Human Resources Management and Services 2025, 7(3), 4900.
https://doi.org/10.18282/hrms4900

Review

A literature review on university student entrepreneurship from a Human Resource Development (HRD) perspective

Hae-Won Lee[1], Seung-Hwan Jang[2], Jae-Seok Jeong[1*]

[1] Graduate School of Pan-Pacific International Studies, Kyung Hee University, Gyeongggi-do 17104, Republic of Korea
[2] College of Humanity and General Education, Seokyeong University, Seoul 02713, Republic of Korea
*** Corresponding author:** Jae-Seok Jeong, profjeong@khu.ac.kr

CITATION

Lee HW, Jang SH, Jeong JS. (2025). A literature review on university student entrepreneurship from a Human Resource Development (HRD) perspective. Human Resources Management and Services. 7(3): 4900. https://doi.org/10.18282/hrms4900

ARTICLE INFO

Received: 30 July 2025
Revised: 19 August 2025
Accepted: 26 August 2025
Available online: 10 October 2025

Abstract: In response to the increasing youth unemployment rate and the demand for future-oriented career development, university student entrepreneurship has emerged as a critical domain in both economic policy and education. This study conducts a comprehensive literature review to examine the interrelationships between entrepreneurship, entrepreneurship education, entrepreneurial competency, and entrepreneurial intention among university students, with an emphasis on the Human Resource Development (HRD) perspective. The review reveals that entrepreneurial mindset significantly influences students' intention to start a business, while entrepreneurship education contributes both directly and indirectly through the development of entrepreneurial competencies. Entrepreneurial competencies serve as a practical foundation for translating intention into action and are integral to HRD's goal of competency-based talent development. The study further highlights that entrepreneurship education aligned with HRD principles—such as experiential learning, self-directed development, and learning organization frameworks—can foster employability and self-employment capacity. This integrative analysis suggests that university entrepreneurship programs should not be seen merely as policy instruments, but rather as strategic HRD initiatives for developing future-ready, opportunity-creating human capital. Implications for educational design, policy development, and future empirical research are discussed.

Keywords: university student entrepreneurship; entrepreneurial intention; entrepreneurship education; entrepreneurial competency; Human Resource Development (HRD)

1. Introduction

The increasing youth unemployment rate around the world and changes in the employment structure due to the Fourth Industrial Revolution are requiring a significant change in the way young people participate in the economy. In this context, start-ups are no longer regarded as a choice of some individuals, but as a strategy that should be actively encouraged at the social and economic level. In particular, University student start-ups are attracting attention as a form of autonomous career development overcoming employment instability, and young people with innovative ideas and digital affinity are emerging as key players in the new business ecosystem.

One of the core concepts explaining the entrepreneurship activities of university students is entrepreneurship. Entrepreneurship is a concept that encompasses actions and attitudes to combine resources and create opportunities, taking uncertainties and risks, and can be cultivated through various education and experiences as well as individual intrinsic tendencies. Accordingly, in the field of university education, entrepreneurship education that promotes an active entrepreneurial attitude and willingness to act beyond conveying knowledge and skills for entrepreneurship is

being emphasized. Entrepreneurship education allows students to develop basic competencies and practical skills necessary for entrepreneurship, and ultimately strengthens their entrepreneurial intentions.

In addition, recent studies have emphasized the importance of entrepreneurship competency in the formation of entrepreneurship intention. Entrepreneurship intention can be developed through education and experience. Therefore, entrepreneurship education should be designed in the direction of substantially improving entrepreneurship competency through real problem solving, team project, and simulation-based learning, etc.

Entrepreneurship, entrepreneurship education, entrepreneurship competency, and entrepreneurship intention, which are variables related to the start-up of university students, have important theoretical and practical implications from the perspective of Human Resource Development (HRD). HRD aims to develop individual competencies for the sustainable development of organizations and society, and in recent years, it has included a broad concept of learning and growth that includes creativity, self-direction, and self-employment, away from traditional job-oriented education. In particular, University student start-ups are in contact with HRD's main research topics in terms of self-directed career development that supports individual job identity and self-realization.

Furthermore, growing students into active economic players who can create new jobs rather than being passive consumers of the job market through entrepreneurship education is closely linked to the goal of developing individual potential and realizing organizational and social contributions, which are core values of HRD. From this point of view, the theoretical understanding of university students' entrepreneurial intentions and their determinants can function as basic data for the strategic task of establishing a competency-based talent development system at the HRD level beyond a simple entrepreneurial revitalization strategy.

Therefore, this study aims to comprehensively examine the literature, focusing on the relationship between entrepreneurship, entrepreneurship education, entrepreneurship competency, and entrepreneurship intention, and to theoretically explore how these factors affect university student entrepreneurship. To this end, papers from 1980 to the present written using related variables were selected, analyzed, and organized, and cited in the paper. Furthermore, through this consideration, we intend to derive implications necessary to increase the effectiveness of university entrepreneurship education and seek ways to foster young talent from an HRD perspective.

2. Literature review procedures (methodology)

2.1. Search strategy and databases

We conducted a structured literature review drawing on multidisciplinary research indexes that capture HRD, entrepreneurship, and higher education scholarship. The core databases were Web of Science Core Collection, Scopus, ERIC, PsycINFO, and Business Source Complete (EBSCO). Google Scholar was used for forward/backward citation chasing and grey-literature checks (e.g., conference proceedings and reports). The review covered publications from January 1980 through

August 2025, reflecting the rise of entrepreneurship education and HRD scholarship during the Fourth Industrial Revolution and the expansion of competency-based approaches.

2.2. Keywords and Boolean strings

We combined population, phenomenon, and HRD lenses using nested Boolean operators, for example: "(university OR college OR undergraduate) AND (entrepreneur* intention OR entrepreneurial intention) AND (entrepreneur* education OR entrepreneurship program) AND (competenc* OR skill* OR capability) AND (human resource development OR HRD OR competency-based OR experiential learning OR learning organization)".

2.3. Eligibility criteria

2.3.1. Inclusion

Peer-reviewed journal articles (quantitative, qualitative, or mixed methods) and systematic reviews addressing at least two focal constructs among entrepreneurship/entrepreneurship education/entrepreneurial competency/entrepreneurial intention in university student populations, with interpretable implications for HRD (e.g., competency development, experiential learning, coaching/mentoring, learning organization).

2.3.2. Exclusion

Studies not focused on students; papers addressing entrepreneurship only as macro-policy without individual learning/competency outcomes; non-English items (unless an English abstract provided sufficient detail for coding); editorials or opinion essays lacking empirical or systematic foundations.

2.3.3. Screening and selection

After deduplication (n = [insert]), we screened titles/abstracts (n = [insert]) and assessed full texts against the criteria (n = [insert]). A PRISMA-style flow diagram is provided in **Figure 1**.

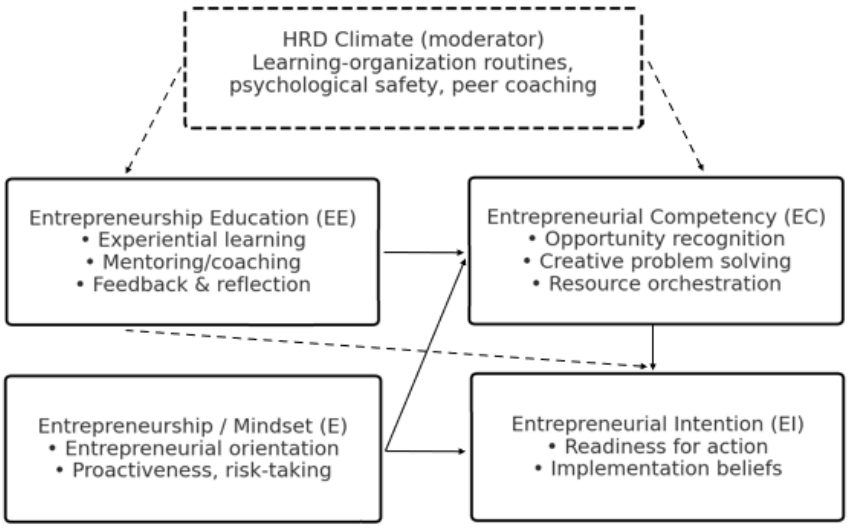

Figure 1. HRD Conceptual model diagram.

2.3.4. Quality appraisal and reliability

Two reviewers independently appraised included studies using the MMAT (Mixed Methods Appraisal Tool). Disagreements were resolved via discussion; inter-rater agreement achieved Cohen's κ = [insert] at full-text stage.

2.3.5. Synthesis approach

We employed narrative synthesis with vote-counting on direction of effects, structured around three linkages—(i) entrepreneurship education → entrepreneurial competency; (ii) entrepreneurial competency → entrepreneurial intention; (iii) direct paths from entrepreneurship education and entrepreneurship (mindset/EO) to intention—interpreted through an HRD lens (competency-based development, experiential learning, and learning-organization principles).

3. Relationship between university student entrepreneurship and entrepreneurship

Some people may be happier to work in a systematic environment where they perform tasks at the direction of others, but the ability to exercise entrepreneurship in the world today is becoming increasingly important in many work environments (D'Intino et al., 2007). Individual entrepreneurship in this environment is a phenomenon that appears as a result of career choice (Katz, 1992). Since a university student who is at the crossroads of career choice demonstrates entrepreneurship to start a business, it will have greater significance than other people starting a business. Entrepreneurship is defined as 'the ability and attitude of an individual to recognize opportunities, organize resources, and create innovative value by taking uncertainties and risks'.

The start-up activities of university students will play an important role in the national economy by enabling job creation and activating corporate activities and innovation by producing better products and services. In this context, many universities currently operate various start-up-related businesses. For example, entrepreneurship education, start-up fund support, and commercialization support consulting are operated, and the university needs to make efforts to systematically carry out projects that maintain the direction of youth start-up support policy, improve entrepreneurship, and support early start-up preparation. Among the determinants of entrepreneurship, environmental, policy, and organizational characteristics are difficult to control, while personal characteristics can be improved and developed through education, a study of entrepreneurship targeting university students who can be educated to improve entrepreneurship and prepare for start-ups early is significant in terms of spreading entrepreneurship (Naffziger et al., 2003).

Fostering innovative entrepreneurs is a policy task promoted by many countries, and by presenting various start-up-related policies, it supports young people to demonstrate their potential start-up abilities (Sololmon et al., 2002; Katz, 2003). If there are enough potential entrepreneurs who lead start-up activities by exerting entrepreneurship when given a start-up opportunity, local communities, organizations, and groups will have elasticity (Bygrave, 1993). Fostering entrepreneurship of university students who are potential entrepreneurs is an important issue not only in

the individual meaning of entrepreneurs in terms of job selection, but also in the organizational sense to secure resilience in groups and society.

In other words, entrepreneurship is defined as the ability and attitude of an individual to recognize opportunities, organize resources, and create innovative value by taking uncertainties and risks (Lumpkin & Dess, 1996). University students' entrepreneurship acts as an important prerequisite in forming perceptions and motivations for entrepreneurship, and in particular, psychological factors such as innovation, self-efficacy, and independence become the starting point of entrepreneurship behavior (Krueger et al., 2000).

Looking at previous studies on entrepreneurship, we can understand the importance of the preceding factors to improve entrepreneurship in terms of integrated efforts in individual thinking and behavior to take risks and seize new opportunities (Eesley & Lee, 2021; SSchimperna et al., 2021; Maritz et al., 2022; Mele et al., 2022; Donaldson et al., 2024; Lyu et al., 2024; Matoug et al., 2024; Overwien et al., 2024; Pepin et al., 2024; Soeharto et al., 2025).

From the HRD perspective, entrepreneurship is not simply a means of creating economic results, but rather a capacity to promote self-directed learning and self-managed care development (Gibb, 2002). This is an important psychological and behavioral resource that enables the development of individual potential and sustainable growth that HRD aims for, and in particular, it allows it to grow into an 'employment creator' beyond 'employability' in the rapidly changing labor market. Therefore, developing the entrepreneurship of university students goes beyond simply encouraging start-ups, and is closely linked to strengthening self-development capabilities, one of the core objectives of HRD. To this end, at the organizational (university) level, entrepreneurship is viewed as a learning competency and the creation of a learning environment and culture that can internalize it is required.

Strategic cooperation between universities and companies functions as an effective platform for fostering entrepreneurship talents. From an HRD perspective, this cooperation is designed in a way that narrows the gap between theoretical knowledge and practical competencies and lays the ground for practice-based learning. For example, in the industry-academia cooperation program, companies directly participate in the university curriculum to develop practical educational content and provide practical start-up experience and innovation experience within the organization to prospective talents through field training and internships. In particular, in a cooperative model designed based on learning organization theory, universities provide learner-centered entrepreneurship education through problem-based learning (PBL) or project-based learning, and companies contribute to realizing the educational effect through mentoring, start-up incubation, and technical advice (Senge, 1990; Rae, 2006). This is the basis for realizing the virtuous cycle structure of personal capacity building and organizational learning emphasized in HRD.

In addition, entrepreneurship education is actively being conducted to enhance the creativity and innovation of employees within the existing organization, which is closely connected to in-house entrepreneurship. In particular, HRD plays a key role in creating an innovation culture within the organization through educational programs that strengthen the ability to adapt to changes, sense opportunities, and problem-solving capabilities of members of the organization. The following elements are

included in the model of entrepreneurship education at the organizational level. First, competency-based training design develops competency frameworks centered on creativity, planning, and collaboration capabilities, and structures educational content. Second, the experiential learning model emphasizes practice-based learning through real work projects or in-house start-up programs (Kolb, 1984). Third, the feedback-oriented learning culture supports members to learn autonomously and develop leadership through mentoring, coaching, and feedback systems. In addition, recently, blended learning models using digital technologies, simulation-based education, MOOC, and AI-based customized education systems have also been introduced into entrepreneurship training, leading to an innovative transformation in HRD (Parkes & Rezania, 2022; Faeni et al., 2023; Ye et al., 2023; Ho et al., 2024).

4. The relationship between university student start-up and entrepreneurship education

Entrepreneurship Education is defined as a series of educational courses that convey knowledge, skills, and attitudes related to entrepreneurship to students, and it acts as an important institutional factor in enhancing university students' ability to form and execute their will to start a business (Fayolle & Gailly, 2008). In addition, entrepreneurship education aims to promote entrepreneurship skills and entrepreneurship by promoting entrepreneurial motivation to prospective or potential entrepreneurs and conveying entrepreneurship-related knowledge, skills, and attitudes that affect the success or failure of entrepreneurship (Clark, et al, 1984; Fayolle, et al., 2006; Ertuna & Gural, 2011). If a founder starts a business without having the knowledge and skills required for initial business operation, the likelihood of failure will inevitably increase. Therefore, it is important to teach related knowledge and skills through entrepreneurship education, and to explore business ideas and foster self-directed life attitudes (James, 2000). Previous studies have emphasized that start-up education has a practical effect on attitude change and behavioral intention beyond simple information delivery (Kuratko, 2005; Berggren, 2021; Hanandeh et al., 2021; Iwu et al., 2021; Kim, 2021; Carpenter & Wilson, 2022; Egwakhe et al., 2022; Jamshidi & Shafiee, 2023; Alkaabi & Senghore, 2024; Hardini et al., 2024; Karani et al., 2024).

Looking at the preceding studies in detail, it is revealed that entrepreneurship education has a positive effect on the willingness of university students to start a business. For example, it can be seen that the number of entrepreneurship education and the experience of entrepreneurship education have a significant effect on the entrepreneurship willingness of university students, and the educational content and self-learning motivation of entrepreneurship education have a positive effect on the entrepreneurship willingness (Solesvik et al., 2014). Pittaway & Cope (2007) conducted a survey of 892 university students and argued that entrepreneurship education in universities promoted entrepreneurship willingness to start a business after taking courses related to entrepreneurship. In addition, a number of previous studies related to entrepreneurship education emphasize the importance of entrepreneurship education in universities, and argued that there is a difference in behaviors and attitudes related to entrepreneurship between participants in

entrepreneurship education and non-participants. Fayole & Gailly (2015) said that discussions on the effectiveness of entrepreneurship education are dominated by justifiable arguments, and specific and empirical research results are still scarce. There are mixed opinions on how entrepreneurial education in universities affects the entrepreneurial capacity, attitude, and willingness of university students who are consumers, but some studies on the relationship between entrepreneurship education and entrepreneurship will have failed to identify the relationship between each other or even had a negative effect (Pittaway & Cope, 2007; Wu & Wu, 2008; Oosterbeek et al., 2010; Rodrigues et al., 2012).

Through other preceding studies and experiences, it has been verified that entrepreneurship education and programs have a profound effect on the entrepreneurial intention and practical entrepreneurship of university students (Audet, 2000; Peterman & Kennedy, 2003; Soutari et al., 2007). Graduates who received entrepreneurship education during university students were found to be more likely to self-employment and have higher annual income than graduates who did not. In addition, it was found that they were more satisfied with what they were doing. According to a study by McMullan et al. (1985), Canadian MBA students, who account for a high percentage of entrepreneurship, were found to be students who took entrepreneurship courses or more than three times. According to a study by Kennedy et al. (2003), it was found that if entrepreneurship-related programs or policies grow and develop entrepreneurial behavior, they have a very decisive effect on the formation of individual entrepreneurial intentions. Izedonmi & Okafor (2010) investigated the relationship between entrepreneurship intention and entrepreneurship education through empirical research and found that entrepreneurship education had a positive effect on students' entrepreneurship intention. In addition, it was found that the university's start-up-related programs had an important influence on the intention or attitude to induce start-up intention.

There are many studies that show that entrepreneurship education has a direct effect on entrepreneurship, but there are also many studies that show that a person's mindset or thoughts change through entrepreneurship education, and that this creates a change in entrepreneurship or self-employment. Clark et al. (1984) opened entrepreneurship lectures at mid-size American universities and surveyed the students who took them, and found that about 80% wanted their own business, and about three-quarters of the students had experience in writing specific entrepreneurship plans. In addition, 76% of students were found to have mentioned that entrepreneurship education had a great or very great influence on their entrepreneurial decisions. In the case of the UK, it was also found that the majority of those who completed entrepreneurship-related programs had intentions for entrepreneurship. And this enthusiasm can be understood to have an important influence on entrepreneurship activities in the end (Brown, 1990).

In addition to the studies and effects that start-up education or programs can directly affect the intention to start a business, there are also many studies that have analyzed the impact of start-up education or programs from a different perspective. Looking at the contents, it is emphasized that start-up education should focus on developing the spirit of challenge, creativity, flexible thinking, and imagination, and in addition, it is necessary to focus on developing the ability to detect changes that can

capture social changes and trends and seize opportunities (Drucker, 1995; Bygrave & Zacharakis, 2004; Timmons & Spinelli, 2004). In other words, the goal of entrepreneurship education is not necessarily limited to entrepreneurship, but it is necessary to focus on fostering reformative talents who can discover new paths by acquiring individual competencies and various skills and developing opportunity capture capabilities.

Entrepreneurship may or may not be realized through these capabilities. On the other hand, according to another study, it was found that entrepreneurship education or entrepreneurship-related programs had a significant effect on the degree of entrepreneurship or entrepreneurship, while general business education did not (Hostager & Decker, 1999). University entrepreneurship education is the same as a company building a simulated environment composed of various resources and entrepreneurship resources in the entrepreneurial process. In the development process, it is necessary to form a entrepreneurship education resource system that faces the resources of various actors of schools, governments, and companies and meets various entrepreneurship demands.

From the theoretical framework of HRD, start-up education should be based on philosophy and methodology such as competency-based education, experiential learning, and learning organization, not just classes (Marsick & Watkins, 1990). These are very important theoretical facts from the HRD perspective. In order for start-up education to expand into the practical domain of HRD, practical learning design such as problem-based learning (PBL), simulation, action learning, and mentoring is essential beyond knowledge-based education. In addition, HRD values the learner's change and growth process itself, which means that the effect of start-up education should appear as long-term career development and autonomous capacity building, not as a short-term start-up rate. Therefore, university start-up education should be designed as a learner-centered and execution-oriented strategic education system based on the principles of HRD.

5. The relationship between university student entrepreneurship and entrepreneurship competency

The concept of competency was introduced to measure or predict individual performance and can be said to be an individual characteristic that can be used in common in various occupations or roles. Most of the research on competencies related to start-ups has been studied along with start-up performance (Wiklund & Shepherd, 2005; Cooper, 2013). Significant results were derived for many competency factors by defining personal or organizational competencies related to start-ups and examining the relationship with performance such as sales of start-ups.

Existing studies have defined individual competencies related to start-ups as 'start-up competencies' and conducted research. Looking at the concept of start-up competency, it can be seen as the specific ability of entrepreneurs necessary for securing resources and organizing necessary to create and grow an organization for start-ups. In addition, Baum et al. (2001)

In addition, Baum et al. (2001) used start-up competency as a concept to measure the overall ability to successfully perform a start-up. The elements that constitute start-

up competency are set slightly differently depending on the researcher. Chandler & Jasen (1992) measured the entrepreneur's opportunity cognitive ability, business promotion ability, conceptual, interpersonal, and political ability by dividing it into professional technical skills, and Chrisman et al. (1998) classified the founder's successful competency into organizational competency, strategy reversal, technical competency, and creativity competency.

Looking at many preceding studies, we understand that entrepreneurs and founders' entrepreneurial competency is an essential competency in managing a company (Ghina, 2014). Bird (1995) cited entrepreneurial competency as the ability to increase value by individual entrepreneurs finding opportunities and organizing resources. Other preceding studies also defined the entrepreneurial competency of university students from a different perspective. In other words, it was said that start-up competency refers to the ability of an entrepreneur or founder to manage a company. Or, it can be seen that it is the ability of an entrepreneur to create value by finding opportunities and organizing resources.

A university student's entrepreneurial competency is the ability to complete something using materials and intangible resources one by one. Therefore, in order to value ability, the human aspect of the entrepreneurial process must be considered (Danneels, 2002). There are prior studies that systematically define the concept of entrepreneurship competency of university students rather than define the entrepreneurial competency of university students, and it can be seen that various results are presented (Ferreras-Garcia et al., 2021; González-López et al, 2021; Lv et al, 2021; Okolie et al, 2021; Sakib et al, 2022; Seraj et al, 2022; Miço & Cungu, 2023; Hammoda, 2024; Somia & Vecchiarini, 2024; Rakhimova et al, 2025).

Among the studies on the compositional dimension of start-up competency in many preceding studies, it can be seen that these competency dimensions include communication ability, planning ability, operation ability, innovation ability, etc. (Ronstadt et al., 1988). Some preceding studies have extended the dimension of startup competency in the direction of individual personality characteristics and functional characteristics. Bartlett & Ghoshal (1997) discovered three types of competencies, attitude-characteristics, knowledge-experience, and skill-ability. Winterton (2002) mentioned moral behavioral ability, perception ability, learning ability, communication ability, quickness, etc., and Thompson (2004) suggested concentration, innovation ability, team ability, learning ability, and self-cognitive ability. Other previous studies have expanded the study on startup competency to a wider range and analyzed 13 types of startup competency: opportunity recognition, opportunity evaluation, risk management or mitigation, vision delivery, grit or persistence, creative problem solving, resource use, value creation based on innovation, concentration, elasticity, self-efficacy, network construction and use (Morris et al., 2013).

There are also prior studies that think that start-up capabilities can be improved. According to a study by Rasmussen et al. (2011), the founder's ability should continue to grow and there should be an opportunity to identify, utilize, and support three abilities that are very important to the development of a company. Another prior study defined university start-up capabilities from various angles. In a study by Chandler & Jansen (1992), it was suggested that founders should include six aspects of opportunity identification capabilities, corporate management capabilities, technology and

conversion capabilities, employee management capabilities, political capabilities, and technical capabilities from the perspective of their role in the company. In addition, it was said that the start-up capabilities of university students could surpass seven competencies, self-determination capabilities, cooperation capabilities, opportunity capabilities, frustration tolerance, decision-making capabilities, and planning capabilities.

Entrepreneurship Competency is a concept that encompasses the behavioral and cognitive abilities required in the start-up process and includes problem-solving ability, opportunity awareness ability, resource organization ability, interpersonal skills, complex competencies such as opportunity capture ability, innovation, decision-making ability, and resource management ability (Mitchellmore & Rowley, 2010). This is very important in that it is not just knowledge or attitude, but a comprehensive behavioral ability that enables practical start-up execution. One of the core concepts of HRD is the development of 'competency'. HRD systematically defines the abilities necessary to improve an individual's job performance and designs education and training, coaching, and feedback systems to develop them (Swanson & Holton, 2001). Unlike traditional job competencies, start-up competency is key to problem-solving ability in unstructured situations, creative thinking, and opportunity creation ability, which is even more important in modern society where uncertainty and change are common. Therefore, developing the start-up capabilities of university students is in line with the future-oriented talent development strategy pursued by HRD, which contributes not only to individual career success but also to improving the innovation capabilities of the organization and society. Accordingly, it is necessary to establish competency-oriented performance indicators when designing start-up education and programs, and to establish a continuous monitoring and feedback system for learners' growth trajectories.

The specific emphasis between HRD's perspective and The Relationship Between University Student Entrepreneurship and Entrepreneurship Competency is as follows. (1) HRD framing of competency. Within HRD, competency is not merely a trait but a learnable, observable capability expressed through behavior under uncertainty (problem framing, opportunity recognition, resource orchestration, customer discovery). Positioning entrepreneurial competency as a developmental outcome aligns start-up education with competency-based HRD systems (competency frameworks, rubrics, coaching, and feedback loops). (2) What education builds which competencies. Evidence indicates that experiential modalities (PBL, action learning, internships, incubators) and self-directed learning (goal setting, reflective journaling, e-portfolios) most effectively grow opportunity recognition, creative problem solving, and resource mobilization. HRD adds mechanisms: deliberate practice (scaffolded, feedback-rich repetitions), mentoring/coaching, and learning-organization routines (after-action reviews, peer clinics) that close the loop from knowledge to enacted skill. (3) Operationalisation and assessment. For program evaluation, we recommend a competency rubric spanning: (a) opportunity skills (scanning, evaluation), (b) design/innovation (problem reframing, prototyping), (c) venture orchestration (resource access, networking, effectuation), and (d) adaptive self-regulation (grit, reflective learning, ethical judgment). Multiple measures - performance tasks (e.g., opportunity briefs), behavioural observations, and mentor ratings - provide

triangulated evidence superior to self-report alone. (4) Boundary conditions. Competency gains vary by HRD climate (mentor density, feedback quality), disciplinary background, and equity factors (access to networks/capital). HRD practices can mitigate disparities via structured networking labs, inclusive mentoring, and micro-grants.

6. The relationship between university student entrepreneurship and entrepreneurship intention

Ajzen (1991)'s Theory of Planned Behavior and Shapero & Sokol(1982)'s Model of Entrepreneurial Event are representative theories explaining the concept of entrepreneurship intention. In the planned behavior theory, three factors influence behavioral intention: attitude toward behavior, subject norm, and perceived behavioral control. It was applied to entrepreneurship behavior and entrepreneurship intention by Krueger (1993), and Liñán & Chen (2009) presented a revised model and published 'Entertainment Inquiry' to provide a standard research tool for entrepreneurship intention. In addition, Shapero & Sokol (1982) presented three factors as major explanatory factors for entrepreneurship intention: individual hope, perceived feasibility, and propensity to act, and verified the model through empirical research (Ngugi et al., 2012).

A start-up begins with an entrepreneurial intention that represents one's own evaluation of the possibility of a prospective founder's voluntary start-up in the future. Entrepreneurship intention can be said to be 'a concept that self-evaluates the possibility of a prospective founder's future start-up rather than an immediate start-up behavior'. In other words, intention is a variable that accurately predicts and explains whether a specific behavior is executed, and refers to the intention to try something or an effort to prepare an action in a specific way (Ajzen, 1991). Therefore, entrepreneurial intention can be said to be an essential element for concretely implementing future entrepreneurship. Bird (1988) said that the intention to start a business is the behavior and attitude of interest and exploration, execution of self-employment, and the attitude of mind without being employed by an existing organization. Crant (1996) defined entrepreneurial intention as an individual's desire to search for opportunities and own his or her own business by judging the possibility of starting a new business, and Krueger et al. (2000) said that it was the desire of people to start a business.

Many studies have been conducted because the factor influencing the entrepreneurial intention is the most important concept in understanding the entrepreneurial process (Krueger & Brazeal, 1994). Bygrave (1989) and Robinson et al. (1991) stated that people with high entrepreneurial disposition, intrinsic control position, risk-seeking disposition, self-confidence, desire for achievement, resistance to ambiguity, and innovation have entrepreneurial intention. Naffziger et al. (1994) cited personal environment, individual goals to be pursued through entrepreneurship, business environment (social perception of entrepreneurship, ease of obtaining funds), and specific business ideas as factors affecting entrepreneurship. Gnyawali & Fogel (1994) include government policy, socioeconomic conditions, start-up and

management technology, financial support, and non-financial support as environmental factors affecting entrepreneurship.

In this way, the factors influencing the intention to start a business are mainly divided into personal characteristics and environmental characteristics. Entrepreneurship is achieved through the interaction of individual characteristics and the environment, and entrepreneurs are influenced by the interaction of various environmental factors inside and outside (Greenberger & Sexton, 1988). In addition, it can be seen that various studies have been conducted on the intention to start a business related to the start-up of university students and claim various results (Lu et al., 2021; Shahzad et al., 2021; Su et al., 2021; Barba-Sánchez et al., 2022; Soomro & Shah, 2022; Maheshwari et al., 2023; Murad et al., 2024; Overwien et al., 2024; Bhinder & Kaur, 2025; Ho et al., 2025).

Taken together, Entrepreneurship Intention is a psychological state that implies the possibility that an individual will start a business in the future and is regarded as one of the strongest predictors of entrepreneurship behavior (Ajzen, 1991). Entrepreneurship intention is influenced by various factors such as entrepreneurship, self-efficacy, entrepreneurship experience, and entrepreneurship education, which in turn suggests the possibility of leading to individual actual entrepreneurship behavior as defined earlier (Krueger et al., 2000). From the perspective of HRD's change theory and learning theory, entrepreneurship intention can be interpreted as an initial indicator of behavioral change that is formed and changed through learning, not a simple attitude. HRD plays a role in facilitating a series of processes in which learners recognize the need for change and convert it into their own behavior. In this process, entrepreneurship intention is an important mediating step in converting into behavior, and in order to reinforce this, education, feedback, coaching, and learning community must be systematically designed (Yang, 2004). In addition, entrepreneurship intention can also be used as an index for evaluating HRD's performance. From an HRD point of view, it is more appropriate to track learners' continued interest in and willingness to implement a start-up rather than realizing a short-term start-up. Therefore, it is important to regard start-up intention as a degree of progress in learning outcomes, not just psychological factors, and to design follow-up learning and intervention strategies accordingly.

The specific emphasis between HRD's perspective and The Relationship between University Student Entrepreneurship and Entrepreneurial Intention is as follows. (1) Intention as a learning outcome. From an HRD standpoint, intention is a proximal indicator of behavioral readiness—formed through learning experiences that shift attitudes, perceived control (self-efficacy), and subjective norms. Programs that embed guided mastery experiences (small wins), role-model exposure, and social persuasion (mentor feedback) reliably move these levers. (2) Mechanisms linking competency to intention. Competency strengthens self-efficacy and implementation beliefs, converting abstract interest into feasible action plans. Reflection, portfolio evidence, and mentor sign-offs help students recognize their capability gains—an HRD mechanism that consolidates intention. (3) Moderators and equity. Intention formation is moderated by HRD climate, gendered norms, and field of study. Intentional HRD design—psychological safety, inclusive peer feedback, and identity-safe pedagogy—supports under-represented students' intention gains. (4)

Measurement guidance. Pair standard EI scales with competency artefacts (validated rubrics) and behavioral proxies (pre-incubation applications, pitch participation), capturing HRD-consistent progress, not only self-reports.

7. Conclusion

This study comprehensively examined the relationship between entrepreneurship, entrepreneurship education, entrepreneurship competency, and entrepreneurship intention, which are major variables influencing university student start-ups, from a theoretical point of view.

As a result of analyzing existing studies, the following main results were derived. First, entrepreneurship was identified as a key psychological factor that directly affects the entrepreneurship intention of university students, and in particular, sub-factors such as innovation, risk-taking, and self-efficacy were found to have a significant positive relationship with entrepreneurship intention. Second, entrepreneurship education directly increases entrepreneurship intention, but more strongly, a structure that indirectly affects entrepreneurship intention through entrepreneurship competency has been proposed in a number of studies. This suggests the importance of long-term practical learning and experience-based education rather than the short-term educational effect. Third, entrepreneurship competency acts as a practical behavior-based variable explaining entrepreneurship intention and serves as a catalyst for realizing the effect of entrepreneurship education. In particular, competencies such as problem-solving ability, opportunity awareness, and resource management ability were found to be important foundations for actual entrepreneurship execution. Fourth, from an HRD perspective, these variables were closely linked to self-directed career development, competency-based talent development, and sustainable education design based on learning organizations, not just startup-related factors.

Taken together, the findings of prior studies are as follows. (1) Entrepreneurship education often increases entrepreneurial intention, with stronger and more durable effects when it builds competencies through experiential learning. (2) Entrepreneurial competencies (opportunity recognition, creative problem solving, resource orchestration) are central, mediating education's impact on intention and subsequent action. (3) Entrepreneurship/mindset exerts direct effects on intention and indirect effects via competency growth.

Along with these facts, this paper has the following own contributions. (1) HRD Integration. We re-interpret student entrepreneurship through an explicit HRD lens—competency-based development, learning-organization routines, and coaching/mentoring—as the mechanisms that make education effective. (2) Conceptual Model. We provide a testable, HRD-informed model (**Figure 1**) specifying mediation (competency), moderation (HRD climate), and boundary conditions for program design and evaluation. (3) Actionable HRD Design Principles. We translate evidence into program-level choices (assessment rubrics, reflective practice, mentor calibration, after-action reviews) that institutions can implement. (4) Methodological Strengthening. We document a transparent review protocol (databases, keywords, eligibility, appraisal), improving replicability and future meta-analytic cumulation.

8. Implications and suggestions

Based on the results of the study, this study has the following implications. First, this study attempted theoretical integration by interpreting entrepreneurship within the HRD framework, deviating from the tendency that existing entrepreneurship research has mainly approached 'economic revitalization' or 'policy implementation'. Second, by organizing the relationship between entrepreneurship and entrepreneurship intention and the role of entrepreneurship competency as a parameter of entrepreneurship education, the basis for designing variables and establishing a path model in future empirical studies was provided. Third, university entrepreneurship education needs to move away from theory-oriented lecture-type content and reinforce practical learning such as problem-oriented learning (PBL), action learning, mentoring, and internships. Fifth, it is necessary to integrate university student entrepreneurship into an HRD strategy based on competency development rather than one-time support and link it to long-term talent training policy. Sixth, the government and local governments' start-up support policies require start-up education and HRD-based program integration support, away from the center of financial support

Based on the results and implications of this study as above, the following contents are suggested. First, HRD elements are integrated when designing a start-up education curriculum. It is necessary to include HRD elements such as self-directed learning, career development counseling, and competency-based feedback system, away from providing simple start-up information. The introduction of leadership training into the entrepreneurship education program will have practical significance in that students can better cope with entrepreneurial work needs and learn how to reduce failures and abandonments. Neck et al. (2013) argued that it is necessary for entrepreneurs to develop leadership intervention programs that help reduce failures and abandonments of new venture companies and the ability to cope with various demands, as they know that many venture companies end in failure. In addition, D'Intino et al. (2007) suggested that both early entrepreneurs and experienced entrepreneurs should spend time getting more familiar with the concept of leadership. Therefore, if entrepreneurship and leadership training programs and curriculum are developed that provide students with entrepreneurship with opportunities to become active and competent in taking risks through the academic environment, they will be able to respond better to the demands of the profession of entrepreneurship in terms of career choice (Neck et al., 2013). In addition, it is necessary to provide opportunities for university students to build networks as a way to further strengthen entrepreneurship, and to support them to improve networking behavior that can form, maintain, and develop networks based on leadership. It will be practically necessary to introduce and develop networking behavior education for network building along with leadership in the entrepreneurship training program in terms of effectively nurturing entrepreneurs. Second, develop a competency-based evaluation tool. Beyond measuring the outcome of start-up education by simple participation or start-up realization rate, a systematic evaluation of students' change in start-up competency and learning growth process is needed. In start-up education, attention should be paid to the training of university students' good start-up self-efficacy, start-up attitude, and subjective norms, and universities must cultivate the behavioral characteristics of

university students in various forms such as the establishment of the relevant educational stage, corporate practice activities, various support activities from the government, and psychological counseling. Third, it is necessary to cultivate the start-up competencies of university students in multiple dimensions. It is necessary to focus on cultivating the core competencies of start-up of university students, such as self-control ability, management ability, innovation ability, learning ability, and opportunity ability. In line with the need to cultivate this core competency, universities should actively create conditions to foster customized resources by effectively converging the three resources of the government, universities, and companies. In addition, in start-up education for university students, it is necessary to first strive to cultivate a start-up attitude and start-up spirit. Universities make the most of the advantages of the convergence of resources of the government, universities, and companies, and introduce various types of excellent corporate culture into the lecture halls and activities of universities so that university students can inherit and transform their entrepreneurship with the inspiration of excellent corporate culture. Realizing the importance of a positive start-up attitude in the start-up process is an important prerequisite for improving start-up capability. Organizational culture and institutional arrangements should be prepared so that start-ups can be recognized as part of growth and learning, not as failures and burdens. Fourth, strengthen the HRD capabilities of instructors and mentors. Educators also need expertise to understand and practice entrepreneurship and HRD perspectives at the same time, and training and network construction must be carried out in parallel.

Despite such academic and practical implications and suggestions, this study needs the following research. First, it is necessary to expand empirical research. Since this study has a limitation in that it is a theory-centered literature review, it is necessary to verify the influence between variables through empirical analysis targeting actual university students. Second, long-term follow-up studies are needed. Since start-up intention can change over time, a longitudinal study is needed to track behavioral changes over a certain period of time after completion of start-up education and actual start-up realization. Third, it is necessary to develop and verify an HRD-based start-up education model. Research is required to design a start-up education model that integrates HRD theory, such as competency-based education model and adult learning theory, and to empirically evaluate its effectiveness. Fourth, research is needed that considers cultural and regional contexts. Since start-up intention and entrepreneurship may vary depending on cultural factors and regional economic environment, domestic and foreign comparative studies or regional-based studies need to be conducted in parallel.

Institutional review board statement: Not applicable.

Informed consent statement: Not applicable.

Conflict of interest: The authors declare no conflict of interest.

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