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The Development of Prospective Teachers' Entrepreneurial Competencies Based on Importance Performance Analysis (IPA)

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Abstract

This study aims to analyze prospective teachers' map of competency development; the effectiveness of the substance of education in various fields of study that supports the strengthening of prospective teachers' entrepreneurial competencies and skills (startup businesses) after graduation; and the suitability of students' entrepreneurial competency development quadrant. Methodologically, this study used survey method. It involved 1.298 third and upper semester students of University of Mataram's Faculty of Teacher Training and Education (FKIP), who were determined using accidental proportional sampling. The dimensions and the instruments of this research were adapted from the instruments developed by Bikse and Reimera, which include: ability to learn and act independently, set goals and act in a creative way, ability to analyze and plan further action, to take the initiative and responsibility, cooperate and work in a team, assess and classify the information, and find the problem and plan the solution. All data were analyzed using descriptive analysis and Importance Performance Analysis (IPA). The results of the study indicate that efforts to strengthen entrepreneurial competencies, especially in selecting, summarizing, and presenting informations, have been made. However, the skills required to take initiative and direct personal responsibility are still not sufficiently developed. The findings of this study also show that prospective teachers are not completely well-prepared for the challenges in the labor market. Prospective teachers acquired moderate or even low-level theoretical knowledge and practical skills. This is confirmed by the results of Importance Performance Analysis which demonstrate that the entrepreneurial competency development is yet to be optimal. Almost all aspects of entrepreneurial competency development fall within quadrant I.

Keywords: Entrepreneurial competencies; Evaluation; Importance performance analysis

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INTRODUCTION

'Freedom to Learn' policy from Ministry of Education and Culture of Indonesia, is in fact a form of actualization of the changes in the learning paradigm from mastering competencies to acquiring skills, based on the needs of the world of work and industry. Apart from that, the competitiveness of graduates is determined by the graduates' ability to start a new enterprise or business. These two parameters can only be achieved if the learning process in higher education focuses on the strengthening of entrepreneurship. This is since entrepreneurship is a significant factor for the nation's competitiveness (Lee & Peterson, 2000) as well as the main agent driving economic change (Acs & Amorós, 2008; Koellinger & Roy Thurik, 2012). Moreover,

entrepreneurs are always bounded to creativity and innovation in creating a new enterprise or business (Scarborough et al., 2011). Chell (2007) emphasizes that the entrepreneurial process is related to the pursuit of opportunities through economic and social value creation. The entrepreneurial process includes "all functions, activities, and actions related to the recognition of opportunities and the creation of organizations to pursue those opportunities" (Bygrave & Hofer, 1992), in order to create value through innovation (Antoncic & Hisrich, 2003), under conditions of high uncertainty and dynamic global environment (Balan & Metcalfe, 2012). In line with Bygrave and Hofer (1992), Baron (2008) and Barron et al. (2017) identified five aspects of entrepreneurial process that are relevant to new business success, namely: opportunity recognition, resource acquisition, social network development, effective response to a highly dynamic environment, and stress tolerance. This means that universities are consistently driven towards actual changes in mindset towards entrepreneurial attitudes, and this starts with instilling entrepreneurial behavior, apart from, indubitably, entrepreneurial competence and spirit (Bikse & Riemere, 2013).

The strengthening of entrepreneurial competencies is a main pillar if one intends to create competitive graduates. This is based upon the fact that entrepreneurial competencies are the integration of an individual's abilities, qualities, and personal skills in ensuring successful entrepreneurship (Bikse et al., 2014; Bikse & Riemere, 2013). Entrepreneurial competencies can include: opportunity, relationship, conceptual, organizational, strategic, and commitment competency (Man et al., 2002; Murwani, 2016). Opportunity competency is related to the identification and development of various market opportunities; relationship competency is related to the interaction among individuals as well as between individuals and groups/community in Universities; conceptual competency is related to the ability to make decisions, absorb complex information, and take risks; organizational competency is related to organizing a number of human resources, all internally and externally, physically, financially, and technologically; strategic competency is related to developing and evaluating strategies (competitive strategies, marketing strategies, etc.); and commitment competency is related to encouraging school community (prospective entrepreneurs) to progress with the business that is to be developed (Man et al., 2002). Meanwhile Bikse (2011) identified entrepreneurial competencies as encompassing: creativity and innovativity competency communication competency, organizational competency, project management, action planning and risk-taking skills, vulnerabilities, as well as knowledge and skills needed to build new companies and transform practical ideas in a successful development.

Those thoughts lean towards interpreting entrepreneurial competency as a field of economics and management, even though its core rests on creativity and innovation in creating a new enterprise or business. On this basis, Bikse and Riemere (2013) present entrepreneurial competencies for all fields of science in the form of 7 (seven) abilities, that is: ability to learn and act independently, set goals and act in a creative way, ability to analyze and plan further action, to take the initiative and responsibility, cooperate and work in a team, assess and classify the information, and find the problem and plan the solution. It seems that the results of the study by Bikse and Riemere (2013) are relevant to the objective of this study since both are related to entrepreneurial competencies for prospective teachers. Therefore, this study also adapts the results of said study by Bikse and Riemere (2013).

These entrepreneurial competencies are developed in the process of obtaining knowledge, skills and experience through entrepreneurship education process. The problem is that entrepreneurship education is narrowly understood as merely encompassing business activities and learning activities in an economics course (Bikse & Riemere, 2013). In this context, one should consider not only the development of entrepreneurial competencies of those who have decided to link their future professional life with economics and/or management, but also the objective of entrepreneurship education which is to promote creativity, innovation and start-up businesses (Cedefop – European Centre for the Development of Vocational Training, 2011). This implies that it is the duty of higher education institutions (especially those that produce prospective teachers) to develop students' personal qualities, characteristics, and abilities, which becomes the characteristics of entrepreneurial competencies. Therefore, entrepreneurship education must be integrated (included) in all fields of study/science during the study, thereby substantially changing the course content.

Since entrepreneurship is always related to creativity and innovation (Scarborough et al., 2011), its learning evaluation must use not only an educational approach, but also an economic approach. One alternative is to evaluate using Importance Performance Analysis (IPA) (Martilla & James, 1977). IPA is widely used in marketing (Oh, 2001), but its application has expanded to various fields, including tourism (Hong et al., 2020; Hwang & Lee, 2019; Jin & Park, 2019; Tang et al., 2019; Taplin, 2012; Wade & Eagles, 2003; Wang et al., 2012); hospitality industry (Jang et al., 2009; Nien-Te Kuo, 2011); e-business (Levenburg & Magal, 2004); restaurant service innovation (Ogunmokun et al., 2020); and socioeconomic field (Hwang & Lee, 2019; Popa & Ştefan, 2019). Therefore, IPA is an important means of promoting the development of marketing programs, market opportunities, and the business itself because it can increase effectiveness in making strategic decisions (Silva & Fernandes, 2011), identifying service management's attributes, strengths and weaknesses that should be improved (Abalo et al., 2007), initiating further investigation of the root causes of customers' lack of satisfaction (Lai & Hitchcock, 2015), and providing recommendations for practical steps/improvements (Dwyer et al., 2012). Thus, IPA is an effective evaluation tool that is easy to implemen. In addition, it provides direct data visualization and identifies priority areas (Hong et al., 2020; Taplin, 2012).

IPA has not been widely used for educational and learning evaluation. Several studies in education focus on courses (Cladera, 2021; Ford et al., 1999; Huybers, 2014; Lewis, 2004; Ortinau et al., 1989); curriculum (Byun et al., 2018; Daud et al., 2011; Nale et al., 2000; O'Neill & Palmer, 2004); general learning environments (Alberty & Mihalik, 1989); and educational service quality (Chen, 2018; Hanssen & Mathisen, 2018; Nien-Te Kuo, 2011; Silva & Fernandes, 2012). According to the results of a study by Siniscalchi, et.al. (2008), in the world of education, IPA serves as an important evaluation tool for educators' performance, especially of those who do not reach the target, and it can help modify the curriculum according to students' needs. Apart from that, IPA can also map students' abilities within their fields (McLeay et al., 2017), and thus the students can be designed so as to have the creativity needed in the world of work (Silva & Fernandes, 2012).

On that basis, this study was conducted with the objectives of: (1) analyzing prospective teachers' map of competency development; (2) analyzing the effectiveness of the substance of education in various fields of study that supports the strengthening

of prospective teachers' entrepreneurial competencies and skills (startup businesses) after graduation; and (3) analyzing the suitability of students' entrepreneurial competency development and field of study educational content quadrant. The current study focus on prospective teachers, as higher education institutions have a duty to develop their personal qualities, characteristics, and abilities, and prepare them for the future of work and industry (De Prada et al., 2022). The study's significance contribute to the literature on entrepreneurship education, specifically in exploring the effectiveness of integrating entrepreneurship education in all fields of study/science during the study, and evaluating it using an IPA approach. The findings will provide insights into how higher education institutions can prepare their students for the future of work and industry and create graduates who are competitive, creative, innovative, and entrepreneurial. Additionally, the findings will help policymakers in higher education institutions to make informed decisions regarding the integration of entrepreneurship education in the curriculum.

METHOD

Types of Research

This study used survey method (Ary et al., 2010). Using this survey, the researcher intended to qualitatively and quantitatively explore, study, and organize information in a systematic, in-depth, and comprehensive manner to answer the research objectives by using mailed questionnaires, electronic or internet questionnaires, and directly administered questionnaires in addition to using documentary study.

Population and Sample

The population of the research consisted of all third and upper semester students of University of Mataram's Faculty of Teacher Training and Education (FKIP). Based on the data from FKIP Unram (FKIP Unram, 2016), there were 5.845 graduates. The number of the sample was determined using the Slovin's formula. Based on the calculations, the minimum number for the sample was 374.37 or rounded up to 374 people. Since the population came from various fields of science, the samples were taken using accidental proportional sampling, whereby all selected units (students) had the same probability of being taken as samples by taking into account the proportion of each study program. On that basis, this study exceeded the minimum sample with the number of respondents amounted to 1.298 students, all of whom were used as the unit of analysis.

Research Instrument

The research instrument was adapted from the instrument developed by Bikse and Riemere (2013). The questionnaire consists of 7 (seven) questions that represent the development of entrepreneurial competencies and 14 questions that are related to the evaluation of the educational content in Higher Education that leads to the formation of entrepreneurial competencies. The dimensions for the development of entrepreneurial competencies encompassed: ability to learn and act independently, set goals and act in a creative way, ability to analyze and plan further action, to take the initiative and responsibility, cooperate and work in a team, assess and classify the information, and find the problem and plan the solution. For content evaluation, the instrument also uses a questionnaire in the form of six-point Likert scale (1= no

learned, 2 = very low level, 3 = low level, 4 = medium (adequate) level, 5 = high level, and 6 = very high level). Some instances of the questions include: "The skill to make decisions, based on previous information analysis", "To develop skills in preparing documents and reports", etc.

Technical Analysis

The analysis used descriptive analysis and suitability analysis using the Importance Performance Analysis quadrant of Martilla and James (1977), as visualized in Figure 1. The criteria used are: < 20 (very not suitable); ≥ 21 and < 40 (not suitable); ≥ 41 and < 60 (fairly/adequately suitable); ≥ 61 and < 80 (suitable); ≥ 81 (very suitable).

Figure 1. Importance Performance Analysis/IPA Quadrant Analysis

RESULTS AND DISCUSSION

Results

As mentioned, the instrument for entrepreneurial competencies and evaluation of learning content used was adapted from the instrument developed by Bikse and Riemere (2013) which already met validity and reliability requirements. However, in this study, a retest was conducted using Cronbach's alpha test. The test for competency development aspect obtained a value of 0.74. As for the other aspect, that is, content for field of study, the Cronbach's alpha value obtained was 0.78. Thus, the instrument has met validity and reliability requirement, based on the criteria suggested by Nunnally (1978), that is, above 0.70. The results of the study indicate that the students have been directed towards strengthening additional skills related to entrepreneurship. However, these additional skills have not been widely targeted in all fields of study (Table 1).

Table 1. The Development of prospective teachers' entrepreneurial competencies in different study programs (%, N= 1.298)

Subject	LWI	SCE	ACF	IR	CT	ACI	IPS
Biology Education (N: 64)	40.6	31.3	28.1	57.8	64.1	45.3	45.3
Physics Education (N: 121)	27.3	21.5	20.7	50.4	58.7	29.8	32.2
Chemistry Education (N: 79)	48.1	27.8	30.4	75.9	65.8	49.4	54.4

Subject	LWI	SCE	ACF	IR	CT	ACI	IPS
Mathematics Education (N: 194)	41.2	30.9	32.0	64.4	63.4	48.5	46.4
Indonesian Language and Literature Education (N: 157)	35.0	26.8	27.4	54.1	54.8	29.9	36.9
English Education (N:130)	30.8	23.1	22.3	53.8	56.9	36.9	33.8
Primary School Teacher Education (N: 220)	35.5	26.4	30.9	54.1	58.6	43.6	39.1
Early Childhood Education (N: 124)	29.8	25.8	25.8	48.4	51.6	31.5	31.5
Civic Education (N: 131)	22.1	16.8	16.0	51.9	51.1	26.7	30.5
Sociology Education (N:78)	24.4	16.7	12.8	46.2	50.0	23.1	23.1

Note: Learning and working independently (LWI); Setting and creatively executing goals (SCE); Analyzing and constructing follow-up plan (ACF); Initiative and responsibility (IR); Collaboration and teamwork (CT); Assessing and classifying information (ACI); Identifying problems and planning their solutions (IPS)

Based on the data shown in Table 1, the skills that are mostly obtained are initiative, responsibility, collaboration and teamworks. Meanwhile, other skills have not been significantly covered. The social and humanities fields seems to not have been directed towards the establishment of these competencies or skills. Applied entrepreneurship through the educational pedagogical process has not received significant attention, which is required from the creative forces at the Study Program level.

To discover whether the students are provided with the possibility to acquire the knowledge and skills needed during college, the question that was asked to the students was "To what extent, during the study process at universities, did you obtain these knowledge and skills? Table 2 visualizes the respondents' answers.

Table 2. Students' assessment on "the extent to which they have the opportunity to acquire knowledge and skills

Knowledge and Skills	Not learned	Very low	Low	Adequate	High	Very high
A certain level of theoretical understanding	5.2	4.9	13.7	61.7	13.0	1.5
Acquiring research skills	4.6	5.1	19.7	53.7	14.5	2.4
Applying theoretical knowledge at work	6.1	5.2	18.0	50.6	17.3	2.8
Ability to process, study, analyze, and systematize information	3.1	4.2	15.9	54.5	19.6	2.7

Knowledge and Skills	Not learned	Very low	Low	Adequate	High	Very high
Providing innovative solutions to problems with different levels of difficulty	3.2	5.2	17.9	53.2	17.6	2.9
Decision making skills based on analyzed information	2.5	4.8	19.0	48.7	28.0	4.8
Developing document and report preparation skill	3.6	4.9	15.2	50.0	22.1	4.2
Ability to deliver information to public	3.2	5.5	16.9	48.0	20.3	6.1
Influencing public/mass to support one's opinions/positions	5.0	6.2	20.9	46.1	17.6	4.2
Skills acquired through working together in a team	3.1	3.5	10.5	42.6	31.7	8.6
Studying subtopics/topics/ and technical terms in a foreign language	5.9	7.6	23.9	46.4	13.9	2.3
Working on subtopics/topics using certain computer programs	6.2	6.0	20.3	49.0	15.3	3.3
Ability to plan, organize and execute one's own work	3.7	4.1	13.3	42.9	29.7	6.3
Entrepreneurial skills	2.9	6.5	19.5	43.1	21.5	6.5

Based on the evaluation, the students were equipped with theoretical knowledge, including the ability to present, evaluate, analyze and systematize information. Theoretical knowledge is crucial because theory serves as an analytical instrument for understanding the meaning of empirical facts, including in making decisions. At the same time, the acquired knowledge and skills must be put into practice. This study has revealed that there aren't many skills that are required for today's work environment in Indonesia. The results of the study also discover that the

implementation of classic teaching principles was still dominant. Not much attention has been paid to the practical side, such as students working on projects to develop skills appropriate for the labor market. Based on these data, approximately 2.9% of the respondents have not learned or acquired entrepreneurial skills at all, 6.5% are at low or very low level, and 19.5% are at intermediate level. Thus, it seems that the study in teacher-producing universities currently do not provide broad opportunities for educators to acquire entrepreneurial skills and knowledge. The findings were confirmed by IPA analysis.

The results of the analysis show that the strengthening of entrepreneurial competencies was categorized as adequate. From the data in Table 3, the division of quadrants based on the Importance Performance Analysis (Martilla & James, 1977) can be visualized as shown in Figure 2.

Table 3. Summary of the Comparison between Reality and Expectations for Entrepreneurial Competency Development

No	Component	Suitability Level	Suitability Criteria	Reality	Expectation
A1	Learning and working independently	50.26	Adequately Suitable	2.94	5.85
A2	Setting and creatively executing goals	51.76	Adequately Suitable	3.04	5.87
A3	Analyzing and constructing follow-up plan	55.20	Adequately Suitable	3.25	5.89
A4	Initiative and responsibility	72.35	Suitable	4.15	5.73
A5	Collaboration and teamwork	71.93	Suitable	4.16	5.78
A6	Assessing and classifying information	53.90	Adequately Suitable	3.22	5.98
A7	Identifying problems and planning their solutions	56.17	Adequately Suitable	3.24	5.77
	Total	58.72	Adequately Suitable	3.43	5.84

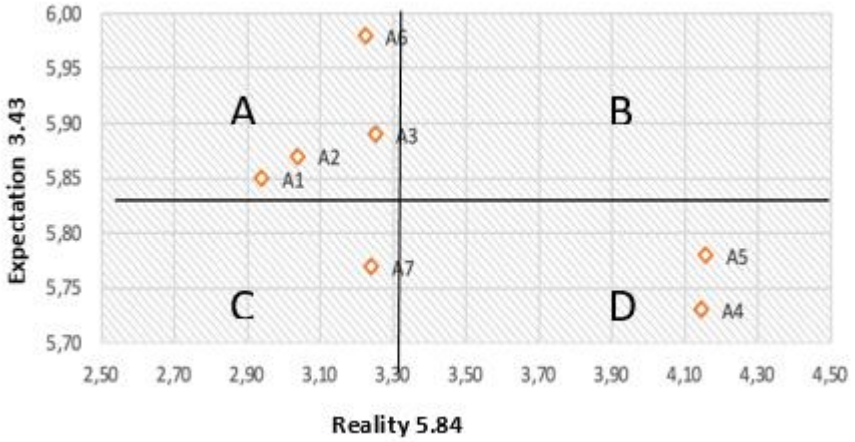

Figure 2. Entrepreneurial Competency Development Achievement Quadrant

Based on Table 3 and Figure 2, it is found that the important components, and the components that require main priority (Quadrant A) are: (a) the development of entrepreneurial competencies that lead to independent learning and work; (b) competency development that leads to how students set goals, and implement them creatively is also part of the main priority; (c) development of the ability to analyze and construct follow-up plans is prior for improvement; and (d) doing assessment and classification of information. In the respondent's perspective, the above conditions are mostly caused by the weakness of substantive learning and the lecture process that leads to the intended competence Learning content is still too focused on strengthening areas of expertise and teaching abilities as prospective teachers. In addition, the absence of curriculum reconstruction that leads to strengthening these competencies has contributed to this condition.

The component that is still considered 'weak' and needs to get second priority (Quadrant C) is the ability to identify problems and plan solutions. In fact, this competency has begun to develop, but does not specifically lead to entrepreneurship. This competency is mostly trained to strengthen teacher candidates, not to live independently. Furthermore, none of them reached the quadrant of important components that have shown good achievement/performance (Quadrant B). Furthermore, the components that are in quadrant D are considered less important by students, so that all energy and resources used in this component need to be diverted to support the achievement of components in quadrants A and C.

Table 4. Summary of the Comparison between Reality and Expectations for Knowledge and Skills Strengthening

No	Component	Suitability Level	Suitability Criteria	Reality	Expectation
B1	A certain level of theoretical understanding	53.22	Adequately Suitable	3.17	5.96
B2	Acquiring research skills	51.09	Adequately Suitable	3.06	5.98
B3	Applying theoretical knowledge at work	52.98	Adequately Suitable	3.16	5.97

No	Component	Suitability Level	Suitability Criteria	Reality	Expectation
B4	Ability to process, study, analyze, and systematize information	52.06	Adequately Suitable	3.11	5.98
B5	Providing innovative solutions to problems with different levels of difficulty	51.36	Adequately Suitable	3.06	5.95
B6	Decision making skills based on analyzed information	52.04	Adequately Suitable	3.09	5.94
B7	Developing document and report preparation skill	52.88	Adequately Suitable	3.11	5.89
B8	Ability to deliver information to public	47.80	Adequately Suitable	2.75	5.75
B9	Influencing public/mass to support one's opinions/positions	47.46	Adequately Suitable	2.78	5.85
B10	Skills acquired through working together in a team	71.22	Suitable	4.22	5.93
B11	Studying subtopics/topics/ and technical terms in a foreign language	60.66	Suitable	3.62	5.96
B12	Working on subtopics/topics using certain computer programs	63.33	Suitable	3.71	5.86
B13	Ability to plan, organize and execute one's own work	52.25	Adequately Suitable	3.10	5.93
B14	Entrepreneurial skills	49.45	Adequately Suitable	2.93	5.93
	Total	54.13	Adequately Suitable	3.20	5.92

Furthermore, the effectiveness of the quality of entrepreneurship education is measured by the achievement of the level of development of relevant knowledge and skills by strengthening entrepreneurial competence (Table 4 and Figure 3). From the data in Table 4, the division of quadrants based on Importance Performance Analysis (Martilla & James, 1977) can be visualized as shown in Figure 3.

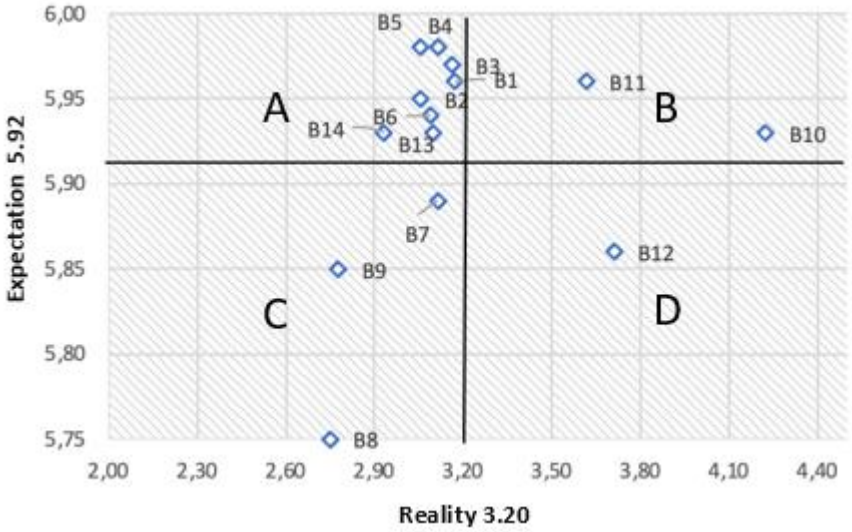

Figure 3. Entrepreneurial Knowledge and Skill Achievement Quadrant

Based on the summary in Table 4 and Figure 3, the components that are important and the components that require top priority (Quadrant A) are: (a) understanding of a theory at a certain level. The main obstacle according to the respondent's perspective is the ability to classify levels of theory in each scientific discipline; (b) acquiring research skills. There is actually a special course related to this, but from the students' perspective it has not been fully mastered, both through quantitative and qualitative approaches; (c) applying theoretical knowledge at work. The knowledge acquired has been applied to teaching assignments at campus, but when facing the business world, it is hardly able to apply as what acquired most is knowledge, not real implementation of theory; (d) the ability to process, study, and analyze information. Learning how to find and process information from various sources does not seem to be covered much. The tendency is to learn from what are available and more textbooks; (e) providing innovative solutions for problems with different degrees of difficulty. This competency is less covered in the learning process at prospective teacher-producing universities, whereas this competency is one of the markers of the era of industrial revolution 4.00; (f) ability to make decisions based on information analyzed. In respondents' perspective (the students), this competency is also less trained so that prospective teachers have not been able to provide motivation to be entrepreneurs is reasonable; (g) the ability to plan, organize and implement their own work. This competency is certainly vital in becoming entrepreneurs, but the fact shows that it is also less covered in the learning process at campus; and (h) entrepreneurial skills. There actually is a special course for this skill, but it seems to be more dominant in the mastery of concepts and theories of entrepreneurship.

Furthermore, the component that is still considered 'weak' and thus needs to get a second priority (Quadrant C), are: (a) developing document and report preparation skill; (b) influencing public/masses to support opinions/positions; and (c) ability to deliver information to public. In the perspective of respondents (the students), this aspect has not been trained enough. Even though it is lees needed, it must be a priority in the future for prospective entrepreneurs. Important components that has been shown to be achievement well but still needs to be optimized (Quadrant B), are: (a) learning about subtopic/topic and other technical terms in foreign languages; (b) skills acquired through teamwork. In prospective teacher-producing universities,

teamwork learning has been emphasized, for example with the existence of cooperative learning model. Thus, respondents may acquire and train it, even though the actualization of which has not much been practiced in entrepreneurship. Furthermore, the components in quadrant D are considered less important by students so that all energy and resources used in this component need to be diverted to support the achievement of components in quadrants A and C.

Discussion

Of all dimensions, the dimension of entrepreneurial skills is the aspect with the lowest level of customer (the students) satisfaction. No strengthening of the skills of entrepreneurship (such as courage in taking risks, value of innovation, creativity, confidence, etc.) becomes the attention of the students. In addition, there is still not much learning that is directed at practical activities (in the form of cases, experiential learning, problem-solving, project-based learning) and has not met the personal needs of students related to career development.

These findings indicate a mismatch in the development of entrepreneurial competencies with each area of expertise (Study Program) of prospective teachers. The competencies that have been built have not been in accordance with the needs of the business world/industrial world/labor market, so that it has implications for low competitiveness. The findings above confirm previous findings that in terms of quality, higher education institutions are still faced with the problem of not fully meeting the quality of education (Sukardi et al., 2019). Ideally, higher education institutions creating prospective teachers must have a unique ability to create specific competencies or expertise in developing entrepreneurial competencies. These specific competencies can be in the form of unique competencies and are difficult to imitate by competitors (Ozgen, 2011). This mismatch can also have an impact on the low contribution of higher education institutions in economic growth and national development in Indonesia, because it is not supported by graduates relevant to the demands of the world of work/industry sectors. Therefore, strengthening and developing student entrepreneurial competencies is crucial to produce competitive graduates. These competencies can be differential capability of higher education institution in achieving competitive advantage as stated by Etzkowitz (2004). Thus, the competence of graduates can be formed to read opportunities in building and developing businesses as Bikse and Riemere (Bikse & Riemere, 2013) found. The study of Ghina et al. (2017) also emphasized the importance of strengthening educational institutions in developing the competency skills of prospective graduates in accordance with the demands of the world of work or the industrial world.

Another finding in this research is that the learning process is not yet based on social practice. In fact, Lackėus (2013) in his study suggests that skills can only be built and developed if the learning process is by direct practice, or learning by doing or direct observation. Several other findings also prove that learning through practice and direct experience (experiential) is effective in improving students' soft skills, especially communication and responsibility (Barron et al., 2017); including problem solving skills (Murphy et al., 2017).

It was confirmed from the IPA results that the important components and priorities that need improvement are theoretical knowledge and skills. The results of this study indirectly confirm the research of Byun et.al. (2018) that entrepreneurial knowledge is very important to pay attention to, especially when faced with an

increasingly complex management environment or the demands of the industrial world. Entrepreneurship materials should be directed at finding opportunities, risk challenges, business plans, finance and marketing (Byun et al., 2018). Furthermore, the results of Chang (2014) study that skills related to creativity are still not optimal, as evidenced by students not having the courage to start/try a business. This is due to learning that is not directed at practices such as problem solving (Suh, 2021), as well as teaching methods that are still controversial and classic (Coleman & Robb, 2012), and are not even innovative (Tontini et al., 2014).

The above findings cannot be separated from the evaluation model using IPA. This model is quite effective for identifying educational problems in Indonesia, especially in higher education institutions producing prospective teachers as found in this study. This confirms the results of McLeay, et.al. (2017) that IPA provides recommendations to higher education institutions to strengthen material on business models needed by students in order to create independence, generate ideas and creativity so that the quality of higher education institutions increases. This includes the teaching experience and expertise of subject teachers (Sapri et al., 2009); learning materials (Devinder & Datta, 2003) especially in entrepreneurship. Thus, IPA as a provider of service recommendations suggests that higher education institutions to improve their quality (Addas et al., 2021; Sheng et al., 2014), and analysis for the application of effective and efficient methods with the students' needs is minimally obtain and filter business information (Ormanović et al., 2017).

CONCLUSION

The results of this study indicate that the learning process at higher education institutions creating prospective teachers, has strived to develop entrepreneurial competencies and skills at all fields of study, especially in the practical application of science, selection and summarization of information, and more creative presentation. However, the skills needed to take initiative and direct personal responsibility are still not sufficiently developed. The results of the study also show that students of prospective teachers have not been fully prepared in accordance with the challenges of the current labor market. Prospective teacher students achieve theoretical knowledge which is categorized sufficient and practical skills which are also categorized as moderate or even low. The skills acquired are still low, particularly in relation to presenting the information learned to the public, evaluating, and analyzing. The results of the science analysis also show that there is a difference between expectations and reality, both in the dimensions of developing entrepreneurial competencies and in developing knowledge and skills related to strengthening entrepreneurship. Almost all aspects of developing entrepreneurial competencies fall into quadrant I (concentrate these), which means that it requires serious attention.

On this basis, it is necessary to encourage the development of appropriate learning materials and processes, and to educate all prospective teachers in the field of entrepreneurship education, in order to encourage the element of integration of student entrepreneurship development in each study program. In addition, strengthening skills in entrepreneurial practice activities through innovative and creative approaches is a crucial point for prospective teachers.

RECOMMENDATION

Considering the current study's findings, further study on the matter is thus required. Here, it is recommended that further study is conducted by changing the

substance and putting together theories and practices, which will allow even more opportunities for the students to learn by doing. It is also recommended that further study attempts at integrating entrepreneurship education into the study program's curriculum by adopting/developing strategies that had been previously used and realized in the more developed countries.

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Declaration of interests

The researchers declare no conflict of interests.

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