Critical Self-Reflection as the Key to Employability: Findings from an Exploratory Study

Sven Wippermann[1] , **Rita Koris[2]**

[1]Department of Education Management, Ludwigsburg University of Education, Germany. [2]Department of Human Resource Development, Budapest University of Economics and Business, Hungary.

Abstract

In an era of rapid technological change and evolving labor market demands, the ability to critically self-reflect is essential for employability. This study investigates the gap between university students' self-perceived competencies and their actual performance, emphasizing the role of critical self-reflection in fostering employability. Conducted among 37 undergraduate students at two European universities, this exploratory research compares students' self-assessments with instructor evaluations. Findings reveal that 89% of students inaccurately assessed their competencies, with a majority underestimating their abilities. These discrepancies highlight the challenges students face in self-evaluation and the need for Higher Education teachers to support the development of students' self-awareness and growth mindset. The findings contribute to the discourse on employability and call for further research into critical self-reflection as a fundamental component of graduate employability.

Keywords: Employability; CareerEDGE Model; critical self-reflection; self-awareness; growth mindset; project management; entrepreneurship.

1. Introduction

Today's world is evolving rapidly, mainly driven and shaped by macrotrends such as technological change, geoeconomic fragmentation, economic uncertainty, demographic shifts and the green transition. These impact the global labor market by 2030 by transforming both jobs and required skills (WEF, 2025; OECD, 2021). Crucial skills, such as AI and big data, analytical thinking, creative thinking, resilience, flexibility, agility, and technological literacy are projected to be even more relevant. Alongside these, human-centric skills, such as leadership and social influence, curiosity and lifelong learning, systems thinking, talent management, motivation and self-awareness will play an important role by 2030 (WEF, 2025; OECD, 2021). Today's university students are estimated to have more than 12 jobs and need to learn a new

skill set every 5 years in their lifetime (WEF, 2025). Adjusting successfully to the evolving job requirements depends on their future ability to develop new skills. Future employees need to engage in continuous learning, upskilling and reskilling programs, and take their own self-development initiatives (Crowre & Adivar, 2024; OECD, 2021). Therefore, Higher Education Institutions (HEIs) need to prepare their students to be self-directed learners and agents of their own personal development. This involves self-awareness through critical self-reflection to be able to assess their actual abilities, knowledge and competences, identify their real skills gap, and set targets and directions for improvement.

A large body of research has been conducted on employability competence development, lifelong learning and professional development (e.g., Dacre Pool & Sewell, 2007; Hillage & Pollard, 1998; Harvey & Knight, 2005; Römgens et al., 2019), however little attention has been paid to the fundamental role of critical self-reflection in graduate employability (e.g., Moon, 2004). Hence this paper aims 1) to reveal students' self-perception gap between their perceived competence and actual performance; 2) to argue for the crucial importance of university teachers' role in preparing students for critical self-reflection and self-perception as a key to employability; 3) to put forward strategies and recommendations for HE teachers on how to include critical self-reflection into their teaching practice.

2. Employability and Critical Self-Reflection

The transformative changes in the labor markets have a crucial impact on the required skill sets, thus these changing and evolving skill demands will lead to a mismatch in employees' skill sets. To build a workforce equipped for the future, it is essential to focus on upskilling and reskilling across all stages of learning, from early childhood to higher education, as well as lifelong and professional development (McCrowre & Adivar, 2024). To be capable of adapting to new demands within a current job and role, employees need to learn new skills or improve their existing knowledge and skills. This process is referred to as upskilling (Brinegar & Masino, 2021). Reskilling, on the other hand, focuses on learning completely novel knowledge and skills to empower employees to shift their jobs (Brinegar & Masino, 2021). Bridging this skill gap by applying both upskilling and reskilling approaches, is crucial to ensure employability (McCrowre & Adivar, 2024).

Employability is conceptualized as a two-faceted notion: one focusing on getting and maintaining a job, and the other emphasizing the development of individual attributes (Hillage & Pollard, 1998; Harvey & Knight, 2005). Focusing on the "ability" aspect of employ*ability*, it includes the development of a range of attributes to become a critical lifelong learner (Harvey & Knight, 2005). Scholars (e.g., Römgens et al., 2019) distinguish between graduate employability and employability in workplace learning, thus several models for graduate employability (e.g., Dacre Pool & Sewell, 2007) and employability in workplace learning (e.g.,

Akkermans et al., 2013) have been put forward in the literature. The most comprehensive model of graduate employability is the CareerEDGE model published by Dacre Pool and Sewell (2007). It is a framework designed to identify the key attributes that help graduates build a holistic and competitive set of qualities that enhance their employability and workplace readiness. The model suggests that students should be given the opportunity to learn and gain experiences in career development, degree subject knowledge with connected skills, generic skills, emotional intelligence and take their work and life experiences into consideration. The reflection and evaluation of these learning and life experiences foster the students' development of self-efficacy, self-esteem and self-confidence, all of which are pivotal to employability (Dacre Pool & Sewell, 2007).

The catalyst role of reflection in the development of employability competences should not be underestimated (e.g., Heymann et al., 2022; Miller & Konstantinou, 2022). Introducing various forms of reflective practices into the HE curriculum enables students to actively engage with their learning process, assess and be aware of current abilities, knowledge and competences, so that they can take actions to improve their employability competences (Heymann et al., 2022). Becoming familiar with reflective processes, graduates will be able to employ these practices during their future career development, exercise self-reflection and take their own self-development initiatives as autonomous lifelong learners. However, individuals' self-perceptions might mismatch their actual abilities, knowledge and competences, thus providing an unrealistic view of themselves hindering their prospects for employability (Lisa et al., 2019; Miller & Konstantinou, 2022). Self-bias and the Dunning-Kruggel Effect reveal these deficits in individuals' self-evaluation (Dunning, 2011). Students tend to find self-reflection challenging and they often do not engage in a more elaborate form of realistic reflection, called critical self-reflection. Critical self-reflection requires higher-order thinking skills to question one's own assumptions, assessment and evaluation (Mezirow, 2006). Hence, critical self-reflection is the key to set clear and realistic goals for self and skills development and foster employability competences in both HE and workplace contexts.

3. Methods

Our research aimed to explore whether a gap can be identified between university students' pre-course self-perception of abilities, knowledge, competences and their actual performance during the course. Therefore, this study seeks to answer the following research questions (RQs):

1. How accurately do university students perceive and assess their own abilities, knowledge and competences related to their study subject compared to instructor feedback and evaluation?
2. How can teachers support the students' development of critical self-reflection regarding their abilities, knowledge and competencies?

This exploratory study was carried out at two European universities among 2nd-year BA students (N=37) in the autumn/winter semester of the AY 2024/25. It involved two distinct cohorts, business and education students, to ensure a diverse sample in terms of nationality, culture, and academic and disciplinary background, enriching the data's range of perspectives. The cohort in Hungary (n_1=25) was pursuing studies in the English-medium instruction program majoring in business administration and attending a practical seminar on Entrepreneurship. The participants at the Hungarian university were between 18-24 years of age and comprised 12 female and 13 male students. Their nationalities varied: eleven students were Hungarian, eight students were from former Russian states, five students from Asia and one from Africa. The cohort in Germany (n_2=12) enrolled the German speaking BA program of educational sciences and attended a seminar on Project Management. The group consisted of German students and represented a significant gender imbalance, ten female and two male students, which represents the overall gender distribution of the education program.

Students' initial self-perception was collected using two competence self-assessment questionnaires. In the group in Hungary, a validated survey in English was used designed by the EICAA project (https://www.eicaa.eu/) to assess entrepreneurship competences. In the German cohort, the questionnaire used to measure project management competencies was adapted and translated to German from Wellingtone Ltd. (https://wellingtone.co.uk). Both questionnaires contained items describing various sub-competences organized into constructs. On average 3-8 items were assigned to each construct. Students had to self-assess their level of competence for each item on a 5-point scale. Students were then evaluated on selected sub-competences by the professor based on mid-term assignments and in-class activities during the course. To answer RQ1, averages of students' self-assessment scores were then compared to teacher evaluation scores to reveal potential gaps between perceived and actual competence levels. In response to RQ2, the reflective practice approach (Gibbs, 1988) was used and teachers' individual reflections on teaching methods and strategies contributing to students' critical self-reflection were compiled to put forward recommendations.

4. Results and Discussion

Participants' perceptions of their own abilities, knowledge and competences were compared to teachers' evaluations to reveal any of the following gaps: 1) self-overestimation when participants rating themselves higher than the instructor scores, 2) self-underestimation, when participants rating themselves lower than the instructor scores. If a participant's self-assessment score matched the teacher's assessment score, then it is assumed that the participant could accurately assess their abilities, knowledge and competences.

Table 1. Self-perception gaps

	Cohort in Hungary (n_1=25)	Cohort in Germany (n_2=12)	Overall (N=37)
Self-overestimation	6	6	12
Self-underestimation	17	4	21
Accurate self-perception	2	2	4

A total of 89% of the participants misperceived their abilities, with 32% of students overestimating their performance and 57% underestimating it (Table 1). Only 11% provided self-assessments that accurately aligned with the evaluations of their instructors. Self-underestimation was more frequent in the cohort at the Hungarian university, while participants in Germany tended to overestimate themselves. The high number of participants assessing themselves more critically than their teachers did suggests a tendency toward under-confidence or excessive self-criticism. Conversely, some students have higher self-esteem and self-confidence in their own abilities which results in a false self-evaluation. Only four participants provided a self-assessment that matched the teacher's evaluation. This represents just 10,8% of the total sample, indicating that most students may struggle to accurately gauge their own performance.

Analyzing the gender distribution of the sample, eight female and four male participants overestimated their capabilities, while twelve female and nine male students were more critical of themselves than their teachers. The gender distribution of the four participants accurately assessing themselves was even; it consisted of two male students in sample 1 and two female in sample 2. As regards the participants' work experience, most students (n=26) did not have any work experience at all, only eight students had less than two years and three students between two to five years of work experience. Participants with more work experience tend to overrate themselves in this sample. Students' self-evaluation with no or little work experience varied. Similarly, no patterns could be identified in case of nationalities and cultures, probably due to the limited number of the sample. However, demographic attributes should be investigated further to reveal any possible correlations among such attributes and individuals' self-perception patterns.

Several factors may contribute to these patterns of self-assessment. One potential explanation could be the early-semester effect, as students may still be in the process of developing a clear understanding of academic expectations and grading criteria. At the beginning of their academic journeys, they may struggle to assess their own performance accurately (Zimmerman, 2002). Additionally, students may lack prior experience in self-evaluation, making it difficult for them to align their self-perceptions with external assessments (Nieminen & Boud, 2025). Psychological factors such as the interplay between confidence and competence (Cohen & Katz, 2024), as well as self-doubt and impostor syndrome, could also contribute to these

misperceptions. Research on the Dunning-Kruger effect suggests that individuals with lower expertise may overestimate their abilities due to a lack of awareness of their own limitations, which may explain why some students overrate their performance (Dunning, 2011). Conversely, self-underestimation may be associated with self-doubt or impostor syndrome, wherein students undervalue their abilities despite strong academic performance. Furthermore, artificial intelligence (AI) may reinforce and perpetuate self-biases through AI-driven recommendation systems, particularly in social media environments. Personalized recommendations, confirmation bias reinforcement, and algorithmic biases can all contribute to distorted self-perceptions (Goyal, 2025). Additionally, life and work experience and cultural background differences may further influence these self-assessment patterns, potentially shaping students' tendencies toward overestimation or underestimation (Becker et al., 2014). These factors collectively highlight the complexity of self-evaluation processes in academic settings.

5. Recommendations and Conclusion

The CareerEDGE Employability Development Profile, which is a self-report diagnostic tool based on the model to encourage students to consider their employability strengths and plan actions for any improvements, could be an initial step to foster self-reflection. Additionally, teachers should systematically integrate designated time slots and spaces for reflection within their lessons, for students' critical self-reflection as well as for individual teacher-student reflection. This practice familiarizes students with the concept, underscores its pivotal role in the learning process across all disciplines, and raises awareness of cognitive biases, personal assumptions, and belief systems. Furthermore, it would be essential to provide guidance on strategies to overcome these biases. Encouraging students to engage in peer collaboration, peer-reflection, and teacher-guided reflection can help them identify discrepancies between self-perception and external evaluations. One commonly recommended tool for fostering self-reflection is learning journals, which can effectively document individual learning progress and serve as a basis for ongoing or retrospective critical reflection. Regular engagement in individual and collaborative reflection sessions, alongside teacher-led reflective practices, could foster new routines among students, ultimately embedding critical self-reflection as an academic habit.

Since learning as well as critical self-reflection is highly dependent on students' self-awareness and mindsets, fostering both is essential (e.g., Dweck, 2017). Self-awareness creates the foundation for recognizing the need for self-reflection, a growth mindset fuels the motivation to engage in and act on self-reflective insights. A practical strategy to facilitate self-awareness and mindset exploration in students is reflective self-talk, a process in which individuals consciously examine and verbalize their beliefs, attitudes, and responses to learning challenges (e.g., Gainsburg & Kross, 2020). By fostering critical self-reflection, educators equip students with lifelong learning skills and enhance their employability in a rapidly evolving job market. Despite limiting factors, such as small sample size, students' limited introduction to critical self-

reflection, assessment bias, and the explorative nature of the study, this research provided valuable insights. Our preliminary findings call for further research into critical self-reflection. A qualitative inquiry with interviews would help a deeper understanding of students' self-perception and reveal the factors influencing self-awareness and self-reflection. Further investigation is needed on how to foster students' self-awareness and growth mindset. Testing of formulated hypotheses in a consequent large-scale quantitative study is yet to be conducted.

References

Akkermans, J., Brenninkmeijer, V., Huibers, M., & Blonk, R. W. B. (2013). Competencies for the contemporary career: Development and preliminary validation of the career competencies questionnaire. *Journal of Career Development, 40*(3), 245–267. https://doi.org/10.1177/0894845312467501

Becker, M., Vignoles, V. L., & Owe, E. (2014). Cultural bases for self-evaluation: Seeing oneself positively in different cultural contexts. *Personality and Social Bulletin*. https://doi.org/10.1177/0146167214522836

Brinegar, C., & Masino, H. S. (2021). Adapting to the new normal: Upskilling and reskilling. *Training Industrie Magazine*. https://www.nxtbook.com/nxtbooks/trainingindustry/tiq_20210506/index.php#/p/4

Cohen, R., & Katz, I. (2024). Students' academic competence beliefs as an antecedent of perceived teachers' autonomy support and motivation: A longitudinal model. *Current Psychology, 43*(45), 34601–34612. https://doi.org/10.1007/s12144-024-06900-x

Dacre Pool, L., & Sewell, P. (2007). The key to employability: Developing a practical model of graduate employability. *Education+ Training*, *49*(4), 277–289. https://doi.org/10.1108/00400910710754435/full/html

Dunning, D. (2011). Chapter five - The Dunning–Kruger effect: On being ignorant of one's own ignorance. *Advances in Experimental Social Psychology, 44*, 247–296. https://doi.org/10.1016/B978-0-12-385522-0.00005-6

Dweck, C. (2017). *Mindset - updated edition: Changing the way you think to fulfil your potential*. Constable & Robinson.

Gainsburg, I., & Kross, E. (2020). Distanced self-talk changes how people conceptualize the self. *Journal of Experimental Social Psychology, 88*, 103969. https://doi.org/10.1016/j.jesp.2020.103969

Gibbs, G. (1988). *Learning by Doing: A guide to teaching and learning methods*. Further Education Unit. Oxford Polytechnic.

Goyal, A. (2025). AI as a cognitive partner: A systematic review of the influence of AI on metacognition and self-reflection in critical thinking. *International Journal of Innovative Science and Research Technology*. https://eprint.ijisrt.org/id/eprint/159Harvey, L., & Knight, P. (2005). Briefings on employability 5. Helping Departments. http://www.employability.ed.ac.uk/documents/Staff/HEABriefings/HEA-Briefing5-Helping_depts_develop_employability.pdf

Heymann, P., Bastiaens, E., Jansen, A., van Rosmalen, P., & Beausaert, S. (2022). A conceptual model of students' reflective practice for the development of employability competences, supported by an online learning platform, *Education + Training, 64*(3), 380–397. https://doi.org/10.1108/ET-05-2021-0161

Hillage, J., & Pollard, E. (1998). *Employability: developing a framework for policy analysis.* UK Department for Education and Employment.

Lisa, E., Hennelova, K. & Newman, D. (2019). Comparison between employers' and students' expectations in respect of employability skills of university graduates. *International Journal of Work-Integrated Learning, 20*(1), 71–82.

McCrowre, R., & Adivar, B. (2024). Exploring underlying factors for variations in digital upskilling. *Industry and Higher Education, 38*(6), 515–533. https://doi.org/10.1177/09504222241249078

Mezirow, J. (2006). An overview of transformative learning. In P. Sutherland & J. Crowther (Eds.), *Lifelong learning: Concepts and contexts* (pp. 24-38). Routledge.

Miller, E., & Konstantinou, I. (2022). Using reflective, authentic assessments to embed employability skills in higher education. *Journal of Work-Applied Management, 14*(1), 4–17. https://doi.org/10.1108/JWAM-02-2021-0014

Moon, J.A. (2004). *Reflection and employability*. LTSN. https://www.advance-he.ac.uk/knowledge-hub/reflection-and-employability

Nieminen, J. H., & Boud, D. (2025). Placing authenticity at the heart of student self-assessment: An integrative review. *Teaching in Higher Education, 30*(3), 640–662. https://doi.org/10.1080/13562517.2024.2367669

OECD. (2021). *OECD Skills Outlook 2021 – Learning for Life.* OECD Publishing. https://doi.org/10.1787/0ae365b4-enRömgens, I., Scoupe, R., & Beausaert, S. (2019). Unraveling the concept of employability, bringing together research on employability in higher education and the workplace. *Studies in Higher Education, 45*(12), 2588–2603. https://doi.org/10.1080/03075079.2019.1623770

World Economic Forum (WEF). (2025). *Future of Jobs Report 2025*. World Economic Forum. https://www.weforum.org/reports/the-future-of-jobs-report-2025/

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2