

Utilizing Reflective Academics to Improve College Students' Higher Order Thinking Skills

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Abstract—In the twenty-first century, numerous nations and international organizations have voiced their opinions regarding the incorporation of thinking skills to produce individuals who are productive and effective for social and economic prosperity. As a result, it is critical to start teaching students how to think early on in order to help them achieve their personal and professional goals and develop their thinking skills. In light of this, this study looks at how journals can be used for higher-order thinking and reflection. The study found that reflective journal writing helped students develop strategies, achieve autonomy, and activate higher-order thinking skills.

Index Terms- Reflective, Academic, Higher Order Thinking, Language, Development.

I. INTRODUCTION

The need for human skills to advance in various areas of life changed in the twenty-first century. There is a transition of skills that recognize thinking skills as essential for personal and economic prosperity, from simple information memorization to complex and challenging thinking abilities. Numerous countries have perceived the potential and amazing open doors at the worldwide level and consequently the accentuation is on contending with the overall work market which is portrayed by inventiveness, advancement, worldwide reasoning and critical thinking skills and so on. According to Leu et al., the new global cultural, technological, and pedagogical reality has called for more realistic, experiential, and meaningful education at all educational levels. (2005). Students' development of diverse thinking skills becomes necessary and significant in this regard. The purpose of this study is to improve the thinking abilities of English language learners in schools. Using Vygotsky's Sociocultural Theory, this study also tries to understand how thinking skills are developed in a social-cultural context.

II. REVIEW OF LITERATURE

Vygotsky laid out the epitome of human mental working inside the social and social milieu. Through Sociocultural Theory, he introduced social-cultural thinking. In such manner, a few examinations were explored connected with the exploration centre. The sociocultural approach in a variety of educational contexts is one approach to second language acquisition that has recently gained prominence. Students are social, according to the sociocultural approach, when they engage in a variety of social and cultural interactions. Warschauer (1998) argued for online learning in this perspective of language learning by promoting student-centered communication, collaboration, and inquiry that were influenced by a wide range of socio-cultural factors that helped shape a computer-based ESL writing course. Several Vygotskian concepts, such as the Zone of Proximal Development (ZPD), semiotic mediation, positioning learners' voices in class activities, and social relationships of learners, were identified in a study on mathematics education conducted by Lerman (2001). Lerman saw mathematical language as having meanings, connections, strategies, artifacts like diagrams and graphs, physical tools like a scale and compass, learning or teaching through text, teachers, classmates, and others, and so on. This study recognized numerous social elements in the learning climate dissimilar to in view of individual mental cycles which disregarded human connections in their environmental factors. In addition, it introduced Vygotsky to mathematical learning by examining social context through the lens of sociocultural theory. Fukai, Nazikian, and Sato (2008) used projects that focused on the classroom community as a concrete example of how language instructors can incorporate the sociocultural approach into assessment practices. The assessment process was viewed as interactive, dynamic, and collaborative in the sociocultural

approach that was the focus of the study. Cross (2010) aimed to engage with the themes and concerns by considering the potential of Vygotskian sociocultural theory as the basis for a conceptual framework to research language teacher cognition in *Developing Higher Order Thinking Skills of School Learners*. An instructional strategy for teaching fundamental mathematical concepts at the primary level that was based on the Vygotsky approach was developed by Sreeja (2005) in another study on mathematics. Similarly, Pinninti (2015) used scaffolding, mediation, and sociocultural theory-ZPD to develop reading strategies for school students in English language education. According to the study's findings, reading comprehension and reading strategies were significantly enhanced by sociocultural theory. By interacting with teachers and peers, participating in tasks involving peer collaboration, and reflecting on the application of strategies, the students were able to perform better. As a result, this study used sociocultural theory to establish a dialogic and reflective community practice. This section demonstrates that the sociocultural theory has been practiced and applied in numerous disciplinary teaching and learning settings. Social-cultural dimensions of learning, teaching, and methodologies were acknowledged in the predominantly cognitive second language acquisition research examined in this section. According to the studies, the role of the learner's active, interactive contribution to a learning environment and channelization of the meaning-making process has been established. Using Sociocultural Theory to Learn or Teach Thinking Skills Some studies on thinking skills have been done with an emphasis on cognitive processing of information in Second Language Acquisition (SLA). Numerous social and cultural realities influence learning at various levels in ESL and EFL contexts. It is necessary to address these realities that emerge from classroom research, tasks, teaching-learning methodologies, and so forth. Some researchers looked into how teaching and learning various thinking skills are affected by social and cultural factors. These studies focus on cultural values, collaboration, interactions, and mediations in the domain of thinking skills, which were thought to be individualistic and involved only the psychological meaning-making process in isolation. A few studies use the sociocultural theory to explain how thinking skills are

developed. In addition, this study brought to light the difficulty of education reform, which necessitated behavioral changes like the acquisition of critical thinking skills, which were based on cultural heritage. In their study, they asserted that the B.Ed. program's exercise of thinking was influenced by social factors, cultural background, and beliefs. In a study for pre-service teacher programs, Meintjes & Grosser (2010) discovered a connection between teachers' creative thinking abilities and cultural factors. Preservice teachers from various cultural groups' creative thinking abilities were the focus of their study, which shed light on a previously unexplored area and raised awareness of the development of these potential teachers' creative thinking abilities. The participants' creative abilities were also operationalized by a variety of social and cultural factors, as this study demonstrated. Wass (2012) developed the critical thinking abilities of Zoology department students by utilizing the Vygotskian perspective of social-cultural theory in the other study in New Zealand. His research revealed that ZPD and social-cultural factors significantly influence the critical thinking abilities of target students. Neetu (2011) examined the learning, thinking style, and creativity of Indian secondary school students in relation to socio-psychological factors (such as personality and socioeconomic status). The review uncovered that there was a connection among them and social variables were important for students practicing their reasoning styles, abilities and capacities. Within the framework of sociocultural theory, the aforementioned studies revealed how thinking skills are taught and learned in a variety of educational settings, particularly in L2 classrooms. The present study has derived a theoretical framework primarily from Vygotsky's sociocultural theory and a revised version of Bloom's taxonomy (2001) by Anderson & Karthwohl. These studies also established the emergence and development of thinking skills in direct contact with social-cultural practices and contexts.

III. THE SOCIOCULTURAL THEORY OF VYGOTSKY

In the research on second language acquisition, numerous theories and approaches centered on learning and teaching language from psychological domains like behaviorism and cognitivism. The

sociocultural approach, on the other hand, introduced the concept of social reality, which was absent from previous approaches, and positioned social-cultural factors as social realities in research on second language learning. As sociocultural approach's view 'language learners not as processors of input or producers of output' (Gibbons, 2003, p. 248), but rather as interactive participants, the process of output and input in SLA research was questioned. Vygotsky's Sociocultural Theory of Cognitive Development made the most significant contribution to the sociocultural approach. He stated that the sociocultural process of mastering cultural tools and symbols on an individual level led to human cognition. Therefore, before reaching an individual's psychological level, higher-order functions like thinking, memory, language, and concept formation were socially intertwined at the neuropsychological level.

IV. THEORETICAL FRAMEWORK

The sociocultural theory of Vygotsky and a revised Bloom's taxonomy (2001) by Anderson and Krathwohl have been the primary sources of the theoretical framework used in this study. Self-efficacy, adaptability, social responsibility, and metacognition are expected of reflective trainers (Colton and Sparks-Langer, 1993). Educators lack the motivation to evaluate their own practices and seek deeper meaning in them if they lack a sense of self-efficacy. Flexibility is essential because contemplation necessitates considering the world from a variety of perspectives. Socially responsible educators engage in actions that are beneficial to their students, their schools, and their communities. Teachers who reflect are motivated to teach more effectively and have a sense that they can improve their teaching abilities. Being aware of one's own decisions and thoughts is called metacognition.

V. RESEARCH METHOD

The present investigation was carried out using a holistic single case design, which is a kind of qualitative case study. An individual, an organization, a group, an environment, or a problem are all examined in a holistic single case study. Throughout the case study, the interaction between various situations (environment, people, events, problems, processes, etc.) and factors. As a result, the

interpretive paradigm was used in this study to investigate a phenomenon in depth and provide a contextual explanation based on the questions 'how' and 'why.' Based on the experiences and perspectives of faculty members who work in higher education administration, the purpose of this research is to describe the reflective thinking skills and practices of academic administrators in higher education.

Study Group

During the 2021–2022 academic year, the research's study group consists of 50 graduate students who perform higher learning skills responsibilities in ten distinct faculties of Osmania University. One of the purposive sampling techniques, the criterion sampling technique, was used to select the study group for the study. According to Cresswell (2017), selecting participants for qualitative research aims to reach the most suitable individuals who will purposefully lead to the best understanding of the research problem addressed in the study. There were four considerations made when selecting the study group. These measures are: the members are effectively proceeding with their regulatory obligations in an advanced education establishment and working in resources addressing various disciplines (Wellbeing, Social and Science fields), also electing to take part in the exploration. When the metaphors for reflective-thinking academic administrators are looked at, it becomes clear that the profession and community sub-theme is related to military service, football coaching, and being a conductor; The nature subtheme is related to climbing mountains, ramps, and thorns; The pyramid and a place of worship are related to the space subtheme; The balloon and flag metaphors are connected to the object subtheme. It is possible to say that academic administrators believe that leadership is the foundation of their responsibilities when the metaphors for professions are examined. The military's rank structure and hierarchy are emphasized in their military analogy for reflective academic administrators. In their respective fields, a conductor and a football coach serve as both direct guides and administrators. The use of metaphors to explain nature metaphors conveys the impression that management is challenging. If the thorn is regarded as the problem of the rose, it is desirable to state that administration is a beautiful status, but administration also has problems, just like every good thing. The ramp is regarded as a road obstacle, and climbing a mountain is another

metaphor chosen to emphasize the difficulty of administrative work.

VI DISCUSSION

According to Baecher, Farnsworth, & Ediger (2013), explicit learning objectives aid teachers in "developing instructional strategies and practices that will lead their students to what they need them to learn. "As a result, the objectives of our writing lesson are clearly stated with verbs like identify, analyse, generate, evaluate, write, and revise. Identify comes from the lowest level of learning, whereas the other ones are clearly at higher and higher levels. This is consistent with the lesson's goal of developing students' HOTS through writing activities. In addition, students put themselves in the shoes of individuals, governments, or private organizations and discuss the topic in order to come up with plausible solutions to personal finance mismanagement. Most importantly, students look at the advantages and disadvantages of the solutions. The effectiveness of these activities in maximizing students' use of HOTS is crucial. According to Dewey (1933) and King, Rohani, and Goodson (1997), when people are confronted with unfamiliar problems, their sophisticated thinking is automatically activated. First, the problem stimulates their critical thinking. They can also sharpen their thinking by critically evaluating the other members of their group's ideas at the same time. This is consistent with the findings of Ganapathy and Kaur (2014) and Liu, Wu, and Shieh (2015), who found that engaging in debate or responding to other people encourages more in-depth thought. In addition, students discuss in groups while assuming the roles of educators, governments, and private organizations like banks or shops. This provides another benefit because assigning specific roles can not only reduce the amount of thinking required of each student in the group but also generate a variety of ideas that can be used later.

Activity 3 gradually transitions students from controlled production to freer production during the while-writing stage. At first, it is controlled because students are required to write sentences about the advantages and disadvantages of one of the solutions to finish a paragraph that is only half-finished. In terms of introducing them to a possible method for putting ideas together in a coherent paragraph, this control is helpful. However, despite the fact that we all rely on

models as writing guidance (Sowell, 2019), there is a concern that using models may result in copying issues. The opportunity for students to compare their written sentences to the ones given at a microlevel—in terms of language quality and within-sentence coherence—follows this. Comparing is, in fact, one of the HOTS in the revised Bloom taxonomy's analyses domain. The activity's second section is productive and provides students with scaffolding; To help them begin their paragraphs, they are given useful sentence stems. Most notably, they collaborate when they write. According to Daiute & Dalton (1993), collaborative writing has been shown to enhance peer interaction by allowing for the development of generative and reflective thinking, two essential HOTS, during which co-writers initiate ideas and challenge one another's ideas.

Students will gain a broader perspective and broaden their thinking by considering the contributions of their peers (Fung, 2010;2015 (Liu, Wu, and Shieh).

After the collaborative writing phase is over, students move on to Activity 4, where they write the essay on their own without much help. The instructions for what to write are the only source of support in this activity. This part hence permits understudies to show and use their capacity to blend all the educational data to which they have been presented from the previous exercises to make the total first draft of the exposition.

Research Analysis

Ellen's assessment of her profound reactions alongside other self-framework thinking permits her to connect with the metacognitive reasoning to distinguish objectives. The Advanced Group Theories course, in contrast to the theory course, frequently required students to reflect on themselves and reflect on who they were. The format of the reflections was designed to allow them to examine themselves in relation to specific experiences before establishing objectives and plans of action. For the most part, the reflections were connected with material that was being utilized in classes so they had a data to coordinate their reasoning. In the first reflection, students were asked to think about themselves as a member of a group, to consider both a positive and a negative group experience, to set personal and academic goals and specific steps they could take to achieve those goals. Self-system and metacognitive

thinking were primarily revealed through these reflections. Susan's writing demonstrates metacognitive thinking in her reflection:

I had the opportunity to collaborate with a particular classmate in almost every group I was in during the most recent semester. This person is known to put things off and has a strong personality. On the other hand, I'm only strong when I'm made to, at which point I'm almost uncompromising. I also have a personality type one; As a result, I prefer to start working on projects right away to reduce the sense of overwhelm. As one would surmise, as the semester went on bunches became distressing and troublesome. Our differences of personality hurt our course. We struggled with finishing tasks and I was not satisfied with our outcomes. I was able to deduce from that group that I need to work on my assertiveness and communication skills and that I need to present with less obsessive-compulsive traits. I have learned some weaknesses that need to be addressed through the group partnership. Students have numerous opportunities to refine their writings in terms of content and language use during the post-writing stage (Activity 5). The first opportunity comes from peer review, in which they share their papers with one another for correction and feedback using a specially designed checklist (see Appendix 2). From a socio-cultural perspective, the decision to prioritize peer feedback in this stage is motivated by its potential to further promote HOTS. According to Lantolf and Thorne (2007), HOTS do not only develop within the human mind; rather, their growth is largely influenced by how deeply they participate in contextual social phenomena, where they learn from others' perspectives and receive mentoring. Without a doubt, by getting criticism and remarks from their friends in this action, understudies can turn out to be better scholars and journalists, to some extent inside the bounds of the composing task. This learning progress is directly related to the idea of legitimate peripheral participation, which describes how a student engaged in metacognitive processing by monitoring a process. Toward the end she is thinking at the self-framework level when she is analyzing her adequacy in the particular circumstance. She is able to get a sense of her motivation through these examinations, which also help her activate the metacognitive processes that will help her identify goals and actions, both of which she also identifies in the reflection. My objectives in

relation to groups were to become more assertive when dealing with difficult people, to pay attention to how I present myself to others, and to avoid shutting down during stressful group conflicts. The changes that I observed were that, for the most part, I am now able to stick with the process even when the situation is intense as long as I remember to talk myself out of giving up and shutting down. I realize that this sounds childish, but as time goes on, I am seeing more and more that adults have conflicts that are child have tried to keep conflicts on a positive path, and if that fails, I try to keep my attitude optimistic. Here, Susan is functioning at the self-system level. I know this and how stressful the situation is. As observance into its effectiveness, specifically the mental strategies they employ to perform well in a given situation. It is also looking into their emotional responses.

VII CONCLUSION

We have discussed the results of a variety of courses, both undergraduate and graduate, that we have taken. The prompts we involved produced results at every one of the degrees of reasoning in Marzano's Scientific categorization. In both the Advanced Group Theories reflections and the College Algebra course, self-system thinking was evident. The prompts were specifically designed to elicit that kind of thinking in those instances. Occupational Therapy Theories also featured self-system thinking, despite the fact that the prompts were not designed with that in mind. The prompts in Schools and Society prompted reflection and emotional responses when analyzing the readings. The Occupational Therapy Theories reflections revealed the entire cognitive system. Through various writing assignments, we aimed to assist our students in becoming reflective learners. Each course adopted a somewhat unique strategy to a similar objective. The various approaches were based on the age of the students and the content of the courses. Using Marzano's levels of knowledge processing, we were able to create writings that would help our students begin the process of reflection. We were interested in two of the three knowledge domains: information and mental processes, which require multiple levels of processing (Marzano, 2001, p. 60): metacognition, self-system thinking, comprehension, retrieval, and application of knowledge We were able to direct our students to work on specific tasks, such as correcting

errors, setting goals, and reconsidering previous knowledge, by focusing on specific processing levels. As the courses progressed, we began to observe higher-level functioning as well as evidence of various levels of thinking in the students' reflections. To better comprehend any changes that we are observing, additional research is required.

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