Transferable critical thinking skills of culinary and fashion students in educational practical activities at vocational schools

Kokom Komariah, Fitri Rahmawati, Kapti Asiatun, Asri Andarini Nurlita, Maize Lina Minarni, and Perawati Simaremare
Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
Email: kokom@uny.ac.id

Abstract: This study aimed to examine the critical thinking abilities of students engaged in educational practice within vocational high schools, elucidating the challenges they encountered and proposing requisite strategies for surmounting them. Employing a quantitative descriptive approach, this research utilized surveys and focus group discussions (FGDs) as data collection instruments, validated through content validity measures. The study employed students from the Department of Food and Clothing Education at the Faculty of Engineering, Universitas Negeri Yogyakarta, participating in Educational Practices within the Tourism Group Vocational High School, alongside tutor teachers guiding them. Analysis revealed that students exhibited commendable levels of critical thinking, evidenced by their adeptness in identifying information within the school environment, searching for information to analyze prevailing issues, and discerning various problems. Notably, the predominant obstacle impeding critical thinking proficiency was Sociocentrism, with a notable majority (61.64%) identifying unwarranted assumptions stemming from mass media sources (41.10%), and relativism due to deficient literacy skills, leading to closed-mindedness (31.51%).

Keywords: *educational practical activity, transferable critical thinking, vocational student*

INTRODUCTION

Educational practice constitutes a compulsory component within the curriculum of undergraduate education programs, serving as a platform for students to acquire and apply teaching skills across various educational settings encompassing formal, non-formal, and informal units. This pedagogical endeavor stands as a pivotal mechanism aimed at augmenting the proficiencies of prospective educators, nurturing their ability to translate acquired knowledge into practical application within real-world contexts effectively. As articulated by Hapsari and Widhianningrum (2014), the overarching objective of educational practice is to cultivate well-rounded individuals poised to enter the educational sphere equipped with a comprehensive repertoire of knowledge, skills, attitudes, and behavioral traits requisite for their profession. Central to this objective is the cultivation of

competencies enabling educators to adeptly navigate the intricacies of educational delivery, both within conventional academic institutions and in extramural educational settings.

The primary objective of implementing educational practice is to acquire competencies pertinent to the multifaceted responsibilities entailed in teaching, instructing, and guiding learners. These competencies are imperative for students aspiring to assume the roles and responsibilities inherent in the teaching profession. Government Regulation Number 19 of 2005 delineates four essential competencies requisite for teachers, namely pedagogical competence, personality competence, professional competence, and social competence. Pedagogical competence encompasses the aptitude to effectively orchestrate student learning processes, entailing comprehension of student dynamics, formulation and execution of instructional strategies, assessment of learning outcomes, and facilitation of student development to actualize their diverse potentials. Personality competence pertains to the cultivation of a steadfast, well-rounded persona characterized by maturity, wisdom, authority, moral rectitude, and exemplarity, thus serving as a paragon for student emulation. Professional competence denotes proficiency in comprehensively and deeply mastering educational content, thereby enabling educators to adeptly guide students toward achieving the competency benchmarks outlined in the National Education Standards. Social competence, on the other hand, underscores educators' capacity to engage in effective communication and interaction within the broader societal milieu, encompassing students, fellow educators, educational support staff, parents/guardians, and the wider community.

The proficiency exhibited by students in their instructional roles during educational practices is contingent upon their acquisition of transferable skills cultivated throughout lecture activities, which, in turn, are shaped by factors such as theoretical acumen and the outcomes of diverse training endeavors undertaken within academic settings. These transferable skills constitute essential assets enabling students to effectively fulfill their professional obligations upon entering the workforce. Nonetheless, a prevailing trend indicates a deficiency in the comprehensive development of these transferable skills within higher education domains, notwithstanding the potential for enhancement through diverse channels, including the augmentation of pedagogical approaches across a spectrum of academic disciplines aimed at fostering the refinement of transferable skills.

Critical thinking ability stands out as a transferable skill essential for educators. Defined as a cognitive process facilitating problem formulation, problem-solving, decision-making, and critical thinking (Nuraini, 2017), it equips individuals with the capacity to discern, evaluate, and utilize information judiciously to foster meaningful learning experiences. Possessing this acumen empowers teachers to adeptly navigate information, discern its relevance, interpret its implications, and apply it judiciously within educational contexts. The cultivation of critical thinking proficiency not only enhances individual pedagogical efficacy but also contributes to the creation of a more efficacious learning environment conducive to meeting the multifaceted demands characteristic of the 21st century.

Transferable skills constitute pivotal components within educational policy frameworks, serving as fundamental competencies essential for the application of foundational skills and problem-solving abilities, as posited by Jin (2014). An individual is deemed to possess transferable skills when proficient in communication, problem-solving,

collaboration, self-management, and adept at technological mastery within their professional domain.

Ana (2023) delineates an extensive array of transferable skills, encompassing a spectrum of attributes essential for professional efficacy. These skills include but are not limited to initiative, integrity, critical thinking, a disposition towards continuous learning, unwavering commitment, heightened motivation, enthusiasm, reliability, adept communication, creativity, analytical prowess, stress management capabilities, self-regulation, problem-solving acumen, summarization proficiency, collaborative aptitude, adaptability, autonomy, attentive listening, resilience, logical argumentation, and effective time management. Moreover, the problem-solving endeavor is underpinned by applying critical thinking methodologies.

Critical thinking stands out as a paramount cognitive ability requisite for cultivating the complex skill set demanded by the 21st century. Integral to problem-solving in challenging scenarios, critical thinking skills are indispensable for individuals seeking to navigate life's complexities adeptly, as emphasized by Rahardhian (2022). In today's global society, characterized by the exponential proliferation of information and communication technologies, the significance of critical thinking skills is magnified. The burgeoning availability of information necessitates that educators possess robust critical thinking capabilities to effectively discern, assess, and juxtapose disparate data sets, thereby facilitating informed decision-making and cogent argumentation.

Critical thinking ability, as defined by Komariah, Hamidah, Marifa, and Sugiyono (2023), embodies the capacity to engage in sophisticated problem-solving processes systematically. Beyond this, critical thinking encompasses the faculties of reasoning, decision-making, and problem-solving, predicated upon the assimilation and analysis of pertinent information. This cognitive skillset enables educators to navigate challenges adeptly and equip students with the requisite tools for problem resolution. Moreover, critical thinking entails the aptitude to construct cogent arguments, synthesize information, evaluate assumptions, and engage in reflective discourse, as underscored by Hamidah (2017). Such proficiencies assume paramount importance in guiding students through multifarious problem-solving endeavors.

The capacity for critical thinking not only fosters innovation but also drives the exploration of diverse avenues for process enhancement, thereby fostering engaging and impactful learning experiences for students. Consequently, the pivotal role of teachers emerges as the linchpin in enhancing student outcomes, necessitating concerted efforts to cultivate a cadre of competent and competitive graduates underpinned by professional educators. As articulated by Rahman (2021), the responsibilities incumbent upon teachers as professional educators encompass strategic planning and execution of learning activities, conducting comprehensive assessments, providing guidance and mentorship to students, and engaging in scholarly pursuits and community outreach endeavors, particularly within higher education.

Elevating transferable skills, particularly critical thinking proficiencies, warrants focused attention to realize the goals outlined in educational practice implementations. Central to the enhancement of student transferable skills is the foundational principle that

their cultivation is contingent upon the enhancement of learning quality throughout the academic tenure. The present research endeavors to delineate the characterization of critical thinking abilities within students aspiring to become educators, elucidate the challenges impeding mastery of critical thinking, and proffer viable solutions to fortify these cognitive capacities.

METHOD

This research adopts a survey methodology with a descriptive quantitative approach for data processing. The study focuses on examining the transferable skills, specifically critical thinking abilities, among students engaged in educational practice activities. The research cohort comprises students enrolled in the Department of Food and Clothing Education within the Faculty of Engineering at Universitas Negeri Yogyakarta (UNY), undertaking educational practice at vocational schools alongside accompanying tutor teachers.

Data collection regarding students' transferable skills and barriers to critical thinking is facilitated by administering a questionnaire via Google Forms. Furthermore, strategies for addressing identified obstacles are elucidated via Focus Group Discussions conducted with tutor teachers and student supervisors at each respective school. The analysis of data concerning the possession of transferable skills and critical thinking abilities is executed quantitatively and descriptively, discerning strengths and weaknesses across various categories of educational practice activities. Proficiency in transferable skills and critical thinking abilities is ascertained based on students' responses, with higher ratings indicative of more substantial mastery, categorized according to predetermined criteria outlined in Table 1.

Table 1
Mastery of critical thinking category

Formula	Category
$X < M - 1SD$	Poor
$M - 15SD \leq X < M + 1SD$	Good
$M + 1SD \leq X$	Very Good

The instrument used for measurement in this research is a Likert scale (Table 2), a commonly used tool for gauging attitudes and perceptions. This scale comprises five levels of preference, each assigned a score ranging from 1 to 5. Indicator in Table 3 serve as essential metrics for assessing and quantifying the constructs under investigation.

Table 2
Instrument measuring scale

Answer Choices	Score
Strongly agree	5
Agree	4
Neither agree or disagree	3
Disagree	2
Strongly disagree	1

Table 3

Research instrument grid

No	Indicator of Critical Thinking Aspects
1.	Able to search for information in problem analysis
2.	Able to identify various information in the work environment
3.	Able to search for data needed in problem analysis
4.	Able to actively participate in the decision-making process in the workplace
5.	Able to identify various problems in the work environment

Table 4

Instrument grid of barriers to critical thinking aspects

Items	Barriers to Critical Thinking Aspects
Egocentrism	Usually, my opinion is the best among my friends
Sociocentrisme	My group is the best
Unwarranted Assumption	Believing something viral in the mass media.
Wishful Thinking	Wishful thinking about something gets me
Relativism	I don't read enough, so my mind is less open

FINDINGS AND DISCUSSION

This study's findings and subsequent discussion center on the acquisition of transferable skills and critical thinking abilities among culinary and fashion students engaged in practical educational activities within vocational schools. Moreover, the discourse extends to exploring the obstacles encountered by these students in developing transferable skills and critical thinking caspabilities within vocational education settings, alongside proposing strategies aimed at mitigating these challenges.

Table 5

Results of the ownership of critical thinking aspects

No	Items	Score	Percentage (%)	Mean	Rank
1.	Able to search for information to analyze existing problems.	295	16.9	40.4	II
2.	Able to identify information in the school environment	300	17.1	4.11	I
3.	Able to search for data to analyze problems	288	16.5	3.95	IV
4.	Can participate in the decision-making process at school.	278	15.9	3.81	V
5.	Ready to actively participate in the decision-making process at work	295	16.9	4.04	II
6.	Able to identify various problems in the school environment	294	16.8	4.03	III
	Total	1750	100	23.97	

The ownership of transferable skills and critical thinking abilities can be seen in the Table 5. According to Table 5, the analysis reveals the top three positions for ownership of critical thinking aspects, with respondents demonstrating proficiency in various areas.

Specifically, the respondents excel in their ability to identify information within the school environment, scoring 4.11. Moreover, they are ready to engage in decision-making processes within their workplaces actively, garnering a score of 4.04. Additionally, the respondents display adeptness in identifying diverse problems within the school environment, achieving a score of 4.03.

Table 6
Criteria for transferable skills in the critical thinking aspect

Formula	n	Percentage (%)	Category
X < M - 1SD	6	8	Poor
M - 15SD ≤X < M + 1SD	60	82	Good
M + 1SD ≤ X	7	10	Very Good
Total	73	100	

Table 6 illustrates the distribution of critical thinking skills among respondents within the transferable skills framework. The data reveals that 82 percent of participants exhibit good critical thinking abilities, 10 percent demonstrate excellent skills, and 8 percent display poor skills. Consequently, it is evident that the majority of students' critical thinking capabilities in educational practice align with the "good" category. The research results related to barriers to transferable skills to critical thinking abilities can be seen in Table 7 and Figure 1.

Table 7
Strategies used in developing transferable skills

Aspect	Strategies
Learning Aspects	Equip students with maximum competence, both pedagogical, professional, personal, and social competence.
	The subject matter is adjusted to developments related to existing policies and demands from users.
	Socialization at school to students regarding the curriculum implemented at school, including what subjects or subjects will be taught in class
Guidance Aspects	Encourage students to continue developing learning tools that suit the demands of the digital era.
	Coordinate at the beginning of the meeting to equalize perceptions between supervising teachers and students regarding the curriculum implemented at school, such as materials, teaching tools, learning models, and learning media.
	High commitment from teachers and supervisors
Supporting Aspects	Development of micro-teaching facilities
	Maximizing services to students who will carry out educational practices.

Figure 1 presents the findings regarding students' barriers to critical thinking skills during educational practice. Predominantly, sociocentrism emerges as the most prevalent barrier, affecting 61.64% of respondents. Subsequently, wishful thinking, characterized by

a propensity for short-term thinking, constitutes the second obstacle. At the same time, relativism, stemming from a dearth of reading, contributes as the third impediment, resulting in narrowed perspectives. Barriers hindering students' critical thinking abilities encompass egocentrism, wherein individuals exhibit self-centered thinking and struggle to adopt a critical stance due to a predisposition towards affirming their own beliefs. Sociocentrism, on the other hand, manifests as the inclination to regard one's group or institution as superior, thereby impeding critical thought. Unwarranted assumptions, involving accepting beliefs without empirical substantiation, and wishful thinking, characterized by unfounded optimism, undermine critical thinking. Additionally, relativism, which espouses the notion of relativistic truth, further complicates critical thinking processes by fostering ambiguity regarding the validity of knowledge claims.

Figure 1. Diagram of transferable skill barriers to critical thinking ability
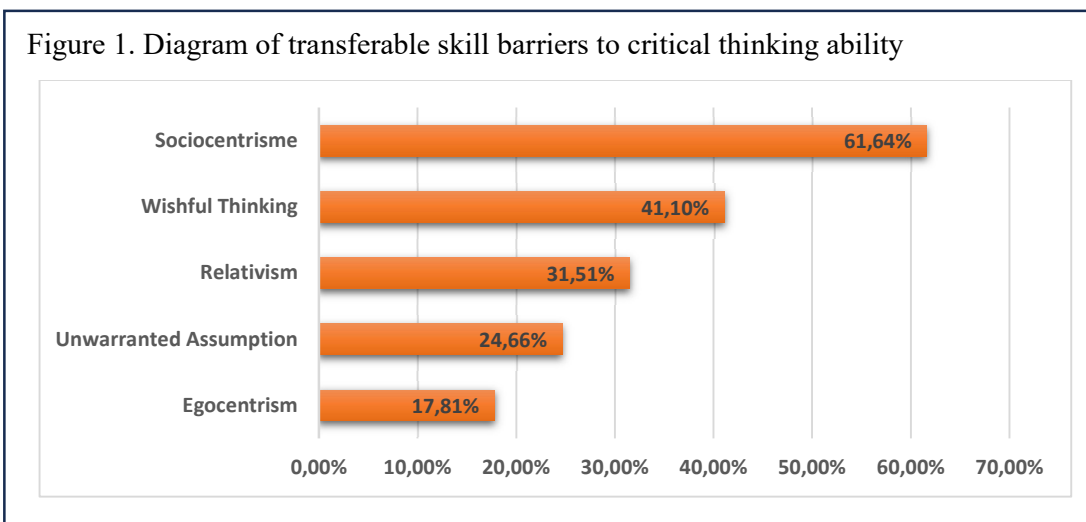
Various strategies can be employed to surmount obstacles, with tutors and supervisors offering valuable insights and interventions across multiple domains. These efforts encompass enhancements in the learning environment, guidance provision, and bolstering support systems to address challenges effectively.

Several strategies are poised to mitigate personal obstacles, such as egocentrism, sociocentrism, unwarranted assumptions, and wishful thinking. Insights gleaned from the Focus Group Discussions (FGDs) underscore the importance of fostering transferable skills, notably creative thinking, to equip novice teachers. These strategies encompass policy revisions and mindset shifts among prospective teacher students, coupled with enhancements to support systems, the development of micro-teaching training facilities, improvements in learning methodologies, and the optimization of educational practice implementation facilitated by dedicated lecturers and tutors committed to the teaching profession.

The findings regarding ownership of critical thinking skills indicate that proficiency in the transferable skills associated with critical thinking falls within the "good" category, albeit there remains room for improvement. Critical thinking abilities play a pivotal role in problem analysis and resolution, both in addressing current issues and anticipating future

challenges. Rooted in reasoned analysis supported by evidence and logical conclusions, critical thinking, as expounded by Partono *et al.* (2021), enables individuals to navigate complex problems effectively. Furthermore, critical thinking constitutes a foundational skill in 21st-century learning, serving as a linchpin in educational and professional contexts, as highlighted by Heard *et al.* (2020). Embraced as a disciplinary concept, critical thinking proficiency is indispensable in both academic and non-academic spheres, shaping learning processes and informing decision-making processes in diverse professional environments.

According to Juhji and Suardi (2018), students aspiring to become teachers must cultivate critical thinking skills. Educational practice serves as a crucial platform for identifying, refining, and enhancing these critical thinking abilities. Given the evolving demands placed on educators, critical thinking skills are indispensable across educational settings at all levels. Teachers equipped with robust critical thinking skills are better positioned to discern and address learning challenges, thereby exerting a positive influence on student academic performance.

Students encountering obstacles in critical thinking skills during educational practice often grapple with sociocentrism, as delineated by Ningrum (2019). Sociocentrism, characterized by group-oriented thinking and susceptibility to group pressure, engenders closed-mindedness and a reluctance to rely on reason. Such tendencies can significantly impact decision-making processes and the evaluation of information, leading to biased judgments rooted in conformity to group norms rather than evidence-based reasoning. Consequently, individuals may struggle to adopt a multifaceted perspective or entertain alternative viewpoints, impeding their ability to analyze problems and consider diverse arguments critically.

Teachers demonstrating sociocentrism in critical thinking can adversely influence student learning outcomes. They may tend to prioritize or dismiss certain viewpoints based on social group affiliations rather than the merit or validity of arguments. It can hinder students' ability to develop objective and analytical critical thinking skills and narrow their understanding of complex issues. The cultivation of critical thinking skills is crucial for prospective teachers as they endeavor to prepare a competitive and resilient generation capable of addressing future challenges in the 21st century (Nuraini, 2017).

Personal obstacles such as egocentrism, sociocentrism, unwarranted assumptions, and wishful thinking can be addressed through various initiatives to improve different learning aspects. These initiatives include equipping students with comprehensive competencies encompassing pedagogical, professional, personal, and social skills; aligning course content with relevant policy developments and user demands; and familiarizing students with the curriculum implemented in schools through school-based socialization, which entails outlining the subjects or topics to be taught in class. Their literacy level influences an individual's ability to critique what they encounter.

Literacy plays a pivotal role in fostering critical thinking abilities. Critical thinking, as a skill set, entails our capacity to analyze and articulate ideas effectively. An insufficient interest in reading can significantly impede individuals' critical thinking capabilities (Anisa *et al.*, 2021). Prospective educators with low literacy levels are highly likely to encounter obstacles in critical thinking, as poor literacy may restrict their access to pertinent and

supportive information. Low literacy levels can hinder their capacity to comprehend, interpret, and evaluate complex texts, which are crucial components of critical thinking (Anisa *et al.*, 2021). For aspiring educators with low literacy proficiency, there is a pressing need to concentrate on enhancing their reading skills, understanding complex texts, and honing their analytical abilities. Consequently, they can fortify their critical thinking skills and emerge as more effective instructors, aiding students in their intellectual development.

Enhancing critical thinking abilities hinges upon recognizing the significance of transferable skills. Prospective educators can be trained through project-based learning, fostering their self-development both academically and practically to navigate everyday challenges (Ridlo *et al.*, 2020). Considering the paramount importance of critical thinking skills for students in the era of the fourth industrial revolution, enabling them to thrive amidst life's challenges, continual development of critical thinking skills is imperative for sustainable progress (Jumrodah *et al.*, 2021).

Optimizing guidance from mentors, mentor teachers, and supervising lecturers alleviates students' fear of making mistakes. The apprehension of making errors can impede critical thinking; hence, the fear of making mistakes must be addressed. Students engaging in educational practices must be encouraged to experiment. This aligns with Santoso's research (2015), which suggests that barriers to critical and creative thinking include reluctance to try new things due to fear of making mistakes. Prospective educators who fear making mistakes may hesitate to pose questions or test new ideas for fear of being perceived as incompetent or failing in teaching. This fear can hinder the development of critical thinking skills because critical thinking involves the capacity to question, test, and evaluate ideas, often entailing the risk of making mistakes.

Enhancing the support system through the development of improved micro-teaching facilities empowers prospective teacher candidates, enabling them to feel more prepared and alleviating their anxieties. Similarly, optimal student services allow students to feel confident and motivated in achieving their goals. Motivation, as described by Lewin (in Maryam, Setiawati, & Ekasari, 2008), entails the positive or negative drive toward goal attainment. Motivation can stimulate, propel, or generate energy to pursue predetermined objectives.

CONCLUSION

Based on the background, theory, and data processing conducted, the following conclusions can be drawn: the results regarding possessing critical thinking skills indicate an excellent level, signifying a solid mastery of transferable skills. However, continuous improvement in students' critical thinking abilities is still necessary. Then, the perceived obstacles among students regarding critical thinking skills during educational practices primarily stem from socio-centrism barriers, accounting for 61.64%, where individuals consider themselves superior. Hence, comprehensive soft skills development is highly warranted. The last Strategies aimed at addressing this issue involve preparing prospective teacher candidates through policy adjustments and mindset shifts within the support system, the enhancement of micro-teaching training facilities, improvements in learning aspects,

and the optimization of educational practices supported by committed supervising lecturers and mentor teachers dedicated to the teaching profession.

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