

Soft Skills of Polytechnic Students in Indonesia Based on Comparative Analysis Data According to the Needs of Higher Education and Workplace

by Achmad Muhammad

Submission date: 28-Jun-2023 10:22AM (UTC+0700)

Submission ID: 2123764046

File name: ata_According_to_the_Needs_of_Higher_Education_and_Workplace.pdf (450.48K)

Word count: 2910

Character count: 17789

Soft Skills of Polytechnic Students in Indonesia Based on Comparative Analysis Data According to the Needs of Higher Education and Workplace

Achmad Muhammad ^{1*}, Emma Dwi Ariyani ¹, Supriyadi Sadikin ¹

¹ Department of Socio Manufacture, Politeknik Manufaktur Bandung, INDONESIA

* CORRESPONDENCE: ✉ amuhammad@polman-bandung.ac.id

ABSTRACT

This study is a comparative analysis of data from several studies on the soft skills for students of polytechnic education. This research used qualitative analysis with grounded research method. The research findings Sharma (2009) identify and select seven soft skills i.e. communication skills, thinking skills and problem solving skills, team work force, life-long learning and information management, entrepreneur skills, ethics, moral and professionalism, and leadership skills to be applied in all institutions of higher education. In IQF (2012) for Diploma III and IV can be summarized their six soft skills. Measuring instrument ever developed, namely Soft Competency Scale-Self Administrated Questionnaire (SCS-SAQ) 2015 and is used to measure the index of polytechnic students soft skills contains eight soft skills. While the 8 research on the needs of soft skills in the workplace is obtained compilation of soft skills based on similar into 15 soft skills. On the other hand to build a model of competence in the organization/company, LOMA'S Competency Dictionary provides a selection of covers 14 generic competencies and 46 specific competencies. Through analytical methods grounded research, we concluded that the soft skills for polytechnic students in higher education required the existence of 12 soft skills, i.e. commitment, communication skill, detail orientation, entrepreneur skill, flexibility, integrity, leadership, lifelong learning, motivation, relationship building, self confidence, and thinking skills.

Keywords: soft skills, polytechnic students, comparative analysis, grounded research, higher education, workplace

INTRODUCTION

In the Law of the Republic of Indonesia Number 12 Year 2012, it is stated that Higher Education is education after secondary education which includes diploma, undergraduate, master program, doctoral and professional programs, as well as specialist courses, organized by the college based culture Indonesian nation.

Polytechnic are Higher Education which organizes the vocational education in various clumps of Science and / or Technology. Vocational education diploma program is intended for graduates of secondary education or equivalent to develop skills and reasoning in the application of Science and / or Technology. Diploma program prepares students become skilled practitioners to enter the workforce according to their expertise. Polytechnic education learning gains is able to apply knowledge into a product design or process or apply knowledge into the planning and production control.

Article History: Received 2 April 2018 ♦ Revised 6 May 2018 ♦ Accepted 12 June 2018

© 2018 The Author(s). Open Access terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>) apply. The license permits unrestricted use, distribution, and reproduction in any medium, on the condition that users give exact credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if they made any changes.

Indonesian Qualification Framework (IQF) is a framework that integrates competence stages and qualifications between the education and training fields of employment and work experience for granting recognition of the competence of work in various sectors (President of the Republic of Indonesia Regulation No.8 of 2012). In IQF, mastery learning outcomes hereinafter called qualifications obtained through the internalization of knowledge, attitudes, skills, competencies, and the accumulation of work experience. IQF consists of 9 levels of qualification, starting from level 1 as the lowest level up to level 9 as the highest level.

Level qualified for a diploma III equivalent to the lowest level of 5, and a graduate of Bachelor of Applied Diploma IV or equivalent with a minimum level of 6. Description qualification levels 5 and 6 contains the values of Attitude, Skills General and Specialized Skills and Knowledge Mastery. Description of aspects of values required attitude shows the same description for levels 5 and 6, and in this aspect that represent elements of soft skills.

Soft skills or social skills are those personal values and interpersonal skills that determine a person's ability to fit into a particular structure, such as a project team, a rock group, or a company. The skills include personality traits like emotional maturity, eagerness to learn, and willingness to share and embrace new ideas (Nieragden, 2000). Soft skills are those skills that are outside a person's job description. They can include personality characteristics, including character, ethics, and attitudes. They include interpersonal skills such as written and verbal communication, sales and presentation skills, and leadership skills. They also include time and resource management skills including drive, focus, decision making, planning, execution, dealing with task overload as well as self and team evaluation and improvement (Wagiran, 2009). In summary, the definitions discussed suggest many interpretations of soft skills, depending on individual or organizational context and purpose.

The importance of soft skills by Phani Ram in Wagiran (2009) declared soft skills play a vital role for professional success; they help one to excel in the workplace and their importance cannot be denied in this age of information and knowledge. Good soft skills – which are in fact scarce – in the highly competitive corporate world will help you stand out in a milieu of routine job seekers with mediocre skills and talent.

Research conducted by Robert Half (Wagiran, 2009): The Most Valuable Qualifications for Technical Professionals, the first order of 43% is Industry specific knowledge, the second order of 32% is soft skills, and the most important soft skills for Technical Professionals, the first order of 37% is interpersonal skills, the second order of 20% is communication skill.

The urgency of soft skills in the education process can be seen from several studies. Attributes such as leadership, communication, problem solving, time management and teamwork, also known as soft skills, have become critical for entrance into today's job market. Employers are seeking employees with ability to integrate their technical knowledge with soft skills. Therefore, higher institutions need to play a vital role in integrating soft skills into the curriculum (Mai, 2012).

Soft skills in higher education can be seen in Sharma (2009), the specific soft skills to be applied in higher education institutions, & selected seven identified soft skills, i.e. thinking skills and problem solving skills, entrepreneur skills, communication skills, team work force, life-long learning and information management, ethics, moral and professionalism, and leadership. In Indonesian Qualification Framework (2012), from the statement of values as aspects dimensional attitude soft skills at the level 5 and 6, there are six soft skills, i.e. entrepreneur skills, integrity, flexibility, teamwork and cooperation, discipline, and self confidence. And from Soft Competency Scale-Self-administrated Questionnaire (SCS-SAQ) (Ariyani, 2015), contains eight soft skills, i.e. communication skills, teamwork and cooperation, willingness to learn, integrity, leadership, flexibility, motivation and relationship building.

In the other hand, soft skills' need at workplace have various opinions and studies to formulate the various of the soft skills needed in the workplace/business-industrial place (note: in bahasa is DUDI), including from:

Table 1. Soft skills needed in workplace

Spencer & Spencer	Analytical thinking, conceptual thinking, teamwork and cooperation, information seeking, directiveness, team leadership, achievement orientation, concern for order and quality, initiative, interpersonal understanding, customer service orientation, impact and influence, organization awareness, relationship building
Patrick S. O'Brien	Communication skills, logic, group skills, ethics, leadership, organizational skills, effort
Ruben & DeAngelis	Communication in written and oral, skill in meeting, public speaking, problem solving, decision making skills, analytical/cognitive, teamwork, active learner, business orientation, positive behavior, integrity, motivation, flexibility/adaptability, academic achievement, commitment change, loyal, networking, organizational skills, management skills, System perspective, computer skills, economic/ statistic, knowledge of the quality approach, work experience, costumer orientation, extracurricular activity
Steven Cherri	Oral/spoken communication skills, questioning skills, critical thinking, risk taking skills, problem solving skills, teamwork/collaboration skills, honesty, work ethic/dependibility, leadership skills, influencing skills, self motivation/initiative, flexibility/adaptability, interpersonal skills, working under preassure, time management skills, creativity, research skills, organization skills, multicultural skills, computer skills, academic/learning skills, detail orientation, quantitative skills, teaching/training skills
Breitlink	Language proficiency, teamwork, work ethic, courtesy, confirmity to prevailing norms, self discipline and self confidence
Nieragden	Delegating skills, listening skills, presentation skills, problem solving, system thinking, troubleshooting, attitude, awareness, conflict handling, cooperation, diversity, tolerance, etiquette, interlocutor, orientaton, teamwork, willingness, compenstaion, stategies decision, making decision, learning, willingness self, assessment self, discipline, self marketing, stress resistance
NACE, USA	Communication skills, analytical thinking, teamwork skills, honesty/integrity, ethics, leadership, interpersonal skills, motivation/initiative, adaptability, computer skills, organization skills, detail orientation, self confidence, humble
Rilmar	Entrepreneurial leadership skills, oral communication skills, ability of communicating ideas effectively in teams, leadership in problem solving (problem solving), thinking skills and solve problems and communicate, an empathic andpositive behavior, organizational commitment, in team leadership skills, make a proposal of business skills, non-verbal communication skills, provide skills training, coach, encourage the team, with the entrepreneurial ethic and positive behavior, professionalism in work, the skills to respond well, communicating skills oral, and in team work skills and delegation skills.

The compilation based on the similarity of soft skills needed in workplace, it can be screened into 15 soft skills, i.e. thinking skills & problem solving and decision making, entrepreneur skills, communication skills, teamwork and cooperation, willingness to learn (life-long learning and information management), integrity, leadership, flexibility/ adaptability, motivation, relationship building, detail orientation, discipline, organizational commitment, organzation skills, self confidence.

LOMA's Competency Dictionary is a dictionary containing a comprehensive generic competencies that can be used to build a competency model that is effective in an organization / company. To build a competency model, there is a wider selection, covering 14 generic competencies and specific competencies 46 (See Table 2).

Table 2. Generic & Specific Competency LOMA's

		GENERIC	SPECIFIC		
PERSONAL ATTRIBUTES	INTERACTION SKILLS	INTERPERSONAL COMMUNICATION	PROVIDING FEEDBACK	1	
			LISTENING SKILLS	2	
		DEVELOPING & MAINTAINING RELATIONSHIP	INTERPERSONAL SENSIVITY	3	
			RESOLVING CONFLICTS	4	
			SERVICE ORIENTATION	5	
		LEADERSHIP SKILLS	TEAM ORIENTATION	6	
			MOTIVATING OTHERS	7	
			COACHING	8	
			INFLUENCING SKILLS	9	
	WORK ORIENTATION	DEPENDABILITY	PROFESSIONAL INTEGRITY	10	
			WORKING AUTONOMOUSLY	11	
		PERSISTENCE	12		
		PERSONAL MOTIVATION	GOOL ORIENTATION	13	
			TAKING OWNERSHIP	14	
	SELF-MANAGEMENT SKILLS		INITIATIVE	15	
			SELF CONFIDENCE	16	
			STRESS TOLERANCE	17	
	OPENNESS TO NEW EXPERIENCE	CONTINOUS LEARNING ORIENTATION	ABILITY TO MAINTAIN COMPOSURE	18	
			SELF IMPROVEMENT ORIENTATION	19	
		FLEXIBILITY	WILLINENGNES TO LEARN	20	
			ADAPTABILITY	21	
	COGNITIVE ABILITIES	COMMUNICATION SKILLS	RESOURCEFULNESS	22	
			CREATIVITY	23	
			PRESENTATION SKILLS	24	
		QUANTITATIVE SKILLS	READING COMPREHENSION	25	
			WRITING SKILLS	26	
			ORAL COMMUNICATION	27	
			NUMERICAL REASONING	28	
			ARITHMETIC COMPUTATION	29	
			USING TABLES & GRAPHS	30	
		ANALYTICAL SKILLS	PLANNING & ORGANIZING	31	
			INFORMATION MGT SKILLS	32	
			PROBLEM ANALYSIS	33	
			DECISION MAKING	34	
			ABILITY TO LEARN & FOLLOW PROCEDURES	35	
			MULTITASKING	36	
			ABILITY TO DEAL WITH COMPLEXITY	37	
		PERCEPTUAL ABILITIES		TIME MGT	38
				CODING & CONVERTING	39
	PROOFING TEXT & NUMBERS			40	
	BUSINESS KNOWLEDGE	ORGANIZATIONAL KNOWLEDGE	DETAIL ORIENTATION	41	
			RESOURSCE MGT	42	
		JOB SPECIFIC KNOWLEDGE	PRACTICAL BUSINESS ORIENTATION	43	
			KEYBOARD SKILLS	44	
			TECHNICAL KNOWLEDGE	45	
			COMPUTER LITERACY	46	

METHODS

This research is qualitative analysis with Grounded Research method. The procedure of collecting data in this research, including qualitative collecting documents, such as public documents, such as paper (Creswell, 2010). The method of analysis Grounded Research (Moleong, 2010) is a constant comparison method, which regularly compares the data with others, and then regularly compare the category with other categories.

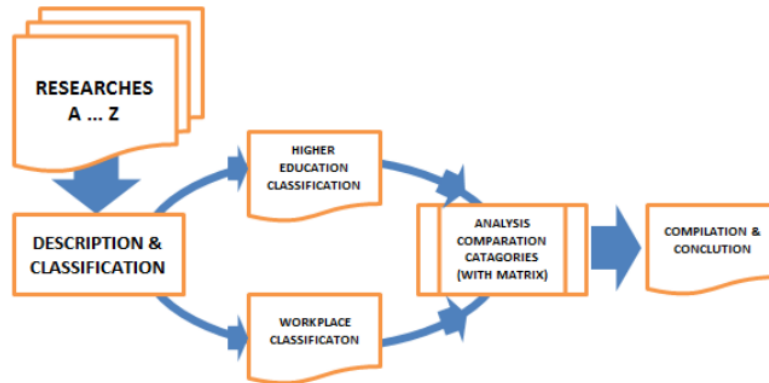


Figure 1. Flowchart of this research

RESULTS AND DISCUSSION

The mindset of the study (See Figure 2) as follows: The first step is to develop a comprehensive and thorough description of some of the results of research, namely Sharma' research, SCS-SAQ POLMAN, IQF and 8 sources of research in the workplace. The next step is classification, which is sifting through data and combine it back. Furthermore, creating categories, namely the activities of transferring portions of data from one data to other data. Next create a relationship, as an empirical basis for linking categories. To connect between the categories, are used in the form of a matrix diagrams and charts. These matrices are used to make comparisons between the cases, and diagrams are used to present the shape and scope of the concepts and relationships in the analysis. The use of special signs on the diagram to help explain the relationship data. After getting compilation of data soft skills from various sources and then compile the results of the comparison return to the categorization of LOMA's Competency Dictionary and the results obtained 12 soft skills are required.

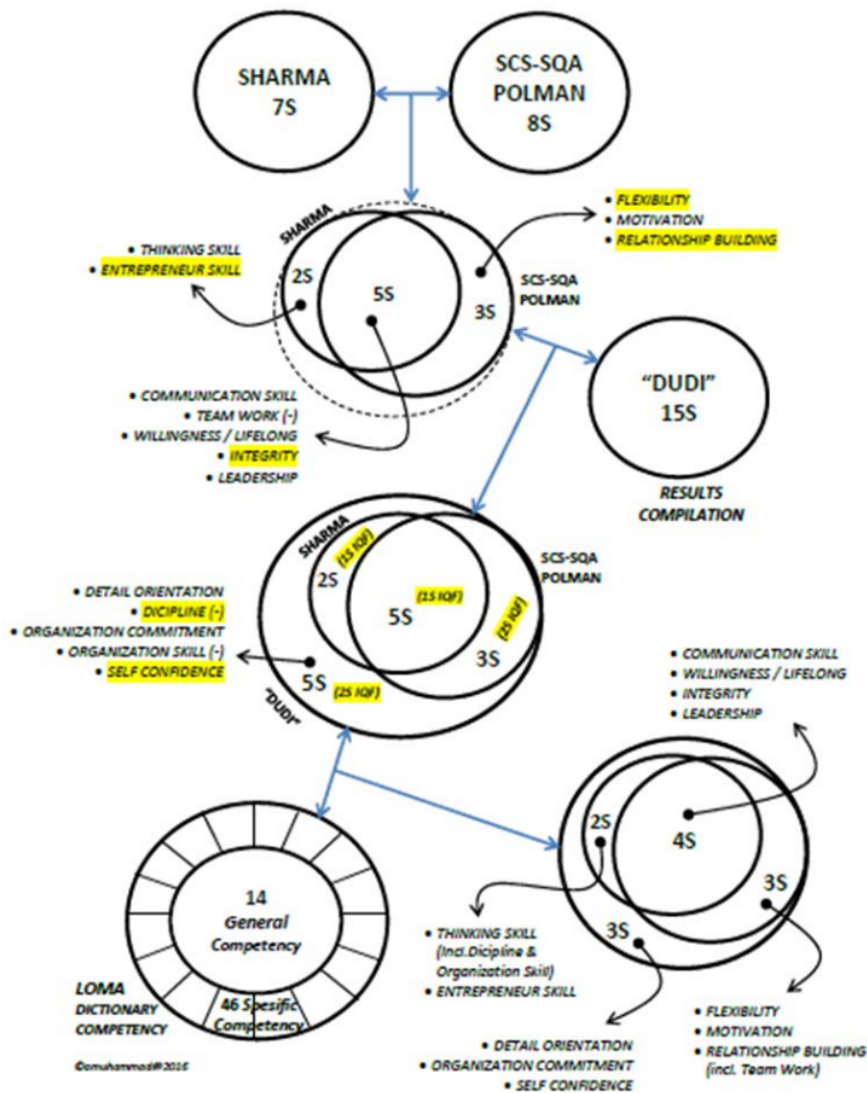


Figure 2. The mindset of the study

Compilation between Sharma, IQF, SCS-SQA POLMAN and DUDI

The compilation (see Table 3) indicate the existence of 10 soft skills with the composition of two soft skills of Sharma not in SCS-SAQ Polman, 3 soft skills of SCS-SAQ Polman not in Sharma, and there are 5 the same soft skills of the slices both. Soft skills of IQF i.e. entrepreneur skills, integrity, flexibility, teamwork and cooperation, discipline and self confidence spread on every slice of Sharma, SCS-SQA and DUDI.

Table 3. Compilation between Sharma, IQF, SCS-SQA POLMAN and DUDI

SHARMA, A.	SCS-SAQ POLMAN	IQF	"DUDI" (WORKPLACE)	
1	2	3	4	
Thinking skill and Problem solving skill			Thinking skills and problem solving & decision making skill	2 SHARMA - Incl.(1) IQF
Entrepreneur Skill		Entrepreneur Skill	Entrepreneur skill	
Communicative Skill	Communication Skill		Communication skill	5 SHARMA - Incl. (5) SCS-SAQ - Incl.(1) IQF
Team Work Force	Teamwork & Cooperation		Team work & cooperation	
Life-long learning and Information Management	Willingness To Learn		Willingness to learn (life long learning & information management)	
Ethics, Moral and Professionalism	Integrity	Integrity	Integrity (integrity, ethics, moral and professionalism)	
Leadership Skill	Leadership		Leadership	
	Flexibility	Flexibility	Flexibility / adaptability	3 SCS-SAQ - Incl.(2) IQF
	Motivation		Motivation	
	Relationship Building	Teamwork & Cooperation	Relationship Building	
		Discipline	Detail orientation	5 "DUDI" - Incl.(2) IQF
			Discipline	
			Organization Commitment	
			Organizational skill	
		Self confidence	Self confidence	

Joint Compilation between Result Compilation and Correction of LOMA's

Correction with Dictionary Competency LOMA's (See Table 4 Column 2), are : Teamwork and Cooperation in research Sharma, SCS-SAQ Polman, IQF and DUDI, can be categorized in the soft skills of Relationship Building, and Discipline on IQF & DUDI, and Organizational Skill on DUDI, can be categorized as soft skills of Thinking Skills. Compiling a combination of Sharma, SCS-SAQ Polman, IQF and DUDI, and then corrected by the soft skills competencies contained in LOMA's Competency Dictionary, obtained by compiling conclusions soft skills as much as 12 soft skills as shown in Table 4 Column 3 below.

Table 4. Joint compilation between result compilation and correction of LOMA's Competency Dictionary

RESULT COMPILATION WITH "DUDI"	CORRECTION LOMA'S	CONCLUSION COMPILATION	
1	2	3	
Thinking skills and problem solving & decision making skill	Discipline Organizational skill	Thinking Skill	2 Incl. Discipline & Organizational skill
Entrepreneur skill	✓	Entrepreneur Skill	
Communication skill	✓	Communication Skill	4 not ind. Team work & Coop.
Team work & cooperation			
Willingness to learn (life long learning & information management)	✓	Life-long Learning	
Integrity (integrity, ethics, moral and professionalism)	✓	Integrity	
Leadership	✓	Leadership	
Flexibility / adaptability	✓	Flexibility	3 Teamwork & Coop. entry in the category Relationship Building
Motivation	✓	Motivation	
Relationship Building	Teamwork & Cooperation	Relationship Building	
Detail orientation	✓	Detail orientation	2 Discipline & Organizational skill entry in the category Thinking Skill
Discipline	✓		
Organization Commitment	✓	Organization Commitment	
Organizational skill			
Self confidence	✓	Self confidence	

CONCLUSIONS AND RECOMMENDATIONS

Based on a compilation of Tables 3 until 4 above, it can be concluded that the soft skills for polytechnic students in Indonesia required the existence of 12 soft skills, i.e. Commitment, Communication Skill, Detail Orientation, Entrepreneur Skill, Flexibility, Integrity, Leadership, Lifelong Learning, Motivation, Relationship Building, Self Confidence, and Thinking Skills.

After getting 12 soft skills required for polytechnic students, the next research step is to develop an instrument to measure the 12 soft skills which is owned by students and no less important is to integrate soft skills into the curriculum in higher education specially in polytechnic. Another next study as the recommendation is to assess the ranking of the 12 soft skills, with the level of importance of each soft skills, in order to obtain the soft skills that should have (must have) and minimal owned (have) by polytechnic students in Indonesia. The results of this study are expected to be used for the higher education particular in polytechnic, and can be filed on the intellectual property/patent documents in Indonesia.

ACKNOWLEDGEMENTS

This research was supported by the Competitive Grant 2016 (No.001/PL11.20.23 /SPN/PL/4.2016) from the Ministry of Research Technology and Higher Education, Republic of Indonesia.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Achmad Muhammad holds a Magister of Management (MM), Lecturer and Researcher of Socio Manufacture Department, Politeknik Manufaktur Bandung, Indonesia.

Emma Dwi Ariyani holds a Magister of Science (M.Si.), Lecturer and Researcher of Socio Manufacture Department, Politeknik Manufaktur Bandung, Indonesia.

Supriyadi Sadikin holds a Magister of Science (M.Si.), Lecturer and Researcher of Socio Manufacture Department, Politeknik Manufaktur Bandung, Indonesia.

REFERENCES

- Ariyani, E. D., Muhammad, A., & Sadikin, S. (2015). *Mengembangkan model soft competency scale dalam pengukuran nilai indeks soft skills mahasiswa (studi kasus pada mahasiswa Politeknik Manufaktur Negeri Bandung)*. Makalah presentasi Temu Ilmiah di Universitas Pancasila: Jakarta.
- Cresswell, J. W. (2010). *Research Design. Pendekatan Kualitatif, Kuantitatif, dan Mixed*. Edisi Ketiga. Pustaka Pelajar. Yogyakarta.
- LOMA, G. (1998). *Information that works: LOMA's Competency Dictionary*. Self Published.
- Mai, R. C. (2012). Developing Soft Skills in Malaysian Polytechnic Students: Perspective of Employers and Students. *Asian Journal of Management Science and Education*, 1(2), July 2012.
- Moleong, L. J. (2010). *Metodologi Penelitian Kualitatif*. PT Remaja Rosdakarya. Bandung.
- Nieragden, G. (2000). The Soft Skills of Business English. *The weekly column*. Article 28, September 2000. Available at <http://www.eltnewsletter.com/back/September2000/art282000.htm/>
- Peraturan Presiden Republik Indonesia Nomor 8 Tahun 2012 Tentang Kerangka Kualifikasi Nasional Indonesia. Jakarta.
- Rilman, A. A. D. (2013). Analisis Faktor Kompetensi Soft Skills Mahasiswa Yang Dibutuhkan Dunia Kerja Berdasarkan Persepsi Manajer Dan Hrd Perusahaan. *Jurnal Manajemen*. Volume XVII. Nomor 02. Halaman 160-174.
- Ruben, B., & DeAngelis, J. (1998). Succeeding at work: Skills and competencies needed by college and university graduates in the work place. the Total Quality Forum, VIII Transforming Our Organizations through University/Industry Collaboration. Madison: University of Wisconsin.
- Sharma, A. (2009). Importance of Soft Skills Development In Education. Posted by Vishal Jain. February 22.
- Spencer, L. M., & Spencer, S. M. (1993). *Competence At Work: Models for Superior Performance*. John Wiley & Sons. Inc. New York
- Undang-Undang Republik Indonesia Nomor 12 Tahun 2012 Tentang Pendidikan Tinggi. Jakarta.

Wagiran. (2009). *Paradigma Peningkatan Mutu Lulusan SMK Melalui Integrasi Soft Skills Untuk Menghasilkan Lulusan Unggul Dan Berdaya Saing*. Makalah disajikan dalam Seminar Nasional Paradigma Baru Mutu Pendidikan di Indonesia. Lembaga Penelitian Universitas Negeri Yogyakarta, Yogyakarta, 25 April.



Soft Skills of Polytechnic Students in Indonesia Based on Comparative Analysis Data According to the Needs of Higher Education and Workplace

ORIGINALITY REPORT

13%	13%	0%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	docshare.tips Internet Source	3%
2	www.ajmse.leena-luna.co.jp Internet Source	3%
3	Submitted to Universitas Sebelas Maret Student Paper	3%
4	ir.lib.shimane-u.ac.jp Internet Source	2%
5	Submitted to University of Southern Mississippi Student Paper	2%

Exclude quotes On Exclude matches < 60 words
Exclude bibliography On

Soft Skills of Polytechnic Students in Indonesia Based on Comparative Analysis Data According to the Needs of Higher Education and Workplace

GRADEMARK REPORT

FINAL GRADE

/0

GENERAL COMMENTS

Instructor

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9
