

Students and Vocational Educators Perceived on the Importance Level of Employability Skills

I Made Suarta
Department of Accounting
Politeknik Negeri Bali
Badung, Indonesia
madesuarta@pnb.ac.id

I Ketut Suwintana
Department of Accounting
Politeknik Negeri Bali
Badung, Indonesia
tutswint@yahoo.com

I G P Fajar Pranadi Sudhana
Department of Tourism
Politeknik Negeri Bali
Badung, Indonesia
fpranadi@pnb.ac.id

Ni Kadek Dessy Hariyanti
Department of Bussiness Administration
Politeknik Negeri Bali
Badung, Indonesia
dessy_hariyanti@yahoo.com

Abstract:

The changing demands in today's world of work requires highly skilled employees. Increasing competition in the labor market require employees to have employability skills in addition to technical skills. Employability skills are conceptualized as the generic skills and personal attributes considered important by industry and needed by graduates in order to get job and secure employment. The purpose of the study was to explore the importance level of employability skill attributes as perceived by students and vocational educators, and examine the statistical differences between them. Purposive sampling was used to obtain the data and samples comprised 50 accounting vocational educators from Polytechnics in Indonesia and 161 vocational students from Accounting Department Bali State Polytechnic. The data was collected by self-administered questionnaires and analysed using descriptive and inferential statistical analysis. Students noted teamwork skills, creativity and innovation skills, and self-management skills as three generic skills that are very important in the world of work. Whereas, educators noted communication skills, self-management skills, and teamwork skills that are very important. Both students and educators perceived leadership skills with the lowest importance level. A statistically significant difference was found between students and educators in their importance level perceptions of generic skills attributes needed to enter the workforce. Both students and educators perceived honesty and work ethic as two personal attributes with the highest importance level, and personality with the lowest importance level. A statistically significant difference was found between students and educators in their importance level perceptions of personal attributes.

Keywords: *employability skills, generic skills, personal attributes.*

I. INTRODUCTION

The double challenge of a competitive business world and rapid technology advancements in the era of industrial revolution 4.0 not only affect employers, but also the way employees and job seekers react to the work environment. The changing demands in the world of work requires highly skilled employees. A graduates' marketable skills have become the major key of employees' security and success in today labor market, and have increasingly concerned by employers around the world [1, 2]. The marketable skills cover a number of skills that can be transferred in other fields of work such as communication skills, teamwork, problem solving, and so on.

Today's employers prefer workers who have a number of transferable or non-technical skills. Employer surveys indicate that occupation-specific skills are no longer sufficient for graduates to meet the needs of labor markets [3]. Workers nowadays are expected to have an additional set of non-technical skills, called employability skills. The employability skills such as communication, problem solving, decision making, analytical and critical thinking, team work, and continuous learning are some of the employability skill attributes required by graduates in entering the workforce [4], and essential for career success in the workplace [5]. Anticipating an increasingly competitive world of work, the role of higher vocational education is not only to produce graduates with certain technical skills, but more important is to produce graduates with the employability skills needed by industry.

Higher education are facing great pressure from prospective employers and other stakeholders to equip graduates with employability skills other than technical skills. Graduate employability skills have become a main issue for universities in Australia, UK, USA, China, and other countries around the world [6, 7, 2]. Therefore, universities should rethink and adjust their curriculum to include and promote the desired employability skills. As well as higher vocational education in Indonesia, it is necessary to revitalize its curriculum so that produce graduates according to the needs of today's workforce.

Higher vocational education is called upon to prepare graduates for the world of work and polytechnic are pressured to meet standards on that employability. Revitalization of higher vocational education curriculum should be put the employability skills in an important position to improve the integration of graduates into the labor market. Several researchers have investigated this issue in their country [8, 9, 10]. All research results indicate the importance of higher education graduates having employability skills. Employability skills needed by employers and mainstreaming these skills on the curriculum are importance for indentified.

This study would like investigated skills and attributes in context for enhanced employability skills polytechnic students. The purpose of this study was to: (1) Explore the importance level of employability skills attributes needed to enter the workforce perceived by students and vocational educators; and (2) Examine differences perceptions of students and vocational educators concerning importance level of employability skills attributes needed to enter the workforce.

Developing employability skills students is a continuous process and requires the commitment of all parties in educational institutions. An understanding of employability skills among students and educators is essential for the successful development of this skills. The views of students and vocational educators are very necessary in an effort to develop a curriculum. The research findings will assist polytechnic to get a better understanding of the employability skills to equip their graduates based on industry preferences.

II. LITERATURE REVIEW

The terminology of employability skills has been discussed for a number of years. Up to now, employability skills are still the main issue in the world of work. Before, numerous studies have produced the concept, definition, and framework of employability skills. The initial document on the importance of employability skills for job seekers is found in the report "Employability skills profile" [11], "What Works Requires of Schools: A SCANS Report for America 2000" [12], and "Employability skills for the future" [13]. From the various documents it can be concluded that employability skills are the critical skills needed in the workplace, whether self-employed or working for others.

Employability skills are related to the capacity of employment, which can make the employees get job and necessary for career success, maintain or even get a new employment, and contribute to enterprise strategic directions [14, 15, 16, 17]. In the document "Employability skills for the future" [13], employability skills are defined as "... skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions. Employability skills are also sometimes referred to as generic skills, capabilities or key competencies". Employability skills is used interchangeably with other terms such as transferable

skills, non-technical skills, essential skills, and 21st century skills.

Attention to employability skills also comes from international bodies such as the International Labor Organization (ILO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the World Economic Forum (WEF). The ILO defines employability skills as "... the skills, knowledge and competencies that enhance a worker's ability to secure and retain a job, progress at work and cope with change, secure another job if he/she so wishes or has been laid off and enter more easily into the labour market at different periods of the life cycle" [18]. Cited from the reference [19] "There is general consensus that employability refers to a wide range of attributes and competencies that enable the job seekers to gain and maintain employment such as, but not limited to, the following: communication skills; logical, analytical and problem solving skills; personality, confidence, and integrity; flexibility and adaptability; innovation and creativity; and team spirit".

The role of employability skills will be increasingly important in the future world of work. Cited from document "The Future of Jobs" that disruptive changes to business models will have a profound impact on the employment landscape over the coming years [20]. Based on this document, ten top skills needed by the world of work 2020 are complex problem solving, critical thinking, creativity, people management, coordinating with other, emotional intelligence, decision making, service orientation, negotiation, and cognitive flexibility. The type of skills needed will depend on the industry itself.

Creativity will become one of the top three skills workers will need in the fourth industrial revolution. According to reference [21] creativity, complex problem-solving, and critical thinking as top three employability skills for the future workforce. Based on a report from the McKinsey Global Institute [22], it was stated that various jobs influenced by artificial intelligence and automation needed skills such as creativity, critical thinking and decision making, and complex information processing. These types of skills will grow until 2030 with a double-digit cumulative level.

Occurrences disrupted economies and new business models that are driven by technological innovations at the beginning of the 21st century has brought a significant change in the concept of employability skills required today's world of work. As stated in the reference [23], some rethinking is needed in terms of how to define 'employability' in the disrupted economy. Employability skills are considered as social aspects of employee who must be treated at the group level and not at the individual level [6]. Accordingly, the employers and universities should help graduates in developing the desirable employability skills. As concluded in the reference [9], employability skills like leadership, analytical thinking, communication and creativity are considered necessary before being hired. These skills are essential because possessing the ability to think, to analyze and to make sound decisions is critical for any employee par-

ticularly when dealing in a global and competitive business environment that is constantly changing.

The needed to rethinking the employability skills in the disrupted economies also came from other researchers. They argued that today's graduates are likely to be affected by the disruptive labor market. In an era of economic disruption, new jobs will be created but on the other hand, there will be downsizing. Accountants and bookkeepers are one of the five types of work that will be carried out automatically, based on machine learning algorithms running on purpose-built computer platforms [24]. The industrial revolution 4.0 influences accounting practices in several ways, such as: increasing the credibility and relevance of reporting through self-controlling, self-auditing and demand pull custom accounting systems [25]. The involvement of accounting professionals in business processes will be reduced in line with the increasing use of digital technology and automation. As stated in the reference [26], accounting transactional tasks will switch to an integrated business service solutions, and predicts it will eliminate up to 40% job accounting in 2020.

Graduates' employability skills are very strategic in facing competition in the job market and not only focusing on technical skills. Anticipating the automation of accounting work, workers who are creative, have social skills, and high-order thinking are needed [27]. Skill attributes such as communication, problem solving, decision making, analytical and critical thinking, synthesizing information, team work, inter-personal skills, and continuous learning are needed by accounting graduates in entering and career in the world of work [4]. Reference [28] also mentions that accounting professions really need critical thinking and high level skills, and have good communication and interpersonal skills.

Other research findings also indicate communication, analytical, and time management are skills attributes with a high importance level according to the employers perception [29], communication, continuous learning, and decision making as three skills with the highest importance level needed by the workforce according to the accounting educators perception and employers in accounting and finance [30]. Reference [31] mentions "communication, critical thinking, creativity, and problem-solving skills are the basic soft skills required by most of the business organizations and they are differing and depending on the types of industry". In addition, employers prefer individuals who have positive work attitudes and values. Motivation, integrity, self-awareness, adaptability, intellectual ability, confidence, and other personal attributes are needed by graduates when entering the workforce [32, 33].

At the end of literature review, authors summarize employability is "conceptualized as the generic skills and personal attributes considered important by industry and needed by graduates in order to get job and secure employment". Generic skills such as communication skills, team work skills, problem solving skills, creativity and innovation skills, self management skills, and others. Personal attributes represent the individual potential of a graduate,

include honesty and integrity, personality, adaptability, accuracy, independency, and work ethics.

III. METHODOLOGY

This study used a quantitative non-experimental approach, carried out by the survey method. Survey method is one method in quantitative non-experimental research using a questionnaire. The population consisted of student and vocational educator groups. Sample selection was done by purposive sampling. The total sample groups of students was 161 people, and the vocational educator group was 50 people.

Data were collected by self-administered questionnaires. Respondents answered questions without the help of researchers. The items in this instrument are the results of job advertisement content analysis [34], and several other documents [29, 33]. Content validation of the research instruments was carried out by expert judgment and focus group discussions. In this study, the hypothetical model of employability skills consists of generic skills and personal attributes. Based on the results of content validation, the generic skills consists of 44 questions and the personal attributes consists of 20 questions.

The questionnaire is designed by Likert five-point scales. Item ranges from "not important" to "strongly important". "1" represents not important, "2" represents little important, "3" represents important, "4" represents very important, "5" represents strongly important. Before the instrument is used, the validity and reliability of the instrument is tested. Testing the validity of the instrument is done by Pearson Product Moment correlation at a significance level of α 5%. Whereas, reliability testing uses Cronbach's Alpha, because the instrument used in this study uses a non-dichotomous score, the Likert scale. The research instrument was said to be reliable if it had the value of Cronbach's Alpha \geq 0.7. Pearson Product Moment correlation coefficient ranges from 0.286 (lowest) to 0.870 (highest), and it's significant at the level of α 5%. Reliability testing shows the Cronbach's Alpha 0.705 - 0.893. It can be concluded that the instruments used in the study met the criteria of validity and reliability.

Data were analyzed by descriptive statistics, namely the average score, standard deviation, and presented in graph. Also, compare means analysis with the independent sample t-test to determine differences of the importance level of employability skills attributes perceived by students and vocational educators.

IV. RESULT AND DISCUSSION

Description of Generic Skills

Table 2 shows the means score and standard deviation of generic skills attributes according to the perceptions of students and vocational educators. Verbal communication, ability to work in teams, responsible for decision-making problems, having the desire to work and high motivation,

having high loyalty, discipline in managing time are attributes with highest means score in each generic skills group, namely communication skills, teamwork skills, problem solving skills, creativity and innovation skills, leadership skills, self-

management skills, and learning skills. A high means score indicates these attributes have a highest importance level according to the perceptions of students and vocational educators.

Table 2. Descriptive statistics of generic skills attributes

Code	Generic Skills Attribute	Students Perception (n=161)		Educators Perception (n=50)	
		Mean Skor	Std. Deviation	Mean Skor	Std. Deviation
Communication skills					
Comm1	Written communication	3.86	0.779	4.24	0.591
Comm2	Verbal communication	4.60	0.563	4.66	0.479
Comm3	Listening to other people's talk	4.60	0.552	4.22	0.679
Comm4	Ability to presentation	4.39	0.653	4.40	0.639
Comm5	Ability to build relationships	4.54	0.642	4.24	0.797
Comm6	Ability to negotiate	4.24	0.729	4.16	0.738
Average		4.37		4.32	
Teamwork skills					
Team1	Ability to work in teams	4.81	0.426	4.52	0.646
Team2	Ability to work with other people	4.57	0.589	4.50	0.678
Team3	Ability to motivate team members	4.34	0.662	4.10	0.707
Team4	Contributing to achieving common goals	4.45	0.632	4.24	0.687
Team5	Collaboration in multi-cultural teams	3.94	0.709	4.08	0.695
Team6	Collaboration in carrying out joint tasks	4.29	0.704	4.12	0.689
Team7	Ability to mingle in groups	4.53	0.570	4.04	0.638
Team8	Ability to express opinions	4.61	0.514	4.22	0.737
Average		4.44		4.23	
Problem Solving skills					
Prob1	Strong analytical ability	4.25	0.671	4.10	0.839
Prob2	Ability to think critically	4.39	0.700	4.12	0.773
Prob3	Ability to analyze the business environment	4.23	0.735	3.96	0.832
Prob4	Evaluate information and make decisions	4.45	0.591	4.10	0.909
Prob5	Responsible for decisions taken in solving problems	4.72	0.515	4.30	0.763
Average		4.41		4.12	
Creativity and innovation skills					
Innov1	Ability to take advantage of business opportunities	4.46	0.612	3.94	0.712
Innov2	Entrepreneurial ability	4.12	0.778	3.74	0.751
Innov3	Be active and like challenges	3.93	0.726	3.66	0.848
Innov4	Have the desire to succeed at work	4.80	0.459	4.40	0.535
Innov5	Energetic and hardworking	4.65	0.539	4.42	0.575
Innov6	Have high motivation	4.70	0.546	4.50	0.580
Average		4.44		4.11	
Leadership skills					

Lead1	Highly dedicated	4.47	0.623	4.40	0.728
Lead2	Have high loyalty	4.53	0.603	4.46	0.613
Lead3	Have a leadership spirit	4.19	0.694	3.92	0.724
Lead4	Have good leadership qualities	4.25	0.680	4.06	0.740
Lead5	Ability to manage other people	3.76	0.779	3.86	0.729
Lead6	Ability to manage projects	4.14	0.706	3.78	0.790
Lead7	Ability to manage clients	4.24	0.638	3.86	0.729
Average		4.23		4.05	
Self-management skills					
Self1	Ability to work under pressure	4.02	0.993	4.06	0.867
Self2	Ability to work with targets	4.38	0.632	4.22	0.582
Self3	Willingness to work hard	4.60	0.615	4.26	0.600
Self4	Ability to work efficiently	4.62	0.512	4.24	0.625
Self6	Ability to prioritize activities	4.18	0.670	4.26	0.565
Self7	Discipline in managing time	4.83	0.407	4.48	0.544
Average		4.44		4.25	
Learning skills					
Learn1	Ability to multi-task	4.12	0.693	4.00	0.857
Learn2	Adapting to corporate culture	4.24	0.676	4.10	0.707
Learn3	Enthusiastic and fast learning	4.34	0.643	4.14	0.606
Learn4	Willingness to develop themselves	4.71	0.480	4.38	0.635
Learn5	Willingness to long-life learning	4.19	0.768	4.20	0.670
Learn6	Like challenges at work	4.07	0.681	4.06	0.586
Average		4.28		4.15	

The overall average score of generic skill groups according to student perceptions are sorted from large to small, namely: teamwork skills, creativity and innovation skills, self-management skills, problem-solving skills, communication skills, learning skills, and leadership skills. Meanwhile, the overall average score of generic skill groups according to vocational educators perceptions are sorted from large to small is communication skills, self-management skills, teamwork skills, learning skills, problem-solving skills, creativity and innovation skills, and leadership skills. Interesting from these findings is that self-management skills and teamwork skills are equally perceived to have a high importance level, while leadership skills are equally perceived to have a low

importance level both according to students and vocational educators.

Description of Personal Attributes

Table 3 shows the means score and standard deviation of personal attributes according to the perceptions of students and vocational lecturers. Be honest, accuracy in work, confidence in work, good personality, being open and broad-minded, and having a good work ethics are some personal attributes that are perceived to have a high importance level from each group. Personal attributes are grouped into honesty, accuracy, independency, personality, adaptability, and work ethic.

Table 3. Descriptive statistics of personal attribute

Code	Personal Attribute	Students Perception (n=161)		Educators Perception (n=50)	
		Mean Skor	Std. Deviation	Mean Skor	Std. Deviation
Honesty					
Hon1	Be honest	4.88	0.324	4.82	0.388
Hon2	Integrity	4.76	0.430	4.80	0.404

Hon3	Self-esteem	4.70	0.472	4.42	0.609
Average		4.78		4.68	
Accuracy					
Acc1	Accuracy in work	4.49	0.549	4.44	0.541
Acc2	Work deftly	4.51	0.571	4.08	0.601
Average		4.50		4.26	
Independency					
Ind1	Work independently	4.38	0.622	4.16	0.650
Ind2	Confident in work	4.78	0.429	4.32	0.471
Average		4.58		4.24	
Personality					
Pers1	Good looking	4.17	0.729	3.72	0.757
Pers2	Good personality	4.79	0.424	4.44	0.611
Pers3	Pleasant personality	4.33	0.669	3.98	0.714
Pers4	Neat appearance	4.59	0.575	3.96	0.605
Pers5	Sense of humour	3.96	0.724	3.42	0.609
Average		4.37		3.90	
Adaptability					
Adp1	Supple personality	4.57	0.545	4.04	0.638
Adp2	Being open and broad-minded	4.71	0.483	4.34	0.626
Adp3	Flexibility	4.42	0.565	4.02	0.654
Adp4	Adaptability	4.64	0.531	4.30	0.505
Average		4.58		4.18	
Work ethic					
Etk1	Have a good work attitude	4.78	0.433	4.36	0.525
Etk2	Having work ethics	4.83	0.375	4.48	0.544
Etk3	Be consistent	4.63	0.498	4.38	0.602
Etk4	Act decisively	4.49	0.560	4.28	0.607
Average		4.68		4.38	

The overall average score of the personal attributes group according to student perceptions is sorted from large to small, namely honesty, work ethic, adaptability, independency, accuracy, and personality. Whereas, the average score of the personal attributes group according to the perceptions of the educators sorted from large to small is honesty, work ethic, accuracy, independency, adaptability, and personality. From these findings, honesty and work ethic are both perceived to have a high importance level, while personality is perceived to have a low importance level both according to students and educators.

Independent Sample T-Test

Table 4 shows the output group statistics of generic skills and personal attributes. Based on group statistics, it is known that mean score generic skills according to students perception is 4.372 with standard deviation 0.324, and mean score according to vocational educators is 4.175 with standard deviation of 0.416. Meanwhile, mean score personal attributes according to students perception is 4.570 with standard deviation 0.297, and mean score according to vocational educators is 4.238 with standard deviation of 0.332. Based on descriptive statistical results there are differences between perceptions of students and educators. To prove whether the difference is significant, it is necessary to interpret the results of independent sample test analysis.

Table 4. Output group statistics of generic skills and personal attributes

Sample Group	Generic Skills				Personal Attributes			
	N	Mean	Std.	Std.	N	Mean	Std.	Std.

			Deviation	Error			Deviation	Error
Student	161	4.37182	.323829	.025521	161	4.57019	.296563	.023372
Educator	50	4.17545	.415839	.058809	50	4.23800	.332363	.047003

Table 5 displays the results independent sample t-test analysis of the generic skills and personal attributes. Based on Table 5, it is known that the significance value of Levene's Test for Equality of Variances generic skills is 0.012. This means that the data variance between groups of students and educators is not homogeneous. Thus the interpretation of the output table of the independent samples test is based on the value contained in the Equal variances not assumed. Based on the table output of the independent samples test in the Equal variances not assumed section, the Sig. (2-tailed) is 0.003. It can be concluded that there are significant differences between the perceptions of students and vocational educators on generic skills attributes.

As for personal attributes, the value of Sign. Levene's Test for Equality of Variances is 0.772. This means that the personal attribute data variance between groups of students and vocational educators is homogeneous. Thus the interpretation of the output table of the independent samples test is based on the values contained in the Equal variances assumed. Based on the table output of the independent samples test in the Equal variances assumed section, the Sig. (2-tailed) is 0.000. It can be concluded that there are significant differences between the perceptions of students and vocational educators on personal attributes.

Table 5. Output independent samples test generic skills and personal attributes

Independent Samples Test		Generic Skills Mean Score		Personal Attributes Mean Score	
		Equal variances assumed	Equal variances not assumed	Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	6.382		.084	
	Sig.	.012		.772	
t-test for Equality of Means	t	3.489	3.063	6.720	6.328
	df	209	68.451	209	74.826
	Sig. (2-tailed)	.001	.003	.000	.000
	Mean Difference	.196369	.196369	.332186	.332186
	Std. Error Difference	.056275	.064108	.049433	.052494
	95% Confidence Interval of the Difference				
	Lower	.085430	.068460	.234735	.227610
	Upper	.307309	.324279	.429638	.436763

Discussion

Students' expectations when they enter the higher education are to gain knowledge, skills and abilities to compete in the job market, perform the jobs and advance their careers. On the other hand, employers have an expectation that a higher education will provide graduates with the employability skills required to perform their jobs. It's just that, not infrequently there is a gap in skills possessed by graduates with those expected by employers. As stated in the reference [35], the college has a responsibility to identify employability skills to help students overcome this skills gap. A common understanding of these skills is needed, because education and industry operate in separate systems. Employers historically have not clearly communicated their needs and expectations to the college graduates they have recruited.

This research is part of the responsibility in preparing graduates' skills through the identifying employability skills needed by the world of work. This study intends to assess the perception of students and vocational educator about

employability skills to ensure the transition of graduates into the workforce. The results of this study indicate that employability skills are very important in the transition to the world of work, both according to students' perceptions and vocational educators. In this study, employability skills are conceptualized as the generic skills and personal attributes. The rank importance level of generic skills according to students' perceptions is teamwork skills, creativity and innovation skills, self-management skills, problem-solving skills, communication skills, learning skills, and leadership skills with overall average score 4.372. The rank importance level of generic skills according to educators' perceptions is communication skills, self-management skills, teamwork skills, learning skills, problem-solving skills, creativity and innovation skills, and leadership skills with overall average score 4.175. The average importance level of generic skills according to students' perceptions is higher than educators, and this difference is significant. This result was in accordance with reference [36] which found that communication, thinking

creatively, learn new concepts, problem solving, decision making, and reasoning were the generic skills needed to enter the workforce. The study in reference [9] also show the importance level of generic skills expected from new graduates are organization/planning, teamwork, learning theory and practice, work culture, conceptual and analytical skills, communication, and leadership. Students consider skills such as communication skills, analysis and problem solving, innovations, new ideas and solutions, decision making, ability to gain new knowledge are important to enter the workforce [10]. Reference [37, 38] reported teamwork, communication, decision-making, presentation skills, and ability to work in teams as essential generic skills to be enhanced in business and accounting students.

The rank importance level of personal attributes according to students' perceptions is honesty, work ethic, adaptability, independency, accuracy, and personality with overall average score 4.570. The rank importance level of personal attributes according to educators' perceptions is honesty, work ethic, accuracy, independency, adaptability, and personality with overall average score 4.238. The average importance level of personal attributes according to students' perceptions is higher than educators, and this difference is significant. This result was in line with reference [36] which found that responsible, self-confident, honest, cooperative, social skills, good work attitude, team spirit, punctual & efficient, self-motivated, integrity, and self-control were the personal attributes needed to enter the workforce. References [39] also show integrity and professional ethics as attributes with high importance level according to the instructor's perception and fresh graduates. Personal traits, integrity/work ethics, ability to work under pressure, personal drive / ability to work independently, enthusiasm/passion, and flexibility/adaptability are found as skills attributes required for entry-level marketing jobs [40]. Personal attributes are used to describe a set of non skill-based behaviours and attitudes that employers felt were as important as the generic skills and other technical or job specific skills and contribute to overall employability.

V. CONCLUSION

Generic skills equip a person to achieve their full potential in employment, life and community. They are highly-valued by employers for their role in enhancing the capacity of employees to respond, learn and adapt when workplace demands change. Generic skills included communication skills, teamwork skills, problem solving skills, creativity and innovation skills, leadership skills, self-management skills, and learning skills. This skill domains have a high importance level according to the perceptions of students and vocational educators. The overall average perception score of generic skills according to students is higher than the vocational educators. There are statistical significant differences between the perceptions of students and vocational educators on generic skills attributes. Self-management skills and teamwork skills are both perceived to have a highest importance level, while leadership skills is perceived to have a lowest importance level both according to students and educators.

Personal attributes are used to describe a set of non skill-based behaviours and attitudes that employers felt were as important as the generic skills and other technical or job specific skills and contribute to overall employability. Personal attributes domain included honesty, accuracy, independency, personality, adaptability, and work ethic. This personal attributes have a high importance level according to the perceptions of students and vocational educators. The overall average perception score of personal attributes according to students is higher than the vocational educators. There are statistical significant differences between the perceptions of students and vocational educators on personal attributes. Honesty and work ethic are both perceived to have a highest importance level, while personality is perceived to have a lowest importance level both according to students and educators.

The results of this study indicate that generic skills and personal attributes are needed in entering the workforce. This implies the need to focus and integrate generic skills and personal attributes in the education curriculum to enhance employability of polytechnic graduates and to meet the needs of employers. In line of the findings, the study recommends that polytechnic should make great efforts to ensure that they are equipping their graduates with employability skills as needed in the industry. Strategic policies and systematic steps are needed to integrate these skills into the polytechnic education curriculum. Further study is also needed in order to develop strategies to embed and enhance students' employability skills.

ACKNOWLEDGMENTS

This paper was part of a research which was supported by grant contract number 811/PL8/LT/2019 from the Directorate of Research and Community Service, Directorate General of Research Strengthening and Development, Ministry of Research, Technology and Higher Education, Indonesia. The authors say many thanks to the Ministry of Research, Technology and Higher Education for the support of financing this research and others who have contributed to this research.

REFERENCES

- [1]. Ali, F.T.M., Othman, A. R., & Ahmad, N. Bt. (2017). Graduate's Marketable Skills: An Empirical Investigation of Its Effect on Perceived Marketability of Yemeni Graduates in The Arab Gulf States. *Asian Journal of Science and Technology*, 8(11): 6497-6509.
- [2]. Zhang, X., & Zou, X. (2013). University Students' Employability Skills Model Based on Chinese Employer Perspective. *Journal of Human Resource and Sustainability Studies*, 1(3): 29-33, <http://dx.doi.org/10.4236/jhrss.2013.13005>
- [3]. The Organisation for Economic Co-operation and Development (OECD). (2019). *OECD Skills Outlook*

- 2019 - *Thriving in a Digital World*. Accessed June 21, 2019 from <https://www.oecd.org/skills/launch-of-2019-skills-outlook-thriving-in-a-digital-world-paris-may-2019.htm>.
- [4]. Low, M., Botes, V., Dela Rue, D., & Allen, J. (2016). Accounting Employers' Expectations - The Ideal Accounting Graduates. *e-Journal of Business Education & Scholarship of Teaching*, 10(1): 36-57.
- [5]. Abayadeera, N., & Watty, K. (2016). Generic skills in accounting education in a developing country: Exploratory evidence from Sri Lanka. *Asian Review of Accounting*, 24(2): 149 – 170.
- [6]. Clarke, M. (2018). Rethinking graduate employability: The role of capital, individual attributes and context. *Studies in Higher Education*, 43(11): 1923-1937, DOI: [10.1080/03075079.2017.1294152](https://doi.org/10.1080/03075079.2017.1294152)
- [7]. El Mansour, B., & Dean, J. C. (2016). Employability skills as perceived by employers and university faculty in the fields of human resource development (HRD) for entry level graduate jobs. *Journal of Human Resource and Sustainability Studies*, 4(1): 39-49. <http://dx.doi.org/10.4236/jhrss.2016.41005>
- [8]. Mahajan, P., & Golahit, S. (2017). Approach to Employability Skills in Technical Education its impact on satisfaction of selecting an Institute. *International Journal in Management and Social Science*, 5(2): 258-265, <http://www.ijmr.net.in>
- [9]. Tejan, O.A., & Sabil, A. (2019). Understanding Employers' Perception of Employability Skills and Career Development in Morocco. *International Journal of Education & Literacy Studies*, 7(2): 134-138, <http://dx.doi.org/10.7575/aiac.ijels.v.7n.2p.134>.
- [10]. Lisa, E., Hannelova, K., & Newman, D. (2019). Comparison between employers' and students' expectations in respect of employability skills of university graduates. *International Journal of Work-Integrated Learning*, 20(1): 71-82.
- [11]. The Conference Board of Canada (CBC). (2000). *Employability skills 2000+*. Accessed July 28, 2008 from <http://www.conferenceboard.ca/education/learning-tools/pdfs/esp2000.pdf>
- [12]. The Secretary's Commission on Achieving Necessary Skills (SCANS). (1991). *What works requires of schools: A SCANS report for America 2000*. Accessed April 15, 2019, from <https://files.eric.ed.gov/fulltext/ED332054.pdf>.
- [13]. The Department of Education, Science and Training (DEST). (2002). *Employability skills for the future*. A Report by the Australian Chamber of Commerce and Industry (ACCI) and the Business Council of Australia (BCA) for the Department of Education, Science and Training, Canberra.
- [14]. Overtoom, C. (2000). *Employability skills: An update*. ERIC Digest No. 220. Columbus, Ohio: ERIC Clearinghouse on Adult, Career, and Vocational Education. Accessed July 12, 2008 from <http://www.ericdigests.org/2001-2/skills.htm>.
- [15]. Yorke, M. & Knight, P.T. (2006). *Embedding employability into the curriculum*. York, United Kingdom: The Higher Education Academy.
- [16]. Pool, L., & Sewell, P. (2007). The key to employability: developing a practical model of graduate employability. *Education and Training*, 49(4): 277-285.
- [17]. Belt, V., Drake, P., & Chapman, K. (2010). *Employability Skills: A Research and Policy Briefing*. Briefing Paper Series, UK Commission for Employment and Skills. Accessed February 22, 2018, from <http://www.educationandemployers.org/wp-content/uploads/2014/06/employability-skills-policy-briefing-ukces.pdf>
- [18]. Brewer, L. (2013). *Enhancing youth employability: What? Why? and How? Guide to core work skills*. International Labour Office, Skills and Employability Department. Geneva: ILO. Accessed March 23, 2019 from <https://www.ilo.org/publns>
- [19]. The UNESCO Bangkok Office. 2012. *Graduate Employability in Asia*. Accessed June 25, 2018 from <http://unesdoc.unesco.org/images/0021/002157/215706E.pdf>.
- [20]. The World Economic Forum (WEF). (2016). *The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*. Accessed on March 12, 2019, from https://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf
- [21]. Andriotis, N. (2017). *Beat the Machines with these 10 Employability Skills for the Future!*. Accessed June 25, 2019 from <https://www.talentlms.com/blog/top-ten-employability-skills-future/>
- [22]. Bughin, J., Hazan, B.E., Lund, P.S., Dahlström, P., Wiesinger, A., & Subramaniam, A. (2018). *Skill Shift Automation and the Future of the Workforce*. Discussion Paper. Accessed June 21, 2019 from www.mckinsey.com/mg
- [23]. Oliver, B. (2015). Redefining graduate employability and work-integrated learning: Proposals for effective higher education in disrupted economies. *Journal of Teaching and Learning for Graduate Employability*, 6(1): 56-65.
- [24]. Palmer, S. (2017). *The 5 Jobs Robots Will Take First*. Accessed February 26, 2018 from

- <https://www.shellypalmer.com/2017/02/5jobs-robots-will-take-first/>
- [25]. Burritt, R., & Christ, K. (2016). *New World: Fourth industrial revolution. Accounting and Business*. Accessed March 5, 2018 from <http://graduate.accaglobal.com/.../2016/November-December/AB-INT-Nov-Dec-2016.pdf>
- [26]. Axson, D. (2017). *Death by digital: Goodbye to finance as you know it - CFO.com*. Accessed May 20, 2019 from <https://www.cfo.com/analytics/2015/10/death-digital-good-bye-finance-know/>.
- [27]. PricewaterhouseCoopers (2015). *The evolution of auditors: How skillsets are changing*. Accessed October 25, 2018, from <http://www.pwc.com/us/en/cfodirect/assets/pdf/auditin-g-evolution-technology-driven-skillsets.pdf>.
- [28]. Howcroft, D. (2017). Graduates' vocational skills for the management accountancy profession: Exploring the accounting education expectation-performance gap. *Accounting Education*, 26(5–6), 459–481, DOI: 10.1080/09639284.2017.1361846.
- [29]. Lim, Y.M., Lee, T.H., Yap, C.S., & Ling, C.C. (2016). Employability skills, personal qualities, and early employment problems of entry-level auditors: Perspectives from employers, lecturers, auditors, and students, *Journal of Education for Business*, 91(4): 185-192, <https://doi.org/10.1080/08832323.2016.1153998>
- [30]. Ali, I. M., Kamarudin, K., Suriani, N.A., Said, N.Z., & Affandi, Z.A.M. (2016). Perception of Employers and Educators in Accounting Education. 7th International Economics and Business Management Conference, 5th & 6th October 2016. *Procedia Economics and Finance*, 35 (2016): 54 – 63.
- [31]. Tang, K. N. (2019). Beyond Employability: Embedding Soft Skills in Higher Education. *TOJET: The Turkish Online Journal of Educational Technology*, 18(2) : 1 – 9.
- [32]. McMurray, S., Dutton, M. McQuaid, R.W., Richard, A. (2016). Employer Demands from Business Graduates. *Education and Training*, 58(1): 112 – 132, DOI: 10.1108/ET-02-2014-0017.
- [33]. Tan, L.M., & Laswad, F. (2018). Professional skills required of accountants: what do job advertisements tell us? *Accounting Education*, 27:4, 403-432, DOI: [10.1080/09639284.2018.1490189](https://doi.org/10.1080/09639284.2018.1490189)
- [34]. Suarta, I M., Suwintana, I K., Fajar Pranadi Sudana, I G. P., & Dessy Hariyanti, N. K. (2018). Employability Skills for Entry Level Workers: A Content Analysis of Job Advertisements in Indonesia. *Journal of Technical Education and Training*, 10(2): 49-61.
- [35]. Mahajan, P., & Golahit, S. (2017). Approach to Employability Skills in Technical Education: its impact on satisfaction of selecting an Institute. *International Journal in Management and Social Science*, 5(2): 258 – 265. <http://www.ijmr.net.in>.
- [36]. Aman, M., & Sitotaw, M. (2014). Perception of Summer Cooperative Graduates on Employers Generic Skills Preference. *International Journal of Instruction*, 7(2): 181 – 190.
- [37]. Wickam, M.J. (2018). Using Service-Learning to Enhance Employability Skills in Graduate Business Capstones: A Dissertation Overview. *Journal of Higher Education Outreach and Engagement*, 22(1) : 163 – 173.
- [38]. Ghani, E.K., Rappa, R., & Gunardi, A. (2018). Employers' perceived accounting graduates' soft skills. *Academy of Accounting and Financial Studies Journal*, 22(5) : 1 – 11.
- [39]. Singha, P., Thambusamy, R., Ramly, A., Abdullah, I. H., Mahmuda, A. Z. (2013). Perception Differential between Employers and Instructors on the Importance of Employability Skills. Paper presented on 6th International Conference on University Learning and Teaching. *Procedia - Social and Behavioral Sciences*, 90 (2013) 616 – 625, <https://doi.org/10.1016/j.sbspro.2013.07.133>
- [40]. Roux, T., & de Jager, J. (2016). Employability Attributes required for Entry-Level Marketing Jobs in Selected Sectors in South Africa. *Journal of Marketing Management*, 4(1): 83-92. <https://doi.org/10.15640/jmm.v4n1a9>