerations upon which one’s results were based; and to present one’s reasoning in the form of cogent arguments”	State results Justify procedures Present arguments
Self-Regulation	“Self-consciously to monitor one’s cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis, and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results”	Self-monitor Self-correct

Source: Facione (2015). Reproduced with permission.

7.3 Writing, Critical Thinking, and Problem Solving

Bean (2011) observes that an important step in helping students to be critical thinkers is to provide writing tasks that are rooted in specific problems. Bean acknowledges that, “Part of the difficulty of teaching critical thinking ... is awakening students to the existence of problems all around them” (p 3). Hence, my work in teaching critical thinking skills within a writing course goes beyond exposing students to the theory of critical thinking and its associated skills and their meanings. This is in recognition that it is not enough to learn about critical thinking but rather that students must engage in critical thinking in order to be critical writers (van Gelder, 2005). In the writing course that is the focus of this paper, students read short essays on various topics (e.g., college/student life, economy, health, environment, lifestyle, etc). These texts present ill-structured problems, defined by Barrows (2002) as complex problems without a singular solution, requiring students to think of multiple solutions and write a well-supported argument for their solutions. To write a well-thought-out argument, students are expected to identify any unrealistic claims and illogical underlying assumptions in the texts and write argumentative essays that critically respond to the texts by agreeing or disagreeing with their arguments.

Throughout the course, I encourage students to recognize the essays they read as representing real life problems, many of which do not have singular, easy, or concrete solutions, as opposed to seeing them merely as writing tests used to assign them a grade in the course. I emphasize the importance of critical thinking skills in problem-solving by guiding students in analyzing and questioning claims in texts that they read and identifying illogical and uncritical assumptions therein. Students are challenged to grapple with, and carefully consider different, reasonable solutions to the problems presented in various texts and provide well-reasoned and supported arguments in their response essays. This process of sensitizing students to the act of writing as problem-solving is intended to challenge them to develop critical thinking abilities for solving problems within academia and beyond. Paul (1984) affirms critical habit of thought as a strategy for engaging life’s problems.

8. Discussion

Despite the writing - critical thinking conundrum documented in research (e.g., Condon & Kelly-Riley, 2004; Yancey, 2015), little dispute exists on the view that writing, which cuts across all disciplines in college and beyond (Condon & Kelly-Riley, 2004), can provide unique opportunities for developing critical thinking skills in students. For writing to promote the acquisition and use of such skills, students must be presented with authentic and non-traditional, writing assignments. Instructors must also emphasize and assess different aspects of critical thinking skills in students’ writing (Liu, 2018; Sinaga & Feranie, 2017; Çavdar & Doe, 2012). However, based on the literature reviewed in this paper, the current state of critical

thinking instruction reveals a disconnect between practice and the necessary conditions for fostering critical thinking skills through writing assignments. Hillocks (2010), for example, notes that while teaching critical thinking is at the heart of secondary and college education, there is little information in the literature on what is meant by critical thinking, or how it should be taught and judged in writing classes. Additionally, most textbooks on teaching writing do not discuss what is involved in critical thinking in writing. Other studies on the assessment of critical thinking skills in students' writing (e.g., Condon & Kelly-Riley, 2004) found that a common writing assessment practice tends to be satisfied with, and rewards accurate information retrieval and summary with little attention paid to thinking skills. Evidently, changes in the conception and instruction of critical thinking skills are needed in order to better facilitate the development of these skills in higher education contexts.

This paper documents the author's critical reflection on her practice and intentional efforts at introducing students to the broad concepts and language of critical thinking, and reviews literature supporting the need to teach critical thinking directly and systematically in a writing course. Learning outcomes of writing courses typically include the development of critical thinking skills, but little direction is provided on how to integrate the teaching of these skills with other writing skills (e.g., aspects of style and mechanics). Consequently, there is empirical evidence of variations and barriers in writing instructors' endeavor to teach critical thinking directly and systematically in their courses. Nicholas and Labig (2013) found that some instructors depend on their intuitive, "I know it when I see it" notion of what critical thinking is and how to assess it in their courses. This intuitive and implicit approach to fostering critical thinking skills in students does not guarantee that students receive specific, direct instruction on these skills, and that they understand exactly what level of thinking skills their instructors require from their assignments. Perhaps a widely shared belief that discourages a dedicated and explicit instruction of critical thinking in writing courses is that such instruction would take time away from teaching the course content (Bean, 2011). Based on reflection on my teaching and in support of Bean's response to this view, the solution lies in conceiving the course goals as integrating critical thinking as part of the overall content rather than as an isolated entity. As Bean observes, "writing is both a process of doing critical thinking and a product communicating the results of critical thinking" (p. 4). Viewed this way, writing instructors can efficiently accomplish their writing-as-product and process course goals by first establishing product goals and then developing problems that will help students to develop critical thinking skills. This approach inevitably facilitates the intentional instruction of the concepts and language of critical thinking to students.

An important goal of this paper was to challenge the widely held assumption that teaching students how to write automatically develops their critical thinking skills. Research on how effectively instructors in higher education foster critical thinking in their classrooms (e.g., van Gelder, 2005; Paul, 2005; Goodwin, 2014) show that many writing instructors lack a clear understanding of the relationship between writing and critical thinking, and the capacity to integrate both skills in their courses. Drawing on relevant literature and my practice as an instructor of writing, this paper emphasizes the need for writing instructors to clarify to their students the intricate relationship between critical thinking skills and writing. In order to explicate the writing-critical thinking relationship to students in my course, I draw from Facione's (2015) theoretical concepts and core critical thinking skills and, using writing assignments about real life problems, I illustrate the skills' practical fit with different aspects of an argumentative essay. This process necessitates and successfully utilizes an integrated approach that not only elucidates to students the connection between writing and critical thinking, but also teaches them how to write critically. Flores et al (2012) support the

integrated approach to teaching critical thinking as it provides students with the capacity to integrate the skills with the course content and across other areas of their lives.

9. Implications and Recommendations for Practice

The acquisition of effective critical thinking skills has far-reaching implications for educational institutions, students and their communities. Despite critical thinking development being a central goal for many institutions of higher education, there is little consensus and consistency on instructional strategies, faculty training, and administrative support, resulting in differentiated outcomes of their efforts (Flores, et. al, 2012). According to Flores et al, these institutions need to enhance their efforts and strategies of preparing their graduates to be competent in solving complex problem, and to be innovative and adaptive global citizens capable of operating in a rapidly evolving knowledge-based society. To enable this, higher education institutions have to restructure their educational systems, conception of teaching, and their definition of success for their graduates. Administrators in these institutions must set clear goals regarding critical thinking instruction, monitoring and evaluation. They should also provide training and professional development to their faculty, and other resources that ensure that critical thinking becomes infused in the culture of their institutions.

Changes in the educational systems of higher education institutions must address their modes of knowledge transmission. Researchers (e.g. Tsui, 2002; Barnes, 2005; Flores, et al, 2012; Sinaga & Feranie, 2017) have pointed to the limitations of traditional, teacher-centred course delivery modes, and called for a shift to learner-centred instructional strategies that provide students the opportunities to learn both the course content and critical thinking. A range of teaching strategies that promise to promote critical thinking in a writing course are discussed below.

9.1 Engaging Writing Problems/Topics

Topics for argumentative writing should be carefully selected as they determine the goal, nature, and structure of writing (Widyastuti, 2018). Such topics should provoke students' critical thought and develop other elements of writing useful for communicating their arguments. Authentic or anchored critical thinking teaching method involves presenting students with "... problems that make sense to them, engage them, and stimulate them to inquire" (Abrami, Bernard, Borokhovski, Waddington, Wade, & Persson, 2015, p. 290). According to these researchers, students are likely to use problems that seem genuine and relevant to them as tools for thinking. Liu, (2018) posits that presenting students with problems relating to their daily lives facilitates easy generation of ideas and encourages independent thinking. It also lessens the task's difficulty, re-directing students' focus to other aspects of writing such as critical thought. This problem-based approach to teaching critical thinking involves a series of recurring and reflective activities that teach students specific skills such as reasoning, self-review and modification or correction of their prior thinking, and the application of new knowledge to new problems (Kek & Huijser, 2011). In an argumentative writing course, critical thinking and writing skills can be learned by engaging in pre-writing, drafting, and post-writing sequence of activities, and multiple feedback discussed by researchers such as Çavdar and Doe (2012).

9.2 Staged Writing and Instructor Feedback

According to Çavdar and Doe (2012), one type of traditional writing assignment involves students writing several different essays that do not build onto each other. Instructors grade each writing assignment and provide feedback on the essay's strengths and weaknesses and hope that students will reflect on the feedback and incorporate it in their subsequent

writing. However, these researchers note that students disregard feedback provided on their essays, resulting in repeated errors in their subsequent writing. Because students are not given the immediate opportunity to review their first essay draft in light of the new insights from the feedback, they fail to develop critical thinking skills.

Authentic writing assignments that stimulate students' critical thought should adopt a phased, multi-draft, and multi-feedback approach. Bean (2012) views a phased approach to writing to be one of the most powerful tools for teaching critical thought. Widyastuti (2018) believes that multi-draft writing provides students the opportunity to write, practice, and think more, while Sinaga and Feraine (2018) emphasize that the writing stages give students the opportunity to plan their writing, resulting in more comprehensive and detailed product. Also, students analyze their claims and arguments in the review stage of their writing, which enhances critical thought in their writing. Çavdar and Doe (2012) note that multi-draft writing assignments provide students the incentive to consider instructor feedback and affords them several opportunities to review their writing and correct any misconceptions and incorrect assumptions they may have in the initial drafts. Multi-feedback encourages communication between students and instructors during the various drafts, allowing students to include and demonstrate improved thinking, writing, and learning in final drafts.

Developing critical thinking skills through a multi-draft, multi-feedback writing process requires students to have the capacity for self-regulation, which is one of Facione's (2015) core critical thinking skills. Self-regulation or meta-cognition, involves students consciously examining their thinking processes in order to question, confirm, validate or correct their own reasoning or conclusions. Because argumentative writing involves controversial issues, students should be sensitive to personal biases, and be able to separate their personal opinions and assumptions from those of the text they are reading. Ultimately, students re-consider, revise, and correct their prior interpretations and conclusions based on their own metacognition and multiple feed-back received on their drafts.

9.3 Peer Feedback

Like instructor-feedback, peer feedback is used extensively to foster writing and critical thinking skills in writing classes in post-secondary settings (Topping, 2003). As part of multi-draft, multi-feedback writing process, peer editing requires students to review other students' essays and critique them following instructions provided by the instructor. Peer review can be done by individuals or groups, and feedback can be written or oral (Rieber, 2006). Unlike instructor review, peer review has the potential to diminish the instructor-student power relationship, allowing students to provide honest and critically sound feedback to their peers (Lui, 2018).

Peer feedback is best used alongside instructor feedback in the writing process. Researchers recommend that peers review and give feedback on other students' first draft (Liu, 2018; Luthy, Peterson; Lassetter & Callister, 2009). According to Luthy, et al., when students review other students' first draft, instructors are less likely to receive poorly written papers that take long to grade. Liu argues that reviewing a peer's first draft improves the reviewer's critical capacity and allows the author to gain insights from the writing of others, enabling them to view their own writing more critically. Evidently, peer feedback benefits the author, reviewer, and instructor.

Rieber (2006) outlines four key benefits of peer feedback during phased writing. First, students are likely to complete their writing before the due date. This gives students the opportunity to edit and revise their writing, eliminating incidences of poorly written essays associated with last minute completion of writing tasks. However, Bean (2002) cautions that

last minute essays can mostly be discouraged if instructors design and emphasize writing as a process and encourage substantial revision of students' drafts. Second, students tend to polish their draft a little more when they know that another student will review and comment on their writing. They do not want to appear sloppy to their peers. Third, peer review ensures that students review and understand the assignment's expectations in order to be able to comment on the extent to which others adhere to the assignment instructions. As a result, reviewers are likely to learn more about their own work by reviewing another student's writing than they would from the feedback they receive from another student. Fourth, students are more receptive of peer feedback than instructor feedback. Instructor feedback is evaluative of what is right or wrong, while peer feedback focuses on how well their peers' essays fulfill the assignment's guidelines.

Despite the benefits of peer review in enhancing students' writing and CT, it is not without shortcomings, but which can be overcome. Rieber (2006) notes that peer review takes class time. However, this problem can be eliminated by assigning the review as homework to be completed outside of class hours. Another issue is that weak students may not provide valuable feedback to strong students. However, weak students can gain insights from stronger students' work, and may be able to review their own work more critically from reviewing others'. Finally, some students may justify their lack of thoroughness in revising their writing by blaming the peer reviewer for not notifying them of all the problems in their drafts. However, instructors should emphasize that peer reviews are one aspect of the correction process, and that individuals are fully responsible for diligent review of their drafts and the final product.

My experience with attempts at peer review in my writing course is that some students are resistant to, or uncomfortable with presenting their writing for peer review. A lesson learned is that peer review should be well outlined as a crucial part of the writing process in the course, and its importance discussed with the students as part of course and assignment expectations.

9.4 Re-thinking Timed Writing Assessments

Condon and Kelly-Riley (2004) examined two large-scale assessment programs – the Writing Assessment Program and the Critical Thinking Project – designed to evaluate student learning outcomes at Washington State University (WSU). Their goal was to determine whether college-level writing improves critical thinking abilities. Overwhelmingly, they found that although students' writing samples were acceptable in quality, they lacked in analytic skills, and higher order thinking abilities.

Condon and Kelly-Riley (2004) found impromptu, timed writing, the most widely used form of assessment, to deny students the opportunity to think critically, and to include higher order thinking in their writing. Writing assessments at WSU require students to read a short text that prompts them to respond to it by either agreeing, disagreeing, or re-framing the problem in a different context. Students are expected to write a longer argumentative essay and a shorter reflective essay on the text within a period of two hours. Students' writing samples consistently failed to show higher order thinking. These researchers were not able to provide conclusive explanations for their finding. However, they proposed that students in college treat timed writing in the same simplistic manner in which they have been trained in their K- 12 schooling, where timed writing assesses limited abilities such as mechanics of writing and language use. Hence, they underscore the limitation of timed writing in assessing broader and complex set of competencies such as those involved in higher order thinking.

The proposal that students need more time to write in order to produce critically-thought -out writing is echoed by Liu (2018) who argues that students need a lot of time to

think and practice their thinking abilities. This is also implied by staged, multi-draft and multi-feedback proponents discussed earlier in this paper. The fact that several draft-feedback cycles show improvement in critical thought in students' writing suggests the need for allowing students adequate time and several opportunities to think and re-think their ideas and arguments. Clearly, spontaneous, timed writing assessments are inadequate in teaching students how to think.

Negative effects of timed writing assessments on thinking skills development are evident in the writing course that I teach. In 50 minutes, students are required to read, summarize, and analyze a short text they had not seen before, and decide and formulate their own responses to the text. They then write an argumentative response essay to the text's argument. Even when assertions in the thesis statements in students' samples seem promising, they do not always translate into an argument that fully exhibits critical thought. Writing samples produced by many students in the course are either limited in evidence used to support claims, evidence is not clearly relevant to the claims, and/or arguments are not fully developed, resulting in arguments that are not completely convincing. Many students have blamed these limitations on their response essays to a lack of adequate time to carefully analyse and evaluate the text's arguments and formulate strong and adequate evidence to support their claims. This experience stresses Condon and Kelly-Riley's (2004, p. 68) assertion that unless the purpose of timed writing is to elicit and assess basic writing skills, then, "time has come to retire the timed writing method for ...testing of writing... that ask students to demonstrate broader sets of competence."

9.5 Effective Evaluation of Critical Thinking Skills in Argumentative Writing

There is a plethora of research on instructional strategies that facilitate the development and enhancement of critical thinking abilities in students (e.g., Tsui, 1999; 2002; Duron & Waugh, 2006; Paul & Elder, 2006; Abrami, et al., 2015). However, there are few scoring guides and inconsistent guidelines on how critical thinking skills are evaluated in written discourse within a writing course or integrated in other discipline-specific content (Stapleton, 2001). Tsui (2002) and Condon & Kelly-Riley (2004) emphasize the need for instructors of writing to stress, require, and explicitly evaluate aspects of critical thought in students' writing. If students know that their writing will not be evaluated for critical thinking skills, they will not endeavor to include them in their writing.

To facilitate the evaluation of critical thinking skills in students' writing, learning outcomes that address critical thinking should be clearly selected and articulated in the course. Learning outcomes that target the development of such skills must include higher order thinking skills comprising of analysis, evaluation, and creation of knowledge (Duron & Waugh, 2006). Scoring guides for students' thinking abilities are then created following these outcomes (Armstrong, 2010; Kek & Huijser, 2011). Learning outcomes and scoring guides created from them should be shared with the students so they are aware of the standards that their writing has to meet (Yancey, 2015).

Rubrics are a common scoring guide for argumentative writing. Effective rubrics clarify expectations and criteria of written tasks and have the potential to create meaningful feedback and self-assessment opportunities for students (De La Paz, 2009; Jonsson & Svingby, 2007). However, because of the common assumption that critical thinking skills are automatically embedded in basic writing skills, criteria for evaluating critical thinking skills in an argumentative essay are not well-defined or systematic (Ruminsky, 1995). Many rubrics used to grade argumentative writing adopt vague and narrow requirements such as that students should engage in 'persuasive writing', which is not enough to enhance college students' critical thinking skills (Hillocks, 2010). In addition, guidelines and evaluation criteria in rubrics are

not effectively communicated to students, limiting their ability to produce writing that meets the set standards for writing tasks (Harris, 2006).

A rubric that effectively evaluates argumentative writing should integrate elements that overtly assess aspects of critical thinking as well as elements of writing (e.g., grammar, organization, style). Such a scoring guide ensures that the various elements in a student's writing are not collapsed into one overall impression typical of holistic scoring (Condon & Kelly-Riley, 2004). Consequently, it serves an instructional purpose by facilitating the provision of useful feedback after a clear assessment of not only the content but also the reasoning, evidence, interpretation, and evaluation of ideas in the written text (Facione & Gittens, 2016).

Facione and Gittens' (2016) Rubric for Evaluating Written Argumentation (REWA) is a useful example of a rubric that includes basic elements of writing and those of critical thought. REWA comprises eight elements used to judge argumentative writing, and four criteria – Highly developed, Developed, Underdeveloped, and Substandard – to assess those elements. Table 2 shows elements in REWA, and brief summaries of what each element assesses.

Table 2: REWA elements and summary of criterial descriptions

Elements of Written Argumentation	Summary of Criterial Descriptions
Purpose and focus	The nature and clarity of decisions the writer makes about focus, organization, and content in the writing
Depth of thought	The extent to which the writer understands information and its implications beyond the immediate subject and context
Thesis	Availability and nature of assertions, and the extent to which they provide focus and direction to the essay
Reasoning	Quality of argument including evidence and development of ideas Quality and quantity of supporting evident and its relevance to the thesis The extent to which assumptions are recognized and made explicit The extent to which inferences and interpretations are analyzed and presented accurately
Organization	The sequencing of ideas within and across paragraphs, and the degree to which this facilitates coherence and reader's comprehension of ideas in the text
Voice	The writer's control of language to reflect confident voice/personality The degree to which the writer shows awareness of an intended audience and engages with that audience.
Grammar and vocabulary	How correctly grammar and vocabulary are used to promote readability of the written text
Mechanics and presentation	The use of punctuation, spelling, and capitalization, format and style in the written response

Elements of written argumentation are adopted, and criterial descriptions summarized from REWA with permission from the authors

10. Future Research

Information analyzed in this paper derives from existing literature and the author's critical reflection on the process and resources used to introduce students to the concepts of

critical thinking, and how to integrate them in their writing process. Future research can take an empirical approach that collects data from many instructors of writing in a particular institution in order to elicit information on their critical thinking teaching process and strategies. Such a study would generate a body of knowledge on how to prepare students to be critical thinkers in college and beyond, which college instructors can draw from in their practice. It might also facilitate a level of consensus in critical thinking instruction, which is largely elusive in the literature of critical thinking pedagogy. The author utilizes Facione's (2015) theoretical concepts as a lens for understanding the relationship between writing and critical thinking, and to enable an integrated approach to teaching critical thinking in a writing course. Due to the abundance of theories that can be used to guide critical thinking instruction, research utilizing other theories of critical thinking would be useful.

This paper gives an overview of the state of critical thinking instruction within a writing course, with an emphasis on instructors as agents of the expected critical thinking development outcomes. However, the role that institutional culture and administrative support plays in empowering or limiting faculty's effectiveness in their practice cannot be understated. Research that examines the level of institutional support accorded faculty in their responsibility to foster critical thinking would be insightful into what changes need to happen at individual institutional level.

11. Conclusions

Despite the emphasis on the need to promote critical thinking skills among students in institutions of higher education, there is overwhelming evidence that this goal is not being achieved for many students. Writing across the disciplines is viewed as an important tool for teaching critical thinking. However, the widely held notion that teaching writing automatically improves critical thinking skills in students has prevented dedicated and systematic teaching of higher order skills that students need to succeed academically. This paper used research literature and personal experiences in teaching an introductory college level writing course to interrogate the state of critical thinking skills instruction in a writing course. Research literature and personal experiences justify the need for teaching critical thinking skills alongside basic writing skills in an argumentative writing course. As underscored in this paper, an integrated approach to enhancing the development of critical thinking skills through writing has the potential to align institutional goals with practice. For this to happen, institutional leadership has to take the responsibility of clarifying, monitoring, and assessing their goals, and providing the necessary tools that enable faculty to achieve those goals. Ultimately, the development of effective critical thinking skills among college graduates depends on a collaborative vision and intentional efforts of institutional leaders, their faculty, and employers who seek workers capable of functioning effectively in increasingly complex work environments.

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