**Conceptions and practice of Critical Thinking Skills: University students at focus**

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**Abstract**

*The main purpose of this research was to explore the conceptions and perceived practices of critical thinking skills among Bahir Dar university students. The study used qualitative design with phenomenological approach that is preferable for investigating lived experiences of students and teachers. The study interviewed three 3rd year students and two instructors in College of Education and Behavioral Sciences. The research applied purposive sampling to access students and available sampling strategy to sample teachers. As to the instruments, open-ended interview that was validated by a qualitative research expert. The data was analyzed thematically after prescribing the interview data. The findings of the study indicated that the participants have serious limitations in conceptualizing critical thinking skills and identifying its components. In addition, students noted that they do not perceive themselves as they are using critical thinking skills for their learning attributing to different factors blaming the teaching and learning environment which encourages rote memory Similarly, teachers witnessed that the current teaching and learning processes lack pertinent qualities that are crucial to develop critical thinking skills.*

Key words: Conceptions of critical thinking, practices of critical thinking skill

* 1. **Background of the Study**

Critical thinking skills are crucial instruments in learning. I believe that critical thinking skills are basic tools for one’s own life and academic learning. Higher education institutions are also expected to produce those who have critical thinking skills and dispositions. Having this in mind, educators examine how learners conceptualize critical thinking skills, their status and to what extent students use their thinking skills for learning purpose.

Different scholars define critical thinking in different ways. Rudd and Baker (n.d.) defined as critical thinking is the use of cognitive skills or strategies that increase the probability of achieving a desirable outcome. It is the formation of logical inferences, developing careful and logical reasoning, deciding what actions to take or what to believe through reasonable reflective thinking, and purposeful determination of whether to accept, reject, or suspend judgments. Critical thinking skills are multidimensional construct (facione, 1990).

Higher education institutions are supposed to produce graduates who think critically and solve problems effectively (Moon, 2008). The question is to what extent higher educations are contributing as they are expected. For instance, many people complain that the quality of education is deteriorating in Ethiopia at all levels that has its own negative impact on the development and use of critical thinking skills.

The researcher believes that examining students’ conceptions and practice of critical thinking skills is crucial to strengthen the existing potentials and tackle challenges, if any. Of course, local research works are scarce to understand how much students are in the way to develop critical thinking skills and dispositions in the Ethiopian context.

Thus, the purpose of this research is to understand to what extent university students conceive and use critical thinking for their academic purpose. Further, the research tries to investigate students’ perception of how much the teaching approach is helpful to develop critical thinking skills.

* 1. **The Problem of the Research**

School learning should initiate critical thinking to produce effective and efficient citizens. The development of critical thinking skills is a continuous process. Of course, there is two ways of approaches to help learners develop critical thinking skills and dispositions: implicit and explicit approaches (Moon, 2008). The implicit approach favors the indirect approach that is supposed to develop critical thinking skills of students through critical management of academic courses. The other approach is explicit approach that promotes that critical thinking skills should be taught designing its own independent curriculum. Ethiopia has no curriculum that teaches critical thinking so far explicitly. Thus, the motivation and commitment of teachers matters a lot to enhance enhancing critical thinking skills among students.

The other factor that facilitates or hinders students’ critical thinking skill development is students’ learning culture and motivation (Moon, 2008). The researcher sees students learning motivation and commitment in two ways. The first one is that most students like to have “easy” life so that they do not like to consider their lessons critically. They do not want search information from different sources. On the other hand, I believe that we teachers usually harvest what we sow in the garden. When we prepare clear requirements and when we become committed to course objectives with continuous constructive feedbacks to students, it is possible to accustom learners to think critically because human mind is dynamic. The teaching materials teachers provide and the type of assessment strategies instructors’ use have great impact on the development of critical thinking skills. Therefore, this research explores how university students conceptualize and use critical thinking skills for their learning. The study also tries to include how much teachers believe that the teaching and learning process is able to help students develop critical thinking skills. Therefore, the study formulated the following research questions:

* How do third year psychology students define critical thinking skills?
* How do third year psychology students evaluate the effectiveness of the teaching and learning approach to make students critical thinkers?
* How much do third year psychology students use critical thinking skills for their learning?
* How do teachers explain the roles of the current teaching and learning processes to help university students develop critical thinking skills?
  1. **Objectives of the Study**

The general objective of this study is to explore the conceptions and use of critical thinking skills among university students. More specifically, the objectives of the study are to:

* + State how third year psychology students conceptualize critical thinking skills.
  + Investigate how third year psychology students evaluate the effectiveness of the teaching and learning processes to make students critical thinkers.
  + Examine third year psychology students’ perceptions in using critical thinking skills for their learning.
  + Explain teachers’ perceptions about the roles of the current teaching and learning processes to help university students develop critical thinking skills.
  1. **The Significance of the Research**

This research would benefit university teachers, students, educators and government officials. University instructors could benefit from the study since the study provides some feedbacks from students side how the teaching and learning processes are facilitating the development of critical thinking skills among undergraduate students. Students would also benefit when their strengths and weaknesses as well as challenges are examined, and possible solutions are forwarded. The outcomes of the study would be helpful for educators to understand what is going on in university education system in relation to critical thinking. Even the study could serve as a baseline study for other researchers to carry out nationwide study at all educational levels.

**2. Review of Related Literature**

**2. 1 Critical Thinking**

The concept ‘critical thinking’ is an elusive term to define (Reid, 2000).Though some definitions use different terms, most of the definitions are conceptually the same. Regarding this issue, Reid(2000) stated that "many of the definitions[of critical thinking] overlap, and some have a narrow focus and others are broad in view" (p. 11). This implies that the definitions given to critical thinking vary by focus and score. This section clarifies discussing some definitions.

Moon (2008) stated that critical thinking is the process of analyzing a situation and making decisions accordingly. This means individuals' thinking is governed by situations. Lau (2011) has also defined critical thinking as it is the ability to make logical connections between ideas as well as making logical arguments. This implies that critical thinking is the skill that helps to understand the relationship of concepts instead of grasping individual ideas or events.

On the other hand, Cottrell (2005) stated that critical thinking is "a complex process of deliberation which involves a wide range of skills and attitudes" (P. 14). The skills include understanding others point of arguments, positions and conclusions as well as presenting one's own view with clear structure and evidence. Further, Birgili (2015) has generally defined critical thinking as,

[It] is a kind of ability to look at events, conditions or thoughts with a careful eye and making comments, decisions, studying on the reliability and validity of the knowledge according to standards of logic and the mind (p. 74).

According to Birgili, critical thinking refers to the application of some standards and logic in analyzing materials, events and situations to reach at reliable and valid conclusions. More comprehensively, Facione (1990) defined critical thinking as,

[It is] purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based (p.2).

From this definition, we understand that critical thinking involves a wide range of skills such analysis, interpretations and evaluation that are higher order of learning. The analysis and interpretations are made depending on the contexts that are the bases for our arguments or judgments. Of course, the quality of the reasoning and the argument should fit to the level or the context (Moon, 2008).

To sum up, critical thinking is a complex concept that has no one agreed upon definition. The definitions given by different scholars convey that it involves a variety of cognitive skills that range from simple comprehension skills level to higher order abilities such as synthesis and evaluation (Moon, 2008).

**2.2Importance of Critical Thinking**

Critical thinking is obviously important ability to students to succeed in their academic and day- to-day lives (Cottrell, 2005). It is also the process of learning through the application of analysis, understanding, and synthesis and a means of generating new knowledge (Moon, 2008).

It is an essential tool of inquiry so that critical thinking is mandatory skill in education and civic life (Facione, 1990). Critical thinking skills help students understand learning materials beyond their surface meanings. Strengthening this idea, Cottrell (2005) described that "students are expected to develop critical thinking skills so that they can dig deeper below the surface of the subjects they are studying " (p.8). If the learners are particularly attending lessons in English as second language, they should be equipped with critical thinking skills (Cottrell, 2005).

The relationship between critical thinking and achievement is obvious but the magnitude of the relationship is argumentative. For example, Karagöl and Bekmezci (2015) have conducted on 377 teacher candidates at Ege and Celal Bayar Universities of Turkey.The result showed positive but weak relationship between critical thinking dispositions and academic achievements.

**2.3Teaching Critical Thinking Skills**

The primary goal of education is developing the ability to think rationally and critically (Robert, 1988).This, in turn, enhances quality of education. Moalosiet.al (2016) stated that "critical thinking is recognized as an influential attribute to achieve quality learning and teaching in higher education institutions"(p.1). Thus, when learners develop critical thinking skills, they can be motivated to exert their own effort to maximum and work independently (Tazhikeyevaet.al., 2016). To identify what critical thinking skills refer to, Facione (1990) used experts’ panel with 46 experienced professionals in the area. The panelists finally reached at consensus that critical thinking includes six cognitive skills that are interpretation, analysis, evaluation, inference, explanation and self-regulation but the application needs subject specific knowledge. Subject-specific knowledge means, according to Facione, basic subject-based principles and rules in the course that is at hand to decode.

Furthermore, the goals of teaching critical thinking help students be fair-minded, objective, and committed to clarity and accuracy (Robert, 1988). To develop such abilities or skills, there must be appropriate learning environments in schools and colleges. For instance, Birgili (2015) has stated problem based learning environments are vital for the development of critical thinking skills.

Furthermore, Cottrell (2005) has also stated that college students should be given opportunities that help them develop critical thinking skills to be effective in their education "through engaging in critical debate in seminars, presentations or writing produced for assessment or publication" (p. 8). Seminars and presentations are learning opportunities in which learners can reflect their views or understanding of something and see how others view it.

Tazhikeyeva et al. (2016) noted that it is teachers responsibility to teach students to be independent and critical learners by charging the habit of setting goals; identifying and developing strategies to achieve such goals; developing study plans; reflecting on learning and addressing techniques of tackling learning difficulties. This responsibility needs organizing different learning situations like working with peers cooperatively (Tazhikeyeva, 2016).

As long as teachers or educators are motivated to produce critical citizens, they can even develop different methods of teaching. For instance, Patil (2008) has made a research how to apply heuristic method to teach science. Heuristic teaching strategy is a method that intends to guide learners in scientific enquiry and develop skills of observation, analysis and interpretation with scientific temper of mind. Patil finally realized as it is an effective method heuristic method of teaching effective in science teaching.

However, the readiness, attitude, and commitment of students are also essential elements to develop critical thinking skills. Students should have interest and intellectual curiosity in learning (Moon, 2008). Meyers (1986 as cited in Moon, 2008) also argued on the importance of adequate time to deal with a learning material. Thus, when learning materials or projects are designed, they should enhance critical thinking and adequate should be given to process the information.

**2.4 Teaching Critical Thinking Skills**

Educators do not have the same views on the importance of teaching critical thinking skills (Fisher, 2001). While some teachers believe that it is possible to teach critical thinking skills directly or explicitly, others prefer indirect approaches through dealing with course contents (Fisher, 2001). However, Facione (1990) has explained the importance of explicit approaches stating critical thinking skills as:

Skills, particularly critical thinking cognitive skills, can be taught in a variety of ways, such as by making the procedures explicit, describing how they are to be applied and executed, explaining and modeling their correct use, and justifying their application. Teaching cognitive skills also involves exposing learners to situations where there are good reasons to exercise the desired procedures, judging their performance, and providing the learners with constructive feedback regarding both their proficiency and ways to improve it (p.15).

Facione’s we can understand the importance of explicit approach in teaching critical thinking skills by creating appropriate situations that allow to exercise a variety of cognitive skills. Ferguson and Spiller (2011) also stated that teachers should directly influence their students by enabling them engage themselves in critical thinking in dealing with their coursework.

**5. Barriers to use Critical Thinking Skills for Learning**

There are different factors that affect the applications of critical thinking skills for learning. For instance, emotions have both inhibiting effects if they are negative ones or facilitating effect on cognitive processes if the emotions are positive ones (Moon, 2008). Aslan and Demirtas (2016) also found out that critical thinking and positive emotional conditions have significant positive correlations. Our emotion can influence the manner we are dealing, say our work or the process of decoding learning materials. The other factor Moon identified is language-related factors. Language ability is essential to analyze a learning material critically as well as transmitting messages to others. Thus, the management of students’ emotion both in and out of the classroom is very important element in teaching.

Self-perception is another factor that affects the development and use of critical thinking skills. Many people think that they are rational enough so that they do not exert their efforts to develop their skills further (Cottrell, 2005). The other barrier in developing and using critical thinking skills is the degree of involvement in academic activities. For example, Terenzini (1993) noted that "student's level of academic involvement both in and outside the classroom may have important effects on various forms of cognitive development, including critical thinking ability" (p.5).This implies that those who have better engagement in academic learning are more likely to use critical thinking skills.

To summarize, the development of critical thinking skills can be facilitated or hindered by different factors. Some them are internal and other are external. The motivations, emotions, language abilities and self-beliefs are internal attributes that affect the development and practice of critical thinking skills. On the other hand, the opportunity to engage in and outside the classroom can be external factors that are related to the practice of critical thinking skills. The problem-based learning is another external factor that can facilitate approach (Birgili, **2015**).

**3. Methods**

The study has employed qualitative research design. Phenomenological theory was also employed to frame the research process it is appropriate theoretical framework to examine lived experiences of (Creswell, 2007). The participants of the research were third year psychology students and their teachers. The study involved 3 students (2 males and 1 female) and 2 teachers (all males).

The sampling technique of the research was purposive. Firstly, third year psychology students were selected having the hypothesis that they could conceptualize critical thinking skills and have more lived experiences in applying them for their learning. The participants were selected by considering their cumulative grade point average (CGPA) and gender. Two students had below 3.00 CGPA and one of the participants was a girl. Convenient sampling was also used to access teachers.

This research used unstructured interview to collect data in-depth. Unstructured interview was preferred since it provides opportunities to entertain related ideas to the topics that were essential to the study. It also gives opportunity to explain ideas to interviewees when necessary. A sound recorder was also used with the consent of the interviewees. The interview guide had 10 items for both teachers and students. Each interview took 40 minutes for students and teachers, totally the interview took 3 and half hours.

**4. Data analysis, Findings and Discussions**

The objectives of this research study were to explore third year psychology students’ understanding of critical thinking and examine to their perceived use of critical thinking skills for academic purpose. The other objective was to state students and teachers perceptions on the roles of the teaching and learning processes to help learners develop critical thinking skills.

Open-ended interview was used to collect data from students and teachers. The interview format contained eleven open-ended items. The guide was first prepared in English. Then, it was translated into Amharic. The items were validated by the course instructor. After working through the comments, the Amahric version was used to collect data. The items were tried out with an interviewee. Two items were modified to make them more clear. No items were discarded. Nonetheless, the researcher was free to give additional explanations when interviewees got confused. As a result, adequate data was collected and analyzed as follows.

The data was prescribed as it was said by the interviewees and analyzed thematically. The results are presented using Pseudo names for ethical purpose. The first and the second student interviewees are named as kedamawi and Dagne respectively. The third interview was named as Workie to indicate her femininity. Like students, Psuedo names are also used for the two teachers. Findings are summarized as follows.

* **Conceptions of Critical thinking skills:** Most students define critical thinking skills as the processes of deep learning or an attempt to investigate something in deep or an act of learning something in detail. Students’ definitions lack basic elements of critical thinking dimensions.
* **Students Perception about Teachers’ effort to promote critical thinking**

The interviewees anomalously agree that most teachers are not committed to teach their courses properly. They further complain that many teachers come with their slides and read it out. When they finish, they leaves classes even without asking questions to assess their understandings. Teachers also criticize that many students lack interest to learn. Here it is important the roles of teachers’ expectation and their classroom behaviors.

* **Teacher-student relations**: students believe that presenting some questions to teachers is scary because they think that some teachers perceive questions negatively. Teachers also feel that the relation between students and teachers is not positive. It seems that there is a lot of misunderstanding. Teachers suspect that students’ evaluation is not fair if teachers positively challenge them positively. Therefore, the situations looks like “who cares” type of relations.
* **Teaching culture and critical thinking skills:** Both teachers and students agree that the teaching and learning culture is a big challenge in learning. Teachers believe that many of the students are surface learners. Students themselves reflected that they do not like to “suffer” if giving du attention is suffering. Both teachers and students agree that most learners do not like to have tasks that demand students’ analysis, synthesis and judgment. Students believe that "original works” are more likely to result in poor marks so that students prefer to copy from previous works which are well edited and structured.
* **Students’ beliefs in practicing critical thinking skills:** All three student interviewees do

not believe that they are critical thinkers. Teachers also believe that most students lack critical thinking skills. Student interviewees believe that majority of the students, including themselves, focus rote memory. As the result, they suspect that many students may not remember even the courses they took leave alone the course contents. Both teachers and students attribute to the teaching and learning processes. Students believe that most teachers lack commitment and teaching motivation. Teacher interviewees attribute that teachers appear careless since they are not free to perform based on the course guide and instructional objectives. If they do, many teachers feel that students may revenge at the end of the semester by spoiling their teaching performance appraisal evaluation. As a result, many teachers use assessment strategies that are below the course requirements and do not want to challenge students in the classroom.

* **Bloom’s taxonomy and students’ evaluation of their status**

Both teachers and students agree that students’ level of knowledge is found at lower level in Bloom’s taxonomy. Both teachers and students relate to the teaching and learning processes, students’ learning motivation and teachers courage to push students in the ladder. The quality of individual and group works, quizzes and exams. Teachers believe that if some questions which require students “analyze”, “compare and contrast” and interpretations, students are ready to complain presenting false evidence to officials.

**Challenges to develop critical thinking skills**

On students’ side

* lack of practice,
* placement in departments they do not like,
* lack of adequate academic competence,
* lack of learning motivation,
* Academic dishonesty. e.g. copying from others.

On teachers’ side

* Considering teaching at college/university as spring board.
* poor social status of the profession
* Hopelessness: teachers reflect that they are confused. on one hand, students lack the ability to comply the expectations courses. On the other hand, they do not feel as teaching a good job to change one’s life.
* Lack of motivation to teaching with commitment.
* Lack of constructive feedbacks following assessments. Teachers complain that students are mark/grade oriented, not knowledge oriented.
* Lack of positive relations between teachers and students.

**4.2 Findings and Discussions**

**4.3 Discussion**

Critical thinking is crucial tool to achieve quality learning and teaching in higher institutions (Yazar Soyadı, 2015). It is a skill that most scholars would readily agree is important for students to development ((Rudd & Baker, 1995). Critical thinking refers to the process of analyzing a situation and making decisions accordingly (Moon, 2008). It also refers to going forth and back to relate the previous learning experience to the present one (Yazar Soyadı, 2015). Critical thinking further refers to evidence based thinking, justifying why something is happening or may happen and goal setting (Kopzhassarova, Akbayeva, & Eskazinova, 2016). Further, Cottrell (2005) stated that critical thinking is "a complex process of deliberation which involves a wide range of skills and attitudes" (P. 14). The skills include understanding others point of arguments, positions and conclusions as well as presenting one's own view with clear structure and evidence.

However, respondents of the current study conceptualized critical thinking as the process of thinking deeply and an act of trying to see things in detail in which only limited aspects of critical thinking skills are recognized by students.

Both teachers and students agree that there is no a teaching and learning environment that promote critical thinking skills of students. As result, the respondents (both teachers and students) believe that most students are engaged at knowledge and comprehension level in Bloom’s taxonomy that is an indicator of lacking behind in developing critical thinking skills. It is true that when the teaching and learning processes where problem solving approaches and academic engagements are low, students critical thinking development is found low (Dannawi, 2013; Yazar Soyadı, 2015). Jones (2006) also stated that the school culture of teaching and assessment have more impact on student development of critical thinking. However, the current study revealed that the teaching and assessment approaches lack basic elements to enhance the development of critical thinking among university students.

The interviewees do not believe that they do not have adequate critical thinking skills. Teachers also believe that most students lack critical thinking skills. Both students and teachers relate the problem with teaching approaches, students’ motivation for learning and poor assessment strategies. The existing literature also indicate the nature of assessments feedback affect the development of critical thinking skills (Cakir, 2008; Sarigoz, 2012; Sbrocco, 2009).

Furthermore, the current research found out that students are not applying critical thinking skills to the required level for their learning. Both teachers and students attribute to different factors. One of the factors they mention is lack of motivation for learning. Moeti, Mgawi, Tefo and Moalosi (2017) revealed that lack of motivation is one of the challenge to enhance critical thinking among students. The other problem for lack of motivation is related to placement. Students are not placed to different departments according to their interest. Walker and Finney (2006) found out that placing students in departments without their motivation and long lasting goal affects students’ learning motivation that in turn affects their engagement and the tendency to be critical with their learning, which consequently affect critical thinking skill development.

Therefore, to make students critical and creative thinkers, the learning environment should engage students and positively challenge students to possess divergent thinking (Yazar Soyadı, 2015). Other researchers also suggest that teachers should design create environments in which students can be motivated to learning independently (Kopzhassarova et al., 2016) that is basic for critical thinking. In addition, the teaching method teachers apply should be varied and expose positive challenges to learners that enable students explore their capacities and think critically (Yazar Soyadı, 2015).

**Conclusions**

Based on the qualitative data analyzed, the following conclusions were drawn:

Students interviewed show low level of understanding about critical thinking skills. Their conceptions of critical thinking are mainly limited to only some aspect of critical thinking skills. Their definitions they provided about the whatness of critical thinking skills lack make of analysis, inferences and syntheses by one’s own while decoding learning materials.

The teaching and learning culture that instructors and students are experiencing is not supportive to make learners critical thinkers. The Provision handouts and excessive use of non-interactive lecture where students do not have adequate time to reflect their ideas are affecting students’ critical thinking skills negatively.

Students lack confidence on the extent that they are critical learners since they do not have the habit of making arguments and judgments by themselves since the school environment is not shaping them to this direction.

**Recommendations**

Based on the findings and conclusions made, the following recommendations are forwarded.

* Educational systems are still the only options to produce citizens who are critical thinkers and rational decision makers. Therefore, the teaching approaches, say classroom interactions and assessment mechanisms, should promote critical thinking skills.
* The explicit approach to critical thinking skills should be encouraged. Educational experts should develop some basic courses that promote critical thinking skills of students at all levels of education.
* Teachers should not give up for students’ “easy-going” type of motivation at the expense of course objectives and quality education.
* Teachers should revise their use of projectors to present shows in the classrooms. Slide presentations should be used to make the teaching and learning process more tangible using three dimensions diagrams, videos and different diagrams when necessary.

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**Declarations**

**Interest conflict**

I declare that this research paper has no interest conflict, and if any, I am responsible.

**Funding Statement**

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**Consent**

The interviewees (both teachers and students) are given information about the purpose of the study and their right to withdraw if the questions raised created any negative feeling on their.

**Ethical consideration**

All the information given by participants would be kept secret. The researcher approved to the interviewees that no authority has access to their personal perspectives and practiced accordingly.

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