

Enhancing Critical Thinking Skills through Reflective Writing Intervention among Business College Students

Nafaa Bouanani

Faculty of Education Sciences, University Mohammed V, Rabat, Morocco

Abstract: *The study that fed this article investigates the progress/development of critical thinking skills through a reflective writing intervention. It is hypothesized in the study that metacognitive processes underlying reflective writing and critical thinking interweave. In other words, when students think critically or write reflectively they tend to use the same cognitive skills as writing in general is a circuit of thinking. Hence, It has been empirically proven that Reflective writing is a pedagogical strategy, among others, that enhances Critical Thinking skills of undergraduate students majoring in business, marketing and Finance. Reflective Writing productions of thirty Moroccan Business College Juniors were assessed, evaluated and scored over on academic term. The assessment was performed according to the Assessment Rubric for Critical thinking Skills which was originally designed within the Quality Enhancement plan (QEP) initiative, Georgia State University 2009. Current findings were very significant as the six critical thinking skills defined in the rubric proved major progress.*

Key words: *critical thinking, reflection, reflective writing*

I. Introduction

The current national and international benchmarks of the job market are being more selective than ever, with all the new technologies and job requirements, one should cope with the dynamics of change. Hence, graduate students should be prepared to fit the various exigencies of the new global order. For that, they are expected to be critical thinkers who solve problems creatively, and responsible citizens who make ethical choices and know how to apply and integrate knowledge from different contexts. Students are also expected to be able to present their thoughts cogently both in oral and written communication and at the same time analyze and evaluate important trends in a given discipline and understand the interconnectedness of knowledge. Not only Educational programs should be designed in a way as to meet these requirements, but also educators must commit to sharpening students' cognitive skills. The association of American College and Universities in its 2007 report, *College Learning for the New Global Century*[1], identified intellectual and practical skills including critical and creative thinking, inquiry and analysis, and written and oral communication as elements of the essential learning outcomes that students should gain across their college experience (In: Critical thinking, Georgia state university's Quality Enhancement Plan, 2009) [2]. Therefore, one of the primary aims of undergraduate education is to develop citizens who are able to engage in critical thinking and clear writing as mentioned before. However, there is enough evidence to suggest that Moroccan University graduates are not perceived as possessing these standards. We can even go further to say that many students who do earn degrees have not actually mastered the reading, writing and especially thinking skills we expect of a University graduate. Therefore, the learning outcomes anticipated from major degree programs are not attained.

Due to the abovementioned reasons, educational leaders have given much interest to critical thinking as an indispensable cross disciplinary skill, and promoting it through various means is a recurrent concern for them.

As an instructional method, writing has long been perceived as a way to improve critical thinking. Hence incorporating writing as the conduit for the expression of critical thinking emerges not only from the tremendous research done on this subject but also from successful experiences in other countries such as writing across the curriculum, writing studios and workshops and supplemental instruction. In almost all these experiences, the departing point was from the fact that writing is a strategy to improve learning. Studies in this field showed how the recursive and reflective nature of the writing process contributes to students learning [3, 4](Britton, Emig, Bean, and Moon). Veterans of the Writing to learn approach like James Britton and Janet Emig claim that students' thought and understanding can be developed through the process of writing and especially reflective writing as a means of exploring and reflecting upon ideas. Although Critical thinking is a fundamental goal for higher education in Morocco, it is not explicitly taken into consideration in pedagogy and receives little if no attention as an educational outcome that plays an important role to help integrate college students in the technological and very demanding society we are becoming.

Hence, the purpose of this study is to come up with a way to promote critical thinking using reflective writing. In more practical terms, the current study is going to investigate the effect of Reflective Writing intervention on the development of Critical Thinking skills of undergraduate students. The literature for this

study is reviewed in the light of the conceptual and empirical works related to four major concepts: critical thinking, learning, reflection and reflective writing.

Theoretical Stands

Thinking Critically

Critical thinking is perceived as both skills and dispositions. It is also perceived as being both a stage in the student's epistemic development, a trait of character and a learning outcome of the academic career. It includes the skills of inference, analyzing arguments, making use of inductive or deductive reasoning, solving problems, judging or evaluating, and decision making. The concept is defined in terms of skills and dispositions that could be acquired through instruction and as an outcome of higher education. In 1991, Pascarella and Terenzini[5] compiled a number of definitions, asserting that critical thinking "usually includes the individual's ability to perform some or all of the following: recognize fundamental issues and assumptions in an argument, distinguish important relationships, draw correct inferences from information, deduce conclusions from the provided information or data, interpret and decide if conclusions are reasonable based on the data given, and evaluate evidence or authority".

When thinking critically, cognitive processes and affective dispositions are integrated (Bandman & Bandman, 1995; Ennis, 1985; Facione, 1990; Glock, 1987; Halpern, 1996; Paul, 1993; Scheffer & Rubinfeld, 2000; Watson & Glaser, 1980)[6, 7, 8, 9, 10, 11]. In addition to dispositions, there are cognitive skills which go hand in glove with one another to allow the process of critical thinking. The cognitive skills are: interpretation, analysis, evaluation, inference explanation, self-regulation (Facione, 1990) and reflection (Ennis, 1985; Facione, Facione & Sanchez, 1994; McPeck, 1981[12]; Paul, 1993) and are used in a recursive and dynamic manner which enables the evaluation of own interpretation, explanation of one's analysis and interpretation of own analysis (Facione, 1990).

As mentioned earlier, critical thinking is an aspect of the activity of thinking and a form of learning in the sense that it is a means of generating new ideas by processing the existing knowledge using what Jennifer Moon (2007) [13] calls "tools of manipulation of knowledge" that she summarizes in "analysis, understanding, synthesis", which are strategies of processing information.

In general, critical thinking skills are the set of skills that enable a learner to process any given piece of information. These skills could be improved and taught. They paralleled with critical thinking dispositions which are the attitudes and the mindset a person can have about knowledge processing to accomplish the process of critical thinking. The experts of the Delphi research found critical thinking to include the following skills which have other sub skills. (1) Interpretation, (2) analysis, (3) evaluation, (4) inference, (5) explanation and (6) self-regulation. Each of these skills has a list of sub skills. 1) Interpretation includes classification, decrypting significance, clarifying meaning. 2) Analysis includes examining and exploring ideas, identifying arguments, analyzing arguments. 3) evaluation involves assessing claims and arguments. 4) Inference includes enquiring evidence, speculating alternatives and drawing conclusions. 5) Explanation involves stating results, mitigating procedures and giving arguments. 6) Self-regulation includes self-examination and self-correction (Facione, 1990).

Paul (1990) recognizes that critical thinking is not restricted to skill development. Strong critical thinking is associated with traits of mind: "intellectual humility, intellectual courage, intellectual perseverance, intellectual integrity, and confidence in reason". Paul further argues that the development of these habits among weak critical thinkers is limited to their own self-interest. Intellectual discipline and intellectual values together, according to Paul, constitute genuine education, enabling students to accurately transform their thinking.

The talk about the dispositional side of critical thinking can not be done without referring to the Delphi report as it is a landmark reference and particularly because it matches the goals of the present study in terms of the categorization they have given to critical skills and dispositions. The Delphi panel found that critical thinking has a necessary attitude, a disposition and habit of mind without which the process can not be performed.

Differently put, critical thinking is not only a set of thinking abilities it is a mode of thinking in which the person as a critical thinker should be immersed in and predisposed with. It is in a way or in another related to the person and the habits of mind and attitudes he/she is involved in while thinking critically as mentioned in earlier chapters.

According to the Delphi panel report; there is an inevitable urge to relating critical thinking skills to dispositions. The Delphi panel experts claim that the proper exercise of each cognitive skill can be correlated with its cognitive disposition to do so. The latter is at the heart of the whole process of critical thinking. Facione, Sánchez, Facione, and Gainen (1995) hypothesized three possible ways in which critical thinking skills and dispositions toward critical thinking might interact.

First, overall disposition toward critical thinking may develop a student's decision to use critical thinking skills. In turn, using critical thinking skills successfully will strengthen the student's disposition toward thinking critically. Second, there may be relationships connecting particular combinations of dispositions to

critical thinking skills. Third, there may be an individual association between each critical thinking disposition and skill.

As mentioned in the Delphi report, 'the process of critical thinking is believed to contribute to the fair minded analysis and resolution of questions. It is a powerful tool in the quest for knowledge which can help individuals trespass the blind, sophistic and irrational defense of intellectually defective or biased opinions'. Each of the mentioned authors recognizes that thinking critically is a combination of both skills and dispositions. Moreover, due to the rapid change in all professional fields and the increasing sources of information, individuals possessing internal motivation and tendency to think critically as a habit adding to their level of skills will be prepared to deal with the complexities of life.

Writing, Critical Thinking and Learning

The aim of the present research is to shed light on the interconnectedness between critical thinking, more specifically, critical thinking skills and writing. It was hypothesized that Reflective writing is a pedagogical strategy, among others, that could enhance Critical Thinking skills and dispositions of undergraduate students. In that, there is an assumption that the cognitive processes underlying both concepts interweave. For a further understanding of this interplay, there should be an elaboration on how writing and thinking are related and then examine how these two constructs impact the academic assertiveness of undergraduate students.

In the process of inquiry about teaching strategies or pedagogical practices that enhance critical thinking skills and dispositions, writing is a strategy that appears at the front page of numerous research studies in a variety of fields and disciplines. First, It is worth mentioning that one of the notable features of writing research is that it has been primarily concerned with the higher level thinking processes, and has paid relatively little attention to the basic processes involved in translating thought into visual form as language processing is in a big part a matter of translating content in an alternating way connecting thought to external means of communication be they oral or written. The natural implication is that understanding writing requires understanding the processes involved in producing and evaluating thoughts rather than the processes involved in translating these thoughts into language (David Galbreith et al. 2007)[14]. In cognitive psychology, writing is perceived as a form of thinking and this is illustrated in Kellog 1999[15], as he claims that "Thinking and writing are twins of the mental life". He also proffers that the study of writing offers insight into the psychology of thinking. The study of writing as a means of thinking could be accounted for through several arguments. According to Kellog 1999, quality writing is achieved via quality thinking. Hence writing is a circuit and a tool to thinking as it does not only reflect the ability to think well, but is also a means to promote this ability. When writing about a given subject, a person learns more about his/her knowledge and opinions concerning that subject. This knowledge translating attribute is an essential constituent of writing as a skill. It is hence assumed that developing one's thinking about a given subject could be reached through writing. This notion is central to the claims of the present research as it relates the writing process to critical thinking. The most evident bond between critical thinking and writing is the use of writing to represent the thinking process. The ability to write cogently is connected to critical thinking both in the sequencing and the outline of evidence. The relationship between critical thinking and writing trespasses the process of jotting down the content of a critical mind onto paper or screen. A translation of thoughts into a written version gives room to review. It is hence a chance to enroll in metacognition about own critical thinking as one judges whether the content of the written production is conform with what was originally intended to say or not (Moon, 2008)[16].(Applebee (1984) [17] suggested that writing improves thinking because it requires an individual to make his or her ideas explicit and to evaluate and choose among tools necessary for effective discourse

To summarize the cognitive aspect of writing process, Hayes and Flower cognitive model of writing process lies on four key points:

1. "The process of writing is best understood as a set of distinctive thinking processes which writers orchestrate or organize during the act of composing".
2. "These processes have a hierarchical, highly embedded organization in which any given process can be embedded within any other".
3. "The act of composing itself is a goal-directed thinking process, guided by the writer's own developing network of goals".
4. "Writers create their own goals in two key ways: by generating both high-level goals and supporting sub-goals which embody the writer's developing sense of purpose, and then, at times, by changing major goals or even establishing entirely new ones based on what has been learned in the act of writing" (Flower and Hayes, College Composition and Communication, 1981). Consequently, strategies used in writing are planning, idea generating, self-evaluation, self-monitoring and reflecting. This shows that strategies and approaches to learning are simultaneously used when engaging in writing tasks (Lieneman&Reid, 2008)[18].

Critical Thinking, Reflection and Reflective Writing

It is generally believed that the thinking process involves two aspects: reflective thinking and critical thinking. The two processes are not thought of separately; rather, they are narrowly connected (Brookfield 1987). Moon (1999) has defined reflection as being 'A form of mental processing – a form of thinking – that is used to achieve a purpose or to reach some expected outcome. It is functional in reasonably intricate or unstructured ideas or situations for which there is no evident solution'. This definition of reflective thinking, as it includes approximately the same characteristics of critical thinking, shows that both processes are the two faces of the same coin. When talking about reflective thinking we automatically talk about reflection which is a kind of peculiar reaction to situations, experiences, events or novel information" (Brookfield 1987). It is also a 'processing' stage where information is processed and thinking as well as learning take place with no right or wrong ways of doing it. It is all about exploring questions.

Mezirow (1990), Schon (1987), Brookfield (1987) came up with the concept that reflective thinking starts from the person as a thinker as he/she needs to identify, examine, assess and evaluate one's own ideas and thoughts. This involves revisiting own prior experience and basic knowledge about the topic to be explored which is strongly connected to epistemic development discussed in prior chapters. More importantly, it includes a metacognitive process as learners have to consider and understand how and why they think the way they do. This metacognitive process is inherent as it helps to understand one's beliefs, values, attitudes, and assumptions and hence have a handle on the general process of reflective thinking in any given situation.

The above authors proffer that reflective thinking requires that learners avow they add a valuable knowledge to every experience they encounter. It is very helpful in terms of the recognition and clarification of the important connections between what they already know and what they learn. It is that very process which enhances active learning.

The writing process can lead to the development of thinking and learning and understanding of classroom content. For writing to be beneficial to students, they must understand the subject matter being written about as a result of the writing process (Kataoka-Yahiro & Saylor, 1994; McCabe, 1994). Experiences from the real life settings are ideal for building critical thinking skills if reflection is used as a teaching tool. Reflecting on real world experiences promotes critical thinking capacity, nurtures self-understanding, enables coping, and yields to enhancement in critical thinking skills and hence in academic assertiveness (Craft, 2005; Kennison, 2006; Moon 2008). Reflective writing as a pedagogical strategy allows students to integrate their thoughts and experiences with didactic material to more adequately understand both the experiences and the didactic material McGuire (2009).

Reflective writing to improve critical thinking is discussed by McGuire and colleagues (2009). In that study, reflection papers were defined as "reflective writing assignments that are focused on a specific activity (a reading or group of readings, video, service learning, practicum, role play, guest speaker, group activity) that highlights the student's learning from that activity". Students completed a course where instructors had assigned multiple reflection papers. Seven themes were identified that described how students felt about the utility of reflection papers: active participation, dialogue with instructor, critical thinking, connecting theory to practice, values clarification, improving written communication skills, and concerns with grading. The majority of students approved that the reflective writing assignments were an opportunity for them to take part in class participation, and they believed the exercises helped them to define their values and become more aware of personal biases. The students, overall, felt the exercises were helpful when the instructor gave feedback, and were persuaded the assignments forced them to think critically and elaborate on concepts. The researchers established that for a reflective writing assignment to increase critical thinking, it must be structured to facilitate integration of experience and didactic material, it must be graded by a rubric, and it must foster dialogue between student and faculty member. The articles above describe methods of implementing reflective writing exercises in the classroom to develop students' critical thinking abilities.

II. METHOD

The present study investigates the role of Reflective Writing Intervention in promoting critical thinking skills among college juniors (Third year students) at Business school, majoring in Business, Finance and Marketing and the age of which varied between 19 and 22. The nature of the research necessitates an experimental design. Thirty (N=30) students were assigned weekly reflective writing essays as homework after in-class discussion and reflective dialogues for one academic term. The reflective writing assignments focused different experiences, issues and situations related to personal, professional and educational life. Five assignments for each of the thirty (30) students were selected and scored using an adapted version of the ARC (Assessment Rubric for Critical Thinking). It is a rubric measuring the progress of critical thinking skills through written communication. It was originally designed within the Critical Thinking Through Writing Initiative QEP 2009 (Quality Enhancement Plan) in Georgia State University, USA having as a goal to upsurge students' performance on two major University educational outcomes namely critical thinking and writing skills. The rubric is meant to assess students' use of critical thinking skills in the development of written

production. The ARC Assignment profile was designed to provide consistency and accuracy in the evaluation of the ARC as well as provide guidelines for the use of the assessment at the course level (ARC validity report 2008). As a measurement tool it gauges the following Critical Thinking Skills: Communication, Analysis, Problem Solving, Evaluation, Synthesis and Reflection according to a likert Scale ranging from 4 to 0 (4= Exemplary, 3= Proficient, 2= Developing, 1= Immerging, 0= Not present). The scorer has to look for existence of the criteria standing for every scale in the written productions of the students over an academic term. However, to get more accurate results fitting the goals and definition of critical thinking skills shaping the study, the rubric was slightly modified by changing two skills namely Communication and Evaluation. The skills of Inference and Interpretation were used instead and hence resulting in a consequent change in the scale criteria. The adapted version of the ARC has been piloted and results were analysed from a quantitative as well as a qualitative perspective to establish the quality, reliability, and validity of the assessment instrument. Based on these validation results, some additional refinements and modifications were made to the instrument to ensure the quality of the final standardized instrument.

III. PRESENTATION AND INTERPRETATION OF THE RESULTS

It was hypothesised in the current study that Business college juniors' critical thinking skills would improve following one academic term (8 weeks) reflective writing intervention. After assessing Students' written productions using the ARC, scores were analysed via SPSS, and results showed a significant progress in the development of critical thinking skills ($p < 0, 01$) in all critical thinking skills. The ARC measured the effectiveness of a reflective writing intervention in boosting critical thinking skills. Tables below show the progress in every skill according to number of sessions ($n=5$) and the ARC scale (4= Exemplary, 3= Proficient, 2= Developing, 1= Immerging, 0= Not present) which were statistically analysed using SPSS in an attempt to extract the chi square.

Table1. Chi- Square Critical Thinking Skills progress through Reflective Writing over five sessions using the ARC.

*10 cells (40, 0%) have expected count less than 5.

	Intprtetation	Analysis	Problemsolving	Evaluation	Synthesis	Reflection
Chi square	,000	,000	,000	,000	,000	000
Df	16	16	16	16	16	16
Value	151,042a	159,526a	202,397a	132,292a	177,538a	243,386a

Table 1 report on the “*interpretation, Analysis, Problem Solving, Evaluation, Synthesis and Reflection*” “Skills performance according to the adapted ARC scale scores per session (5 sessions). The progress on performance of *critical thinking skills was significant* ($p < 0, 01$). This shows that the reflective writing intervention was efficient in enhancing students' performance in all skills.

IV. Discussion

The main goal of the present study was to investigate the effect of a five-session Reflective Writing Intervention on progress of critical thinking skills performance of Business College Students. The results indicated that there was a difference in performance skills of students in five session of RW Intervention. Thus, we can conclude that critical thinking skills could be improved through instruction as the students had in class reflective dialogues and instruction about how to write reflectively and be aware of the cognitive skills underlying both Critical thinking and reflective writing. Second, when writing reflectively about experiences students became aware that there is a thinking process underlying such a type of writing namely justifying actions, solving problems, interpreting results, synthesising, inference and reflection and took advantage of their recursive nature. The intervention also showed improvement in written skills and learning outcomes.

To conclude, the RW Intervention was successful. However, there were some limitations to the study namely the adaptation of the ARC first to a Moroccan context and second in specifying the meeting points and overlapping spaces connecting critical thinking skills and reflective writing skills. Second, the research does not make a clear cut between prior disposition to critical thinking skills and the effectiveness of the RWI in promoting critical thinking skills. Further research using the same intervention should take larger population for the sake of result generalizability.

Last but not least, more RWI should be conducted as a cross disciplinary pedagogical strategy to promote critical thinking in all core subjects.

REFERENCES

- [1] D. Bok, M. Brand et al, *College Learning for the New Global Century*, (1818 R Street, NW, Washington, DC 20009), (2007)
- [2] Critical thinking through Writing, Georgia state university's Quality Enhancement Plan, (2009)
- [3] Emig, J. Writing as a mode of learning. *College Composition and Communication*, 28, 122-128. (1977)
- [4] Moon, J. *Critical Thinking: An exploration of theory and practice*. New York: Routledge . (2008).

- [5] Terenzini,P.T.,L.Yaeger P.M.,Pascarella,E.T. *The multiple influences on students' critical thinking skills*. Paper presented at the annual meeting of the Association for the Study of Higher Education, Orlando, FL. Springer (1991).
- [6] Bandman&Bandman.,*Critical thinking in nursing*. (2nd ed).Appleton and Lange: Connecticut (1995).
- [7] Ennis, R. H, A logical basis for measuring critical thinking skills. *Educational Leadership*,(1985).
- [8] Facione, P. A. *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. Executive summary: The Delphi Report. Millbrae, CA: The California Academic Press(1990).
- [9] Halpern. *Thinking Critically About Critical Thinking: An Exercise Book to Accompany Thought and Knowledge: An Introduction to Critical Thinking* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc. Publishers. (1996).
- [9] Paul, R *Critical thinking: What every person needs to survive in a rapidly changing world* (J. Willsen & A. J. A. Binker, Eds.). Santa Rosa, CA: Foundation for Critical Thinking. 1993
- [11] Scheffer&Rubinfeld.,*Critical Thinking: What Is It and How Do We Teach It?*, *Current Issues in Nursing*, J.M. Grace, Rubl, H.K. (2000).
- [12] Mcpeck.J. *Critical Thinking and Education*.Oxford University Press. (1981).
- [13] Moon. J. *Getting the measure of reflection: considering matters of definition and depth*. Centre for Excellence in Media Practice, Bournemouth University, Bournemouth, UK (2007)
- [14] Galbreith. D et al. *Cognitive models of writing*. Stoke-on-Trent,ISSN 1470 – 9570. (2007)
- [15] Kellogg, R. T. *The Psychology of Writing*, Paperback Edition. New York: Oxford University Press(1999).
- [16] Moon.J. *Critical Thinking: An Exploration of Theory and Practice*. Rutledge (2008)
- [17] Applebe. A. *Contexts for learning to write: Studies of secondary school instruction*. Norwood, NJ: Ablex (1984).
- [18] Liennman.T& Reid. R. *Using self-regulated strategy development to improve expository writing with students with attention deficit hyperactivity disorder*. *Exceptional children*. (2008).