

An Association Study of Transformational Leadership, Problem-Based Learning, Workplace Learning, Self-Efficacy and Student Employability: Evidence from a Vocation College in China

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Abstract- *This study's comprehensive investigation of workplace learning, problem-based learning, transformational leadership, self-efficacy, and student employability in the context of a vocational college in China contributes to evidence-based practices and interventions aimed at improving students' employability outcomes. It underscores the significance of these factors in vocational education and highlights the need for further research to enhance the understanding of employability dynamics in different cultural contexts.*

Keywords: *workplace learning, problem-based learning, transformational leadership, self-efficacy, student employability*

I. Introduction

In this study, it describes the link between workplace learning, problem-based learning, teachers' transformational leadership, self-efficacy and student employability. Each independent variable will be examined and explained in detail, using a review of the literature on the study and then give the guidance strategy to improve students' employability.

II. The Concept of Employability

In recent years, scholars have put more effort into employability-related research. The substantial technological, social, and economic changes that have occurred in recent decades (Abbas et al., 2015) have modified the concepts and operations of industrial organizations (Abbas and Sa'gsan, 2019) and higher education institutions (HEIs) across the world (Vermeulen et al., 2018). Hence, dynamic HEIs ensure the highest standards of human capital development, so that they can contribute to economic growth (Ahmed et al., 2015; Baek and Cho, 2018). Through research situations and design of methods, and the integration of theoretical and practical analysis, scholars have studied the meaning of employability and the causality between employability and other factors (Hennemann and Liefner, 2010; Avramenko, 2012; Baek and Cho, 2018). Van der Heijde and Van der Heijden (2006) have argued that employability is the individual's appropriate application of competence (Blázquez et al., 2018), continuous acquisition and creation of essential work skills in order to accomplish all the tasks, and adaptation to internal and external labor market changes (Fugate et al., 2004; De Cuyper et al., 2008; Vermeulen et al., 2018; Shahzad et al., 2020). Hence, the need for critical and reflective thinking, problem-solving abilities, self-management, learning, and related competencies is continually increasing across all disciplines (Makkonen, 2017). Several prior studies have indicated that in addition to the influence of basic education on employability, factors like personal conditions, interpersonal relations, and external factors that cannot be acquired in higher education should also be considered (Ahmed et al., 2015; Cacciolatti et al., 2017; Blázquez et al., 2018).

Employability can be defined as when the people become more effective in choosing occupations, understanding characteristic of each person and are able to set goals. Another definition explained by Tran (2015) referred to employability as a set of qualities, abilities, skills and knowledge which all labour market participants ought to guarantee that they have the capability of being successful in the workplace. In simple words, employability can be said as a gathering of imperative abilities instilled in every person to create a beneficial workforce. Employability skills are not only limited in terms of professions but also in education.

Many previous researches have viewed the construct for employability skills and come out with three main skills. Firstly, it is personal qualities skills that include self-confidence, independence, adaptability, willingness to learn and reflectiveness (Jackson, 2014). Secondly, core skills which more concern with reading efficiency, mathematical ability, verbal talents, self-management, creativity and written communication (Raihan, 2014). And the last main skill is process skills (Agrawal, 2013). These include computer literacy, ethical sensitivity, planning, problem-solving, resolving conflict and decision making. In another research by Wang

(2012), it is stated that one of the important factors in searching new employees is regarding the development of a career path. In summary, employability can be concluded as a set of skills that cover up a competence by having a personal quality, core skills, process skills and career development skills.

Employability is defined by a person's professional knowledge, skills, and worth in the workplace according to Li, Pan, and Tsao (2016). For Hillsten, Edling, and Rydgren (2016), employability is defined as the ability to get a job, hold one, and perform effectively in it following the learning process. Employability is often defined as an individual's ability to obtain work (Forrier & Sels, 2003), and it is deemed essential in the knowledge economy (Brown, Hesketh & Williams, 2003).

Employability is conceptualized as a form of work specific active adaptability that enables workers to identify and realize career opportunities. As such, employability facilitates the movement between jobs, both within and between organizations. Although employability does not assure actual employment, we contend that it enhances an individual's likelihood of gaining employment. An individual is employable to the extent that he or she can parlay person factors effectively to negotiate environmental demands (Chan, 2000). The construct focuses largely on person centered factors (i.e., career identity, personal adaptability, and social and human capital) because individuals have virtually no input into employers' hiring criteria, such as years of experience and job specific skills (external factors).

Practitioners (DeVries, Gründemann, & Van Vuuren, 2001), policymakers (Organization for Economic Cooperation and Development [OECD], 2016, etc.), and academics (Fleischmann, Koster, & Schippers, 2015, etc.) have all underlined the relevance of workplace learning in boosting employability.

Student employability (SE) can be referred to as a higher-order construct (Pan and Lee, 2011). Lees' review of the SE skills literature (Lees, 2002) and the SE agenda (Hennemann and Lie-fner, 2010) revealed that personal qualities, core skills, and process skills are key for employers. The Department of Education (The Pedagogy for Employability Group, 2006) established an "employability skills framework" with eight categories: communication skills, teamwork ability, problemsolving ability, original and entrepreneurial ability, planning and organizational ability, self-management ability, autonomous learning, and scientific and technological ability. Pan and Lee (2011) suggested that employability should cover the general and professional abilities required at work, work attitude, career planning ability, and confidence.

III. The Concept of Transformational Leadership

The concept of TL was proposed by Burns (1978), who stated that when leaders possess qualities such as mutual cooperation, enthusiasm, empowerment, vision, and creativity, they can inspire followers to achieve high motivation and strong performance and to develop shared values (Bolkan and Goodboy, 2011; Peng et al., 2018). Thus, TL is the process by which leaders communicate their emotions, attitudes, values, and beliefs to motivate subordinates (Öqvist and Malmström, 2016). Most scholars in this field have adopted the measurement variables summarized by Bass and Steidlmeier (1999) to measure the degree of TL. Specifically, (1) idealized influence (II) means that the leader can clearly express their ideas and visions to followers and encourage them to devote themselves to and participate in the realization of these visions, so there is a high degree of trust and a sense of shared identity between the followers and the leader (Harrison, 2011); (2) intellectual stimulation (IS) is a way for the leader to encourage their followers to question existing problems and is an important element in organizational learning and organizational change that also challenges the leader's existing norms and decision-making models to improve the use of various methods (Avolio et al., 1999; Shatzer et al., 2013); (3) individualized consideration (IC) is the extent to which the leader satisfies each follower's need for mentoring, including support, encouragement, and guidance. After considering the different attributes and traits of followers, the leader sets reasonable goals and then gives followers opportunities for growth and development through a journey of self-realization; and (4) inspirational motivation (IM) refers to the leader's abilities regarding expression, attraction, and inspiration. It enables followers to achieve challenging and meaningful goals through the transmission and communication of ideas (Bass and Steidlmeier, 1999; Bolkan and Goodboy, 2011).

When lecturers apply TL to enhance students' positive behaviors and attitudes, they must adopt clarified transformations of cognitive variables to demonstrate their influence (Peng et al., 2018). Poekert (2012) claimed that teachers' leadership is centered on influence and interaction, rather than power and authority. Thus, teachers create a vision for students to follow in class, causing students to remain open-minded and respectful of others, thereby improving their learning practice (Shatzer et al., 2013; Pounder, 2014). Öqvist and Malmström (2016) proposed that students' educational motivation and performance are highly dependent on teachers' leadership and that teachers have a position of extreme power over students, for example, regarding guidance, modeling, enthusiasm, self-efficacy, sincere praise, reinforcement, and interest induction. Teachers' conveyance of educational concepts and learning values can greatly improve students' commitment to learning and self-efficacy (Harrison, 2011; Pounder, 2014; Peng et al., 2018).

Introduced by Burns (1978) and Bass (1985), transformational leadership has gained legitimacy over the last three decades and proved to be an effective and influential enabler in changing employees' attitudes and behaviors, ultimately resulting in better performance of organizations (García-Morales et al., 2008; Katou, 2015; Para-González et al., 2018). While there is more of an exchange relationship in transactional leadership behavior with contingent rewards (Burns, 1978), the transformational type requires that the leader encourages employees to alter their attitudes, beliefs and values (Rafferty and Griffin, 2004). Transformational leadership is premised on provision of individualized support and enhancement of the intellectual capabilities of employees resulting in better task performance (Lowe et al., 1996; Judge and Piccolo, 2004) or overall improved efficacy of organizations (Avolio, 1999; Avolio et al., 1999; DeGroot et al., 2000; Dum Dum et al., 2002; Boerner et al., 2007).

Empirical research in the field suggests that transformational leadership may also enhance employability (Camps and Rodríguez, 2011; Van der Heijden and Bakker, 2011; Van der Heijde and Van der Heijden, 2014) and well-being of employees (Nielsen et al., 2008). Following the general definition of employability –the ability to retain a job or apply for a new desired one (Forrier and Sels, 2003; Fugate et al., 2004; Rothwell and Arnold, 2007) –and in line with the more specific perceived (subjective) employability concept (Berntson et al., 2006; De Cuyper et al., 2011). As employability is seen as advantageous to both employees and employers (Day, 2000; De Vries et al., 2001) by virtue of deteriorating job security, increased flexibility and greater individualization of employees (Berntson et al., 2006), the factors influencing employability require research attention. One of them is transformational leadership, the influence of which can potentially be observed on employees' attitudes and behaviors resulting in better performance of organizations through higher productivity (Fugate et al., 2004) and improvement of the health and well-being of employees (Berntson and Marklund, 2007; De Cuyper et al., 2008).

Student employability is more diversified than professional competence. Apart from social soft power and hard power, it also includes psychological attitudes and cognitions related to job searches. Besides, teachers must utilize intrinsic and extrinsic incentives to guide students to foster their employment skills (Harrison, 2011; Bogler et al., 2013). General and professional abilities represent students' learning outcomes and academic performance. Thus, students must have high learning satisfaction (Bogler et al., 2013) as a basis for the development of SE. Scholars have confirmed that teachers with TL are better able to motivate students to set goals and achieve learning satisfaction (McGrath et al., 2006). In order to create learning satisfaction, teachers must offer participation opportunities to students, enhance students' trust in them, and be willing to improve their practices (Harrison, 2011; Bogler et al., 2013; Pounder, 2014; Peng et al., 2018). Teachers use intellectual stimulation to encourage students to study in-depth, as well as to enable students to develop team awareness and to try to overcome learning difficulties under the influence of individualized consideration. Teachers' inspirational motivation guides students to realize their potential to gain more knowledge and skills that contribute to employability.

Based on the previous research studies by different researchers, there are various studies about the link between transformational leadership and employability. According to the study conducted by Yao-Ping, Sheng Hwa and Han-Yu (2018) among 619 undergraduates from Taiwan university, the results showed that the influences of transformational leadership on students' employability are statistically positive and significant. Self-efficacy plays the key mediators between these two variables. Apart from that, other than the direct effect, the result from the research conducted by Yizhong, Baranchenko, Lin, Lau, and Ma (2018), revealed that transformational leadership could also improve employability through skill creation. Other than that, motivation from the supervisor was related to the employability skills. According to the study conducted by Intan Marfarrina Omar, Nur Iylia Liyana Zulazmi & Che Aleha Ladin (2019), a quantitative research method was used where the findings proved that employees can develop their process skill (one of employability dimension) when they received inspirational motivation by their supervisor (Camps & Rodríguez, 2011). In another study by Van der Heijden and Bakker (2011), it was found that there is a direct positive effect of transformational leadership on worker and manager evaluations of employability. There is some suggestion that transformational leadership heightens employability after a leader controls their personality towards the employees.

Thus, Hypothesis 1 was as follows:

Hypothesis 1: Teachers' transformational leadership has a positive and significant impact on students' employability.

IV. The Concept of Problem-based Learning

Problem-based learning is a kind of learning that has gotten a lot of attention in recent years (Dunlap, 2005; McGrath, Comfort, Luo, Samaranayake & Clark, 2006; Chang, Jong & Huang, 2012). Problem-based learning begins with unstructured real-world issues or opportunities, encourages individuals to work together to solve issues, and ends with the problem being solved (Barrows & Tamblyn, 1980; Hmelo-Silver, 2004; Liu,

2010; Scott, 2017). However, it has been pointed out that problem-based learning is a process of acquiring many of the abilities required in the workplace (collaboration, co-operation, self-regulative knowledge, knowledge sharing, and autonomous work) (Tynjälä, 2007). According to Dunlap (2005), problem-based learning may help students grasp professional information and abilities more efficiently. People inevitably encounter problems at work, and problem-based learning can reflect a person's learning situation in the workplace. Eteläpelto (1998) found that students' problem-solving methods were developed to a considerable extent in work-related projects, and the abilities they mastered were a sufficient foundation for a broad grasp of basic knowledge in the future. As a result, problem-based learning can help students to engage in the learning environment, master strategic knowledge, improve photoshop capabilities, and improve learning efficiency (Chang et al., 2012; Peng, Sheng-Hwa, & Han-Yu, 2018), which is the foundation for developing service capabilities (Chang et al., 2012; Peng, Sheng-Hwa, & Han-Yu, 2018). Although problem-based learning is commonly employed in medical and management education, there has been little research on its usage in pre-service teacher education (Brownell & Jameson, 2004; Jones, 2006; Hallinger & Lu, 2011; Ungaretti, Thompson, Miller & Peterson, 2015; Xu, Ye & Wang, 2021). Therefore, it is important to investigate the function of problem-based learning in the development of regular college students' employability (Savery, 2006; Koh, Khoo, Wong & Koh, 2008; Schmidt, Rotgans & Yew, 2011; Li, Peng, Du, Li & Yu, 2020).

Problem-based learning is helpful in enhancing students' interests in learning and career paths. It is connected with SE, as it can facilitate students in developing the appropriate learning attitudes and higher-order thinking skills needed to face real-world challenges, such as critical thinking, problemsolving, and reflection skills (White et al., 2004). Some scholars have confirmed that students who engage in PBL strengthen their learning motivation, attitudes, and behaviors, thus improving their learning autonomy, critical thinking skills, and employability (Peng et al., 2018).

Thus, Hypothesis 2 was proposed:

Hypothesis 2: Problem-based learning has a positive and significant impact on students' employability

V. The Concept of Workplace Learning

Workplace learning is the process of acquiring information and skills in the workplace, both formally and informally (Pamela, 1999). Workplace learning may be achieved via many models and plans (Boud & Solomon, 2001), and includes informal learning activities utilising personal resources, informal learning activities using environmental resources, and formal learning activities (Grosemans et al., 2020). Formal workplace learning involves participating in learning activities, including specific goals, background, support, and time frame (Malcolm, 2003). On the contrary, informal workplace learning touches on all the learning activities obtained from daily work experience, including personal and environmental information sources (Noe, Tews & Marand, 2013). Formal workplace learning enhances internal employability (Juhdi, 2010; Sanders & Grip, 2004; Houben et al., 2019), external employability (Nurita et al., 2010), and general employability (Juhdi, 2010; Sanders & Grip, 2004; Houben et al., 2019). (Berntson, Sverke & Marklund, 2006; Carbery & Garavan, 2005; Panagiotakopoulos, 2011). Participating in informal learning is an essential way for workers to increase their employability and adapt to changing workplace demands (Hootegem & Witte, 2019; Heijden, Boon, Klink & Meijs, 2009; Froehlich, Beusaert, Segers & Gerken, 2014).

Informal learning is "usually intentional but not highly structured" (Marsick and Watkins, 2001, p. 25) and includes "self-directed learning, networking, coaching, mentoring, and performance planning" (Marsick and Watkins, 2001, p. 25). Based on Lewin's (1951) notion that behavior is a function of the interactions between a person and his or her environment, informal learning theory, developed by Watkins and Marsick (1992) and Marsick et al. (1999), focused on learning through interactions between an employee and others around the employee in their organization. Incidental learning, which is not designed by organizations but led by an employee's experience without intended learning purpose, was considered a subset of informal learning (Marsick and Watkins, 1990). By taking previous works on informal learning together, Jeong et al. (2018) defined informal learning as "an individual learning process that is highly embedded and integrated with daily work activities, primarily delivers tacit, implicit knowledge, and can be deliberate, conscious, planned, and intended, or spontaneous, unconscious, unplanned, and unintended, resulting in the enhancement of knowledge and skills" (p. 132). Informal learning enables employees' self-regulation in learning processes as employees can control to a large extent to what and how they learn in their contexts (Watkins and Marsick, 1992; Boekaerts and Minnaert, 1999; Colley et al., 2002).

In Panagiotakopoulos' study, informal learning using personal resources contributed to a better understanding of overall employability (2011). To date, no studies have looked at the impact of informal learning from natural sources on employability.

Thus, Hypothesis 3 was proposed:

Hypothesis 3: Workplace learning has a positive and significant impact on students' employability.

VI. The Concept of Student Self-Efficacy

Albert Bandura proposed the self-efficacy hypothesis, which describes an individual's conviction in his or her ability to do a job well (Bandura et al., 1997). Self-efficacy has little to do with a person's skill, but it does have something to do with their belief in their own talents, and these beliefs might influence their behaviour and performance (Okutan & Kahveci, 2012). Employees that have a strong sense of self-efficacy are more confident in their own talents and can produce more effort, endurance, and resilience to achieve tasks (Bandura et al., 1997). Employees with a strong feeling of self-efficacy are more inclined to keep working hard to achieve positive outcomes. Employees with poor self-efficacy, on the other hand, are unable to accomplish tasks well or may even abandon their positions entirely (Aydın, 2013, p. 196). self-efficacy and learning goal orientation (Chen, Gully & Eden, 2001; Chen, Ca Sper & Cortina, 2001; Hao, Chiu & Leung, 2019), and self-efficacy and workplace outcomes (Akkermans, Nykänen & Vuori, 2015) were the main topics of previous studies. Nevertheless, Stajkovic and Luthans (1998) discovered that self-efficacy accounted for around 28% of an individual's success at work.

Conclusions have differed regarding the relationship between self-efficacy and outcomes. For example, Lent and Brown (2006) stated that self-efficacy positively impacts academic satisfaction, while Lent et al. (2012) found that there was no significant effect. This difference may be due to the measurement of self-efficacy. Previous studies have shown a high degree of predictive validity when task-specific self-efficacy is measured; thus, research on self-efficacy should explore its significant effects on measurable performance indicators and variables (Bandura, 1997; Choi, 2005; Peng et al., 2018). However, context-specific self-efficacy has been transformed into exclusive self-efficacy for multiple fields through repeated successes and failures in different contexts, and context-specific self-efficacy has been generalized to different tasks based on the experience of operational tasks, such as academic self-efficacy (Lent et al., 1997).

Self-efficacy has three dimensions: magnitude, the level of task difficulty a person believes she can attain; strength, the conviction regarding magnitude as strong or weak; and generality, the degree to which the expectation is generalized across situations. An employee's sense of capability influences his perception, motivation, and performance (Bandura, 1997). We rarely attempt to perform a task when we expect to be unsuccessful. Following is an example. One professor may believe that she can learn how to teach graduate courses online on her own. Another professor may have strong doubts about his ability to learn how to teach graduate courses online without taking some formal training. Self-efficacy has powerful effects on learning, motivation, and performance, because people try to learn and perform only those tasks that they believe they will be able to perform successfully. Self-efficacy affects learning and performance in three ways (Bandura, 1982):

1. Self-efficacy influences the goals that employees choose for themselves. Employees with low levels of self-efficacy tend to set relatively low goals for themselves. Conversely, an individual with high self-efficacy is likely to set high personal goals. Research indicates that people not only learn but also perform at levels consistent with their self-efficacy beliefs.

2. Self-efficacy influences learning as well as the effort that people exert on the job.

Employees with high self-efficacy generally work hard to learn how to perform new tasks, because they are confident that their efforts will be successful. Employees with low self-efficacy may exert less effort when learning and performing complex tasks, because they are not sure the effort will lead to success.

3. Self-efficacy influences the persistence with which people attempt new and difficult tasks. Employees with high self-efficacy are confident that they can learn and perform a specific task. Thus, they are likely to persist in their efforts even when problems surface. Conversely, employees with low self-efficacy who believe they are incapable of learning and performing a difficult task are likely to give up when problems surface. In an extensive literature review on self-efficacy, Albert Bandura and Edwin Locke (2003) concluded that self-efficacy is a powerful determinant of job performance.

Zhao et al. (2005) used SCT and sampled 1,043 Master of Business Administration students at five universities in order to understand the relationships among personal characteristics, self-efficacy, cognitive experience, and entrepreneurial intention. Their research findings showed that students with high self-efficacy could enhance their own self-confidence and understanding, which they needed to get a job offer or start up a business. They consequently had positive work attitudes and good career planning skills. Dacre Pool and Qualter (2013) indicated that students' initiative in the formation and application of SE is low. This can be attributed to students' lack of motivation to acquire more employment knowledge or a lack of self-efficacy. Therefore, some scholars have suggested that students with more self-efficacy can improve their development of social connections so that they can effectively manage the interpersonal relationships needed in their future workplaces (Peng et al., 2018).

Thus, Hypothesis 4 was as follows:

Hypothesis 4: Self-efficacy has a positive and significant impact on students' employability.

VII. Conclusion

In conclusion, this study has substantial research relevance as it examines the effects of workplace learning, problem-based learning, transformational leadership, and self-efficacy on students' employability in the setting of Chinese vocational colleges. By conducting comprehensive research on the distinct contributions of these elements, it can advance the theoretical and practical aspects of vocational education and offer recommendations for enhancing students' employability within this particular setting.

REFERENCES

- [1]. Akkermans, J., Nykänen, M., & Vuori, J. (2015). Practice Makes Perfect? Antecedents and Consequences of an Adaptive School-to-Work Transition. *Sustainable Working Lives*, 65–86.
- [2]. Al-Jubari, I., Hassan, A., & Liñán, F. (2019). Entrepreneurial intention among University students in Malaysia: integrating self-determination theory and the theory of planned behavior. *International Entrepreneurship and Management Journal*, (),–.doi:10.1007/s11365-018-0529-0
- [3]. Andrews, J., & Higson, H. (2008). Graduate employability, 'soft skills' versus 'hard' business knowledge: a european study. *Higher Education in Europe*, 33(4), 411-422.
- [4]. Aydın, M.(2013). *Eğitimde Örgütsel Davranış*. Ankara:GaziPublications.
- [5]. Bandura, A. , Freeman, W. H. , & Lightsey, R. (1997). Self-efficacy: the exercise of control.
- [6]. *Journal of Cognitive Psychotherapy*.13 (2), 158-166(9).
- [7]. Barrows, H. S. & Tamblyn, R. M.. (1980). *Problem-based learning: An approach to medical education*. Springer Pub. Co.
- [8]. Berntson, E., Sverke, M., & Marklund, S. (2006). Predicting perceived employability: human capital or labour market opportunities?. *Economic and Industrial Democracy*, 27(2), 223-244.
- [9]. Billett, S. (2001). Learning through work: workplace affordances and individual engagement.
- [10]. *Journal of Workplace Learning*, 13(5), 209–214.
- [11]. Boud, D., & Solomon, N. (2001). Work-based learning: a new higher education. *Academic Achievement*, 234.
- [12]. Brooks, R., & Everett, G. (2008). The impact of higher education on lifelong learning.
- [13]. *International Journal of Lifelong Education*, 27, 239 - 254.
- [14]. Brown, P. , Hesketh, A. , & Williams, S. (2003). Employability in a knowledge-driven economy.
- [15]. *Journal of Education & Work*, 16(2), 107-126.
- [16]. Brownell, J., & Jameson, D. A. (2004). Problem-based learning in graduate management education: an integrative model and interdisciplinary application. *Journal of Management Education*, 28(5), 558-577.
- [17]. Carbery, R., & Garavan, T. N. (2005). Organisational restructuring and downsizing: issues related to learning, training and employability of survivors. *Journal of European Industrial Training*, 29(6),488-508.
- [18]. Chang, C. C., Jong, A., & Huang, F. C. (2012). Using electronic resources to support problem- based learning. *Journal of Educational Computing Research*, 46(2), 195-206.
- [19]. Chen, G., Ca Sper, W. J., & Cortina, J. M. (2001). The roles of self-efficacy and task complexity in the relationships among cognitive ability, conscientiousness, and work-related performance: a meta-analytic examination. *Human Performance*, 14(3), 209-230.
- [20]. Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale.
- [21]. *Organizational Research Methods*, 4(1), 62-83.
- [22]. Choi, W., & Jacobs, R. L. (2011). Influences of formal learning, personal learning orientation, and supportive learning environment on informal learning. *Human Resource Development Quarterly*, 22(3),239-257.
- [23]. Dang, V. T., & Chou, Y. C. (2019). Extrinsic motivation, workplace learning, employer trust, self-efficacy and cross-cultural adjustment: an empirical study of vietnamese laborers in taiwan. *Personnel Review*, ahead-of-print (ahead-of-print).
- [24]. De Vries, S., Gründemann, R., & Van Vuuren, T. (2001).Employability policy in Dutch organizations.*The International Journal of Human Resource Management*(7).
- [25]. Dinther, M. V., Dochy, F., & Segers, M. (2011). Factors affecting students' self-efficacy in higher education. *Educational Research Review*, 6(2), 95-108.
- [26]. Dunlap, J. C. (2005). How a capstone course prepares students for a profession.*ETR&D*, 53(1), 65-85.
- [27]. Eteläpelto, A. (1998).The development of expertise in information systems design. Jyväskylä: University of Jyväskylä.
- [28]. Fleischmann, M., Koster, F., & Schippers, J. (2015). Nothing ventured, nothing gained! how and under which conditions employers provide employability-enhancing practices to their older workers. *International Journal of Human Resource Management*, 26(22), 2908-2925.

- [29]. Forrier, A. & Sels, L. (2003). The concept employability: a complex mosaic. *Int. J. of Human Resources Development and Management*(2).
- [30]. Froehlich, D. E., Beusaert, S., Segers, M., & Gerken, M. (2014). Learning to stay employable. *Career Development International*, 19(5), 508 - 525.
- [31]. Grosemans, I. , Smet, K., Houben, E., & Kyndt, E. (2020). Development and Validation of an Instrument to Measure Work-Related Learning. *Scandinavian Journal of Work and Organizational Psychology*(1).
- [32]. Grosemans, I., Coertjens, L., & Kyndt, E. (2020). Work-related learning in the transition from higher education to work: the role of the development of self-efficacy and achievement goals. *British Journal of Educational Psychology*, 90(1), 19-42.
- [33]. Guilbert, L., Carrein, C., Guérolé, N., & Priolo, D. (2018). Relationship between perceived organizational support, proactive personality, and perceived employability in workers over 50. *Journal of Employment Counseling*, 55(2), 58-71.
- [34]. Hair, J. F., Black, B., Babin, B. J., & Anderson, R. (2011). *Multivariate Data Analysis*. China Machine Press.
- [35]. Hager, P., & Beckett, D. (1999). Making judgments as the basis for workplace learning: preliminary research findings. working paper. Australian Vocational Education & Training Research Association, 175-184.
- [36]. Hallinger, P., & Lu, J. (2011). Assessing the instructional effectiveness of problem-based management education in thailand: a longitudinal evaluation. *Management Learning*, 42(3), 279- 299.
- [37]. Hao, K., Chiu, W. C., & Leung, H. K. (2019). Building creative self-efficacy via learning goal orientation, creativity job requirement, and team learning behavior: the key to employee creativity. *Australian Journal of Management*, 44.
- [38]. Heijden, B., Boon, J., Klink, M., & Meijs, E. (2009). Employability enhancement through formal and informal learning: an empirical study among dutch non-academic university staff members. *International Journal of Training & Development*.
- [39]. Hennemann, S. & Liefner, I. (2010). Employability of German Geography Graduates: The Mismatch between Knowledge Acquired and Competences Required. *Journal of Geography in Higher Education*(2).
- [40]. Hillsten, M., Edling, C., & Rydgren, J. (2016). Social capital, friendship networks, and youth unemployment. *Social Science Research*, 61, 234.
- [41]. Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn?. *Educational Psychology Review*, 16, 235-266.
- [42]. Hootegem, A. V. , & Witte, H. D. (2019). Qualitative job insecurity and informal learning: a longitudinal test of occupational self-efficacy and psychological contract breach as mediators. *International Journal of Environmental Research and Public Health*, 16(10).
- [43]. Houben, E., Cuyper, N. D., Kyndt, E., & Forrier, A. (2019). Learning to be employable or being employable to learn: the reciprocal relation between perceived employability and work-related learning. *Journal of Career Development*, 48(4), 089484531986743.
- [44]. Ibrahim, A. J. , Arif, H. , & Francisco, L. (2018). Entrepreneurial intention among university students in malaysia: integrating self-determination theory and the theory of planned behavior. *International Entrepreneurship & Management Journal*, 1-20.
- [45]. Karabatak, S., & Turhan, M. (2017). Effect of web-based problem based learning on school administrators' self-efficacy beliefs and attitudes towards principalship profession. *tim Ve Bilim*, 42(191).
- [46]. Karen E. Watkins and V.J. Marsick, *Sculpting the Learning Organization -- Lessons in the Art and Science of Systemic Change*, Jossey-Bass, Inc, San Francisco, 1993. Karen E. Watkins. Workplace learning: Changing times, changing practices. *New Directions for Adult & Continuing Education* 1995.68(1995):3-16.
- [47]. Kim, K., Chaudhary, A. K., Han, A., Ma, S., & Threeton, M. D. (2021). Factors associated with employment intentions of agriculture school students in south korea. *The Journal of Agricultural Education and Extension*(1), 1-19.
- [48]. Kiss, E., Barker, M., & Singh, P. (2019). International undergraduate business students' perceptions of employability. *Fifth International Conference on Higher Education Advances*.
- [49]. Koh, C. H., Khoo, H. E., Wong, M. L., & Koh, D. (2008). The effects of problem-based learning during medical school on physician competency: a systematic review. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, 178(1), 34-41.

- [50]. Kohler, T., Landis, R. S. & Cortina, J. M. (2017). Establishing methodological rigor in quantitative management learning and education research: the role of design, statistical methods, and reporting standards. *Academy of Management Learning & Education*.
- [51]. Kolmos, A., Holgaard, J. E. & Clausen, N. R. (2021). Progression of student self-assessed learning outcomes in systemic PBL. *European Journal of Engineering Education*(1).
- [52]. Li, K., Peng, Y. P., Du, Z., Li, J., & Yu, T. (2020). Do specific pedagogies and problem-based teaching improve student employability? a cross-sectional survey of college students. *Frontiers in Psychology*, 11.
- [53]. Li, W. Z., Pan, S. Y., & Tsao, L. Y. (2016). The Study of College Students' Internship Experience and Self-Efficacy (Unpublished Bachelor's thesis). Ming Chuan University, Taoyuan, Taiwan.
- [54]. Liu, G. Z. (2010). Handbook of research on educational communications and technology. *British Journal of Educational Technology*, 13(1), 260-263.
- [55]. Liu, X., Peng, M. Y. P., Anser, M. K., Chong, W. L. & Lin, B. (2020). Key Teacher Attitudes for Sustainable Development of Student Employability by Social Cognitive Career Theory: The Mediating Roles of Self-Efficacy and Problem-Based Learning. *Frontiers in Psychology*.
- [56]. Marsick, V. J. (1987). New Paradigms for Learning in the Workplace. In V. J. Marsick (Ed.), *Learning in the Workplace* (pp. 11–30). Beckenham, Kent: Croom Helm.
- [57]. Malcolm, J. (2003). Informality and formality in learning: a report for the Learning and Skills Research Centre. Learning and Skills Development Agency.
- [58]. McGrath, C., Comfort, M. B., Luo, Y., Samaranayake, L. P., and Clark, C. D. (2006). Application of an interactive computer program to manage a problem-based dental curriculum. *Journal of Dental Education*, 70(4), 387-397.
- [59]. Nimmi, P. M., Abdulkhader, Z., & Rahul, P. R. (2021). Channelling employability perception through lifelong learning: an empirical investigation. *Education and Training*.
- [60]. Noe, R. A., & Wilk, S. L. (1993). Investigation of the factors that influence employees' participation in development activities. *Journal of Applied Psychology*, 78(2), 291-302.
- [61]. Noe, R. A., Tews, M. J., & Marand, A. D. (2013). Individual differences and informal learning in the workplace. *Journal of Vocational Behavior*, 83(3), 327-335.
- [62]. NY. <https://www.shanghairanking.cn/rankings/bcmr/2021/040101>
- [63]. Okutan, M., & Kahveci, A. (2012). İlköğretim okul müdürlerinin genel öz yeterlik inançlarının çeşitli değişkenler açısından incelenmesi (Rize örneği). *Kastamonu Education Journal*, 20(1), 27-42.
- [64]. Organisation for Economic Co-operation and Development. (2016). Enhancing employability. Report prepared for the G20 Employment Working Group. Retrieved from
- [65]. <https://www.oecd.org/g20/topics/employment-and-social-policy/Enhancing-Employability-G20-Report-2016.pdf>
- [66]. Pajares, F. (1996). Self-Efficacy Beliefs in Academic Settings. *Review of Educational Research*(4).
- [67]. Pamela, M. (1999). Workplace learning: developing an holistic model. *The Learning Organization*(1).
- [68]. Pan, Y.-J., and Lee, L.-S. (2011). Academic performance and perceived employability of graduate students in business and management-an analysis of Nationwide Graduate Destination Survey. *Proc. Soc. Behav. Sci.* 25, 91-103.
- [69]. Panagiotakopoulos, A. (2011). Workplace learning and its organizational benefits for small enterprises: evidence from greek industrial firms. *Learning Organization*, 18(5), 364-374.
- [70]. Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91(3), 636-652.
- [71]. Peng, Y. P., Sheng-Hwa, T., & Han-Yu, W. (2018). The Impact of Professors' Transformational Leadership on University Students' Employability Development based on Social Cognitive Career Theory. (eds.) *Education and Multimedia Technology*(pp.).54-58.
- [72]. Possa, G. (2006). Europe's universities in response to europe's challenges. *Higher Education in Europe*, 31(4), 355-357.
- [73]. Roni, S. M., Merga, M. K. & Morris, J. E. (2020). *Conducting Quantitative Research in Education*. Springer, Singapore.
- [74]. Rothwell, W. J. (2002). *The Work Place Learner*, American Management Association, New York, NY.
- [75]. Rowden, R. W., & Conine, C. T. (2005). The impact of workplace learning on job satisfaction in small us commercial banks. *Journal of Workplace Learning*, 17(4), 215-230.
- [76]. Ryu, G., & Moon, S. G. (2019). The effect of actual workplace learning on job satisfaction and organizational commitment: the moderating role of intrinsic learning motive. *The Journal of Workplace Learning*.
- [77]. Sanders, J., & Grip, A. D. (2004). Training, task flexibility and the employability of low-skilled workers. *International Journal of Manpower*, 25(urn:nbn:nl:ui:27-13265), 73-89.

- [77]. Savery, J. R. (2006). Overview of problem-based learning: definitions and distinctions. *Interdiscipl. J. Prob. Based Learn.*, 1, 9-20.
- [78]. Schmidt, H. G., Rotgans, J. I., & Yew, E. H. (2011). The process of problem-based learning: what works and why. *Medical Education*, 45(8), 792-806.
- [79]. Scott, K. S. (2017). An integrative framework for problem-based learning and action learning: promoting evidence-based design and evaluation in leadership development. *Human resource development review: HRD review*.
- [80]. Sharon, J. C. & William, J. K. (1998). Self-directed learning and the learning organization: Examining the connection between the individual and the learning environment. *Human Resource Development Quarterly*(4).
- [81]. Shimizu, I., Nakazawa, H., Sato, Y., Wolfhagen, I., & Knings, K. D. (2019). Does blended problem-based learning make asian medical students active learners?: a prospective comparative study. *BMC Medical Education*, 19.
- [82]. Belfiore, M. E., and others. *Reading Work: Literacies in the New Workplace*. Mahwah, N.J.: Erlbaum, 2004.
- [83]. Billett, S., Fenwick, T., and Somerville, M. (eds.). *Work, Learning and Subjectivity*.
- [84]. New York: Springer, 2007.
- [85]. Chaiklin, S., Hedegaard, M., and Jensen, U. J. *Activity Theory and Social Practice: Cultural Historical Approaches*. Langelandsgade, Denmark: Aarhus Press, 2003.
- [86]. Chappell, C., and others. *Reconstructing the Lifelong Learner: Pedagogy and Identity in Individual, Organisational and Social Change*. London: Routledge Falmer, 2003.
- [87]. Davis, B., and Sumara, D. "Learning Communities: Understanding the Workplace as a Complex System." In T. Fenwick (ed.), *Socio-Cultural Understandings of Workplace Learning*. *New Directions in Adult and Continuing Education*, no. 92. San Francisco: Jossey-Bass, 2001.
- [88]. Farrell, L., and Fenwick, T. "Educating the Global Workforce?" In L. Farrell and T. Fenwick (eds.), *Educating the Global Workforce*. London: Routledge, 2007.
- [89]. Fenwick, T. "Understanding Relations of Individual-Collective Learning in Work: A Review of Research." *Management Learning*, 2008, 39(3), 227–243.
- [90]. Sawchuk, P., Duarte, N., and Elhammoumi, M. *Critical Perspectives on Activity: Explorations Across Education, Work, and Everyday Life*. New York: Cambridge University Press, 2006.
- [91]. Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior*, 65(1), 14–38.
- [92]. Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods*, 4(1), 62–83.
- [93]. Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081
- [94]. Berntson, E., & Marklund, S. (2007). The relationship between perceived employability and subsequent health. *Work and Stress*, 21(3), 279–292.
- [95]. Nauta, M. M., Kahn, J. H., Angell, J. W., & Cantarelli, E. A. (2002). Identifying the antecedent in the relation between career interests and self-efficacy: Is it one, the other, or both? *Journal of Counseling Psychology*, 49(3), 290–301.
- [96]. Van der Heijden, B. and Bakker, A. (2011), "Toward a mediation model of employability enhancement: A study of employee-supervisor pairs in the building sector", *The Career Development Quarterly*, Vol. 59, pp. 232-248.
- [97]. Van der Heijde, C. and Van der Heijden, B. (2006), "A competence-based and multidimensional operationalization and measurement of employability.", *Human Resource Management*, Vol. 45 No. 3, pp. 449-476.
- [98]. Camps, J. and Rodríguez, H. (2011), "Transformational leadership, learning, and employability: Effects on performance among faculty members", *Personnel Review*, Vol. 40 No. 4, pp. 423-442.