Technical and Soft Skills of University Graduates in Thailand

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Abstract

Technical and soft skills development has been recognized for its prime importance in producing graduates at Thai universities. Both national and ASEAN standards require human or soft skills for graduates to perform well in collaborative tasks at work. This study examined university graduates' perception of their technical skills in the subject areas and soft skills as existing or lacking in current competency. The participants were 116 university graduates employed by public and business organizations selected by accessibility and voluntary participation. They responded to the online semi-opened questionnaire on their perception of both technical and soft skills competencies demanded on the job. They were also asked to identify what was lacking in the university programs in equipping graduates with both types of skills. The finding revealed that the graduates under study were rather confident in their technical than soft skills. They pointed to urgency for soft skills competency development in latest digital skills, speech communication and effective language interactions. The results of the study obviously call for program developers to balance the orientation in the specialized subject area and that in human or soft skills development for the graduates to function well in collaborative work as required in organizations to attain the expected goals in competitive operations now and beyond.

Keywords: Technical skills, soft skills, skill competency development, competency perception,
university graduates

1. Introduction

All higher education institutions in Thailand have prepared their graduates for the job market with good technical competencies in knowledge and skills in specialized areas through various programs. They are well aware that graduates need to be equipped with appropriate human skills or soft skills to be able to work collaboratively in team work and contact customers tactfully. It is generally known that when employees proceed further in their career, more soft skills competencies can be trained via mentoring and development (Weber, Crawford, Lee & Dennison, 2013). Still, this is a critical issue on technical skills being developed within a specific program, whereas soft skills require the work process of an organization culture and human interactions to attain the expected levels (Wetsanarat, 2021). Thai higher education institutions need to observe the Association of Southeast

Asian Nations (ASEAN) Standards on human or soft skills, like digital literacy, communication skills, language abilities, initiative and creativity, life skills management, stress management and flexibility or willingness to adjust and cope with change. These identified standards are integrated into the vocationally-oriented programs in Thailand (Office of Standards for Vocational Education and Profession, 2008; Office of the Vocational Education Commission, 2008a, 2008b). Particularly, Latthasaksiri (2021) emphasized stress management skills to keep a good balance between life and work and to ensure that stress at work be at a level that yields productivity rather than depression. In such a scenario of soft skills requirement, these institutions typically use interim projects on soft skills development, followed by a series of lectures and workshops prior to or as part of final graduating orientation.

In this study, the researchers examined university graduates' perception of their technical skills in the subject areas and soft skills as existing or lacking in current competencies. The participating university graduates were asked provide data on their technical and soft skills at work as well as identify the technical/ soft skills development most needed in their career path to enable them to fit in and do well in their selected organizations. It was expected that the obtained findings could generate practical implications for universities to design and execute soft skills development programs suitable for their graduates to meet both the national and ASEAN standards. In addition, public and business organizations can also use the research results for their in-service human resource development programs as seen appropriate.

2. Selected Literature Review on Soft Skills Development

Upon entering the job market, employers tend to look for university graduates with good work attitude, effective time management and soft skills competency (Pholsward, 2017, 2022). Purdue, Ninemeier & Woods (2022) emphasized the importance of attitude, personality traits, motivation of individuals and willingness to learn new things at work. Weber, Finley, Crawford & Rivera Jr. (2009) asserted that individual employees' competencies should be pertinent to the goal of an organization. These competencies rest upon three elements known as knowledge, skills and attributes (KSA). The research team put these elements at three levels by assigned roles or tasks for employees (1) *threshold* for selection or recruitment, (2) *standard* for appraisal on the job, and (3) *ideal or desired* for training needs at the entry and developmental levels.

Weber, Finley, Crawford & Rivera Jr. (2009) noted that hard skills competencies are relatively easier to develop via training programs by organizations while soft skills competencies could be difficult to acquire and critically take time when moving up to managerial positions. Weber, Crawford, Lee & Dennison (2013) also supported this point on training time for soft skills development in that soft skills competencies tend to be done via mentoring for self-development. Similarly, Wetsanarat (2021) reported the research finding along the same notion on difficulty in soft skills training in that knowledge is the easiest part to impart to the employees, and skills and attributes take more time to attain the expected levels.

Testa & Sipe (2012) pointed out that soft skills competencies are required most in technically skilled service providers or employees in charge of customer relations, simply

because customers look for impressive services and experiences that are based on employees' human or soft skills. Such soft skills competencies are also demanded most in those employees in managerial positions and team leaders to be able to inspire, motivate and encourage followers or team members toward the identified organizational goals.

As for performance competency models, Langdon & Marrelli (2002) used *Language of Work* or LOW model to identify competencies of each employee using *performance standards* as the basis for personnel development. Wetsanarat (2021) studied competencies required in the travel incentive tourism industry by using the three elements developed by Weber, Finley, Crawford & Rivera Jr. (2009). The researcher interviewed 127 stakeholders or incentive travel planners under Thailand's Incentive and Convention Association (TICA) for elaborated details on knowledge, skills and attributes at the three levels of employees' performances: threshold, standard and ideal (see Appenndix 2). The researcher emphasized that the productivity and competitiveness of an organization can be realized by personnel with good knowledge, skills and attributes.

As seen in in the previous studies in soft skills competency and development, the earlier researchers highlighted that technical skills cannot do without good human or soft skills in rendering employees' success in their work performance. The present study therefore incorporated the national/ASEAN standards, technical/soft skills, and desirable attributes into the constructed semi-opened questionnaire to obtain data in two perspectives of the participating university graduates' perception toward the existing and desired status of both types of skills. The participants were also requested to identify the aspects of both skills to be trained further in coping with rapid changes in technology and work demands (see Appendix 1).

3. Research Objectives

The study carried two research objectives:

(1) To examine university graduates' perception of their technical skills in the subject areas and soft skills as existing or lacking in current competency.

(2) To identify the technical/ soft skills development most needed by university graduates in their career path to enable them to fit in and do well in their selected organizations.

4. Research Methodology
4.1 Participants

The participants were 116 voluntary university graduates from 40 higher education institutions (shown in Data Set 1) voluntarily responded to the online semi-opened questionnaire. Since the study was exploratory in nature, the researchers set the data to be obtained from 100 participants to observe consistency in response patterns which in turn could reflect representativeness of the group. It should be noted that 116 responses were obtained and the response analysis reflected consistent patterns in their responses. The group therefore was taken as an acceptable and valid in providing needed data.

4.2 Research Instrument

The researchers constructed a research instrument in the form of a semi-opened questionnaire to collect both quantitative and qualitative data from the participants. Since the research instrument was diagnostic in nature, the researchers focused on content relevancy and validity of the question items as assessed by ten specialists in communication and soft skills development. The specialists' feedback was used in revising the instrument into its final version for data collection.

The instrument contained two parts: the first part on the participants' demographic variables, and the second on the participants' perception on the existing/ desired technical and soft skills, together with suggestions for needed training. (See the research instrument in Appendix 1.)

The first part secured 13 demographic variables: (1) Gender, (2) Age, (3) Last educational qualification obtained, (4) Name of the university last attended, (5) Current occupation, (6) Current occupation by your choice/ by your parents' choice, (7) Number of years in the current occupation, (8) Position in the current occupation, (9) Current workplace, (10) Current workplace rate of hourly or monthly payment (by estimate, if applicable), (11) Your most competent technical skills (please specify), (12) Your most competent human or soft skills (please specify), (13) Your need for new technical/ soft skills (please specify).

The second part contained: (1) Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized Areas (6 items), (2) Please give additional information on your technical skills on the job, if any, (3) Soft Skills Required of University Graduates (16 items), and (4) Please give additional information on your soft skills on the job, if any. (See the research instrument in Appendix 1.)

5. Data Collection and Analysis

The researchers collected data from the participants via the online semi-opened questionnaire. It took about two months in August-September 2023 to obtain the expected target of 100 responses; the final total was 116 responses.

The obtained quantitative data were analyzed by frequency and percentage, and mean and standard deviation to see variability among the participants' perception toward their technical and soft skills trained or acquired in the university programs and work duties in their business/ public organizations. The qualitative data from the participants' responses to the open-ended questions were analyzed by classification of content analysis in terms of frequency and percentage.

6. Results

The results of the study are reported by the research objectives on the participants' perception of their existing and desired technical and soft skills, followed by the information based on the sequence of the semi-opened questionnaire, i.e., the participants' perception of their existing/ desired technical and soft skills on a rating scale of 1 low to 5 high, followed by additional information voluntarily provided.

6.1 The Participants' Demographic Data

As shown in Data Set 1, the majority of the participants (N=116) was female (73 or 62.93%), and about one-third was in the age range of 40+ (35 or 30.17%) with dominant academic qualification at the bachelor's level (57 or 49.14%). They were mainly graduates from the universities in the central part of Thailand (22 of 79 or 55.00%).

About one-third of those who volunteered information on their work for business organizations (20 of 64 or 31.25%) by their own choice. Those participating graduates had their work experience for 6-10 years (21 of 66 or 31.82%), and their current positions appeared scattered but dominantly in the field of education: Teacher (17 of 77 or 22.08%), Educational administrator (13 of 77 or 16.88%), Administrative officer (12 of 77 or 15.58%), followed by other 13 positions in smaller number. Their current workplaces were varied, but dominantly in three categories: Enterprise (13 of 93 or 13.98%), Municipality (13 of 93 or 13.98%), Government university (11 of 93 or 11.83%), and Government unit (10 of 93 or 10.75%). The majority specified their current monthly rate of payment: Up to 15,000 (20 of 83 or 24.10%), 16,000-25,000 (11 of 83 or 13.25%), and 26,000-35,000 (18 of 83 or 21.69%).

Data Set 1: Participants' Demographic Variables by Frequency and Percentage (Total=116)

- Gender: Male=33 (37.07%), Female=73 (62.93%)
- Age: 20+ =33 (28.45%), 30+ =29 (25.00%), 40+ =35 (30.17%), 50+ =13 (11.21%), 60+ =6 (5.17%)
- Last educational qualification obtained: Bachelor's=57 (49.14%), Master's=31 (26.72%), Doctorate=28 (24.14%)
- University last attended: Total responses=79 (68.10%), No answer=37 (31.90%)
    Total universities: 40 (100%): Central=22 (55.00%), North=3 (7.5%), Northeast=10 (25.00%), South=1 (2.5%), Other=4 (10.00%)
- Current occupation: Total responses=64 (55.17%), No answer=52 (44.83%)
    Of 64 responses: Company employee=20 (31.25%), Government officer=16 (25.00%), Teacher=14 (21.88%), Nurse=2 (3.125%), Other=12 (18.75%)
- Current occupation by personal choice: Similar to those responses under "Current occupation"
- Current occupation by parents' choice: Similar to those responses under "Current occupation," except Medicine doctor=1 (0.86%), Soldier=1 (0.86%)
- Number of years in current occupation: Total responses=66 (56.90%), No answer=50 (43.10%)
    Of 66 responses: 1-5=18 (27.27%), 6-10=21 (31.82%), 11-15=6 (9.09%), 16-20=9 (13.64%), 21-25=7 (10.61%), 26-30=2 (3.03%), 30+=2 (3.03%), Not working=1 (1.51%)
- Position in current occupation: Total responses=77 (66.38%), No answer=39 (33.62%)
    Of 77 responses: Teacher=17 (22.08%), Educational administrator=13 (16.88%), Administrative officer=12 (15.58%), Departmental head=9 (11.69%), Accounting officer=7 (9.09%), Engineer=4 (5.19%), Analyst=3 (3.90%), Academic officer=3 (3.90%), Nurse=2 (2.59%), Government officer=1 (1.30%), IT officer=1 (1.30%), Retiree=1 (1.30%) , Sales officer=1 (1.30%), Self-employed=1 (1.30%) , Student=1 (1.30%), Technician=1 (1.30%)

- Current workplace: Total responses=93 (80.17%), No answer=23 (19.83%)

    Of 93 responses: Enterprise=13 (13.98%), Municipality
    =13 (13.98%),
    Government university=11 (11.83%), Government unit=10
    (10.75%), Secondary school=9 (9.68%),
    College=8 (8.60%), Primary school=8 (8.60%), Private
    university=6 (6.45%), Government enterprise=3 (3.22%),
    Hospital=3 (3.22%), Bank=2 (2.15%), Cooperative=2 (2.15%),
    Hotel=2 (2.15%), Foundation=1 (1.08%), Home=1 (1.08%),
    Kindergarten=1 (1.08%)

- Current monthly rate of payment: Total responses=83 (71.55%), No answer=33 (28.45%)

    Of 83 responses: Up to 15,000=20 (24.10%),
    16,000-25,000=11 (13.25%), 26,000-35,000=18 (21.69%),
    36,000-45,000=9 (10.84%), 46,000-55,000=6 (7.23%),
    56,000-65,000=5 (6.03%), 66,000+ =7 (8.43%),
    Not specified=7 (8.43%)

6.2 The Participants' Identified Most Competent Technical/ Soft/ Newly Needed Skills

As reported in Data Det 2, the participants identified their most competent technical skills as Teaching (22 of 98 or 22.45%), Digital skills (12 of 98 or 12.25%), Finance and accounting (11 of 98 or 11.23%), Management (10 of 98 or 10.21%),), Secretarial work (7 of 98 or 7.14%) and Communication (7 of 98 or 6.12%. There were also other 13 skills from the frequency of 5 or less.

As for their most competent human or soft skills, the participants identified four types of frequency 24-6: Communication (24 of 87 or 27.59%), Speaking skills (15 of 87 or 17.24%), Human relations (12 of 87 or 13.79%), and Four language skills (6 of 87 or 6.90%). There were also other 12 skills from the frequency of 5 or less.

The participants identified their needs for new soft skills in five types with frequency of 15-7: Digital skills (15 of 82 or 18.29%), English (10 of 82 or 12.20%), Critical thinking skills (8 of 82 or 9.76%), Communication skills (8 of 82 or 9.76%), and Speaking skills (7 of 82 or 8.54%). There were also other 14 skills from the frequency of 5 or less.

Data Set 2: Participants' Identified Most Competent Technical/ Soft/ Newly Needed Skills
(Total=116)

- Your most competent technical skills: Total responses=98 (84.48%), No answer=18 (15.52%)

    Of 98 responses: Teaching=22 (22.45%), Digital skills
    =12 (12.25%), Finance and accounting=11 (11.23%), Management=10
    (10.21%), Secretarial work=7 (7.14%), Communication=6 (6.12%),
    Research=5 (5.10%), Educational administration=4 (4.08%),
    Nursing=4 (4.08%), Marketing=3 (3.06%), Art=2 (2.04%),
    Engineering=2 (2.04%), English=2 (2.04%), Mathematics=2 (2.04%),
    Procurement=2 (2.04%), Acting=1 (1.02%), Law=1 (1.02%),
    Music=1 (1.02%), Technician's repair and maintenance skills=1 (1.02%)

- Your most competent human or soft skills: Total responses=87 (75.00%), No answer=29 (25.00%)

    Of 87 responses: Communication=24 (27.59%), Speaking skills =15 (17.24%), Human relations=12 (13.79%), Four language skills=6 (6.90%), Persuasion=5 (5.75%), Team work=4 (4.60%), Coordination=3 (3.45%), Discussion=3 (3.45%), Leadership=3 (3.45%), Analytical skills=2 (2.30%), Digital skills=2 (2. 30%), English=2 (2. 30%), Public relations=2 (2. 30%), Thai=2 (2. 30%), Interpersonal skills=1 (1.14%), Problem-solving skills=1 (1.14%)

- Your need for new technical/ soft skills: Total responses=82 (10.69%), No answer=34 (29.31%)

    Of 82 responses: Digital skills=15 (18.29%), English =10 (12.20%), Critical thinking skills=8 (9.76%), Communication skills=8 (9.76%), Speaking skills=7 (8.54%), Stress management=5 (6.10%), Foreign language skills=4 (4.88%), Chinese=3 (3.66%), Leadership skills=3 (3.66%), Listening skills=3 (3.66%), Negotiation skills=3 (3.66%), Persuasion=3 (3.66%), Human relations=2 (2.43%), Presentation skills=2 (2.43%), Team work=2 (2.43%), Accounting=1 (1.22%), Mynmar language=1 (1.22%), Preventive medicine=1 (1.22), Writing skills=1 (1.22%)

6.3 Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized Areas

As seen in Data Set 3, the participants were positive about their technical skills obtained from their specialized university programs as relevant or pertinent to their current occupations. It was obvious that they rated high on the scale as 5 and 4 combined at the level of 75-76%: Technical knowledge of the job, Application of technical knowledge on the job, Modification of technical knowledge on the job, Technical initiative on the job, and Technical creativity on the job. It was obvious that the participants perceived their problem-solving skills on the job very high at the levels of 5 and 4 combined at 83%.

Data Set 3: Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized areas (Total=116)

1. Your technical knowledge of the job (N=116):
   5=43 (37.07%), 4=44 (37.93%), 3=25 (21.55%), 2=1 (0.86%), 1=3 (2.59%)
2. Your application of technical knowledge on the job (N=116):
   5=39 (33.62%), 4=50 (43.11%), 3=24 (20.69%), 2=1 (0.86%), 1=2 (1.72%)
3. Your modification of technical knowledge on the job(N=116):
   5=41 (35.34%), 4=46 (39.66%), 3=25 (21.55%), 2=3 (2.59%), 1=1 (0.86%)
4. Your problem-solving skills on the job (N=116):
   5=43 (37.07%), 4=53 (45.69%), 3=16 (13.79%), 2=3 (2.59%), 1=1 (0.86%)
5. Your technical initiative on the job (N=116):
   5=33 (28.45%), 4=54 (46.55%), 3=23 (19.83%), 2=4 (3.45%), 1=2 (1.72%)
6. Your technical creativity on the job (N=116):
   5=37 (31.90%), 4=51 (43.97%), 3=24 (20.69%), 2=2 (1.72%), 1=2 (1.72%)

6.4 Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized Areas (Total=116): Variability

The researchers rechecked variability in the participants' responses regarding their perception of their existing technical skills, as shown earlier in Data Set 3. The results by means and standard deviation as shown in Table 1 indicate that the participants appeared to agree upon their satisfaction with their university specialized programs (Mean=4.06, S.D.=0.86) and their abilities in using the acquired/ trained technical skills on the job. They also expressed their high confidence in their problem-solving skills (Mean=4.15, S.D.=0.81).

Table 1: Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized Areas (Total=116)

Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized Areas	$\bar{x}$	S.D.	Required Level
1. Your technical knowledge of the job	4.06	0.92	high
2. Your application of technical knowledge on the job	4.06	0.85	high
3. Your modification of technical knowledge on the job	4.06	0.86	high
4. Your problem-solving skills on the job	4.15	0.81	high
5. Your technical initiative on the job	3.96	0.88	Moderate
6. Your technical creativity on the job	4.02	0.86	high
Total	**4.06**	**0.86**	**high**

6.5 Additional Information on Technical Skills on the Job

As shown in Data Set 4, the participants highly valued Digital skills (15 of 71 or 21.14%), English/ foreign language (13 of 71 or 18.31%), and AI (6 of 71 or 8.46%). There were also other 19 skills that show frequency of 5 or less.

Data Set 4: Additional Information on Technical Skills on the Job
Total responses=71/116 (61.21%)
Of 71 responses:
Digital skills (15 or 21.14%)
English/ foreign language (13 or 18.31%)
AI (6 or 8.46%)
Self-development (5 or 7.04%)
Leadership (4 or 5.63%)
Accounting/ finance (3 or 4.22%)
Communication (3 or 4.22%)
Procurement (3 or 4.22%)
Teaching media and skills (3 or 4.22%)
Teamwork (3 or 4.22%)
Critical/ creative thinking (2 or 2.81%)

Learning innovation (1 or 1.41%)

Life skills (1 or 1.41%)

Negotiation (1 or 1.41%)

Presentation skills (1 or 1.41%)

Quality assurance (1 or 1.41)

Research (1 or 1.41%)

Risk management (1 or 1.41)

Sales/ marketing (1 or 1.41%)

Speaking (1 or 1.41%)

Stress management (1 or 1.41%)

Tax documentation (1 or 1.41%)

6.6 Soft Skills Required of University Graduates

When considering Data Set 4, the researchers were able to detect confidence in the participants' soft skills and exiting and desired at work. The participants' perception of 16 soft skills varied in heir confidence of their existing skills, as seen in *the percentages of scales 5 and 4 combined.* It was obvious that 90% revealed high confidence, followed by descending percentages at 80%, 70%, 60%, 50%, 40% and 30% as reported in Data Set 4 as follows:

Soft Skills by Item Number and Description

15. Responsibility at work (93.11%)
_____
10. Life skills management (88.80%)
16. Loyalty to workplace (87.93%)
14. Commitment to assigned work (85.35%)
 9. Service-mindedness (87.93%)
 2. Communication skills (85.34%)
12. Change management (81.90%)
 1. Information technology literacy (80.18%)
 7. Creativity (80.18%)
_____
11. Stress management (79.32%)
13. Flexibility (79.32%)
 6. Initiative (76.72%)
_____
 5. Language abilities for communication (64.65%)
_____
 8. Artistic expression (55.17%)
_____
 3. Use of English for communication (40.52%)
_____
 4. Use of ASEAN language(s) for communication (23.27%)
_____

As seen on the list above, the participants appeared less confident in their soft skills regarding English language communication, artistic expression and least confident in the use of ASEAN languages for communication.

Data Set 5: Soft Skills Required of University Graduates (Total=116)

 1. Information technology literacy (N=116):
    5=51 (43.97%), 4=42 (36.21%), 3=19 (16.37%), 2=3 (2.59%), 1=1 (0.86%)
 2. Communication skills (N=116):
    5=58 (50.00%), 4=41 (35.34%), 3=13 (11.21%), 2=3 (2.59%), 1=1 (0.86%)
 3. Use of English for communication (N=116):
    5=22 (18.97%), 4=25 (21.55%), 3=41 (35.34%), 2=20 (17.24%), 1=8 (6.90%)
 4. Use of ASEAN language(s) for communication (N=116):
    5=15 (12.93%), 4=12 (10.34%), 3=51 (43.97%), 2=24 (20.69%), 1=14 (12.07%)
 5. Language abilities for communication (N=116):
    5=40 (34.48%), 4=35 (30.17%), 3=32 (27.59%), 2=6 (5.17%), 1=3 (2.59%)
 6. Initiative (N=116):
     5=31 (26.72%), 4=58 (50.00%), 3=22 (18.97%), 2=3 (2.59%), 1=2 (1.72%)
 7. Creativity (N=116):
    5=44 (37.93%), 4=49 (42.25%), 3=20 (17.24%), 2=2 (1.72%), 1=1 (0.86%)
 8. Artistic expression (N=116):
    5=26 (22.41%), 4=38 (32.76%), 3=34 (29.31%), 2=17 (14.66%), 1=1 (0.86%)
 9. Service-mindedness (N=116):
    5=68 (58.62%), 4=34 (29.31%), 3=12 (10.35%), 2=1 (0.86%), 1=1 (0.86%)
10. Life skills management (N=116):
    5=71 (61.21%), 4=32 (27.59%), 3=11 (9.48%), 2=1 (0.86%), 1=1 (0.86%)
11. Stress management (N=116):
     5=46 (39.66%), 4=46 (39.66%), 3=20 (17.24%), 2=2 (1.72%), 1=2 (1.72%)
12. Change management (N=116):
     5=49 (42.24%), 4=46 (39.66%), 3=19 (16.38%), 2=1 (0.86%), 1=1 (0.86%)
13. Flexibility (N=116):
    5=50 (43.11%), 4=42 (36.21%), 3=21 (18.10%), 2=2 (1.72%), 1=1 (0.86%)
14. Commitment to assigned work (N=116):
    5=66 (56.90%), 4=33 (28.45%), 3=14 (12.07%), 2=2 (1.72%), 1=1 (0.86%)
15. Responsibility at work (N=116):
    5=91 (78.45%), 4=17 (14.66%), 3=7 (6.03%), 2=0 (0.00%), 1=1 (0.86%)
16. Loyalty to workplace (N=116):
    5=74 (63.79%), 4=28 (24.14%), 3=11 (9.48%), 2=2 (1.72%), 1=1 (0.86%)

6.7 Soft Skills Required of University Graduates: Variability

The researchers rechecked variability in the participants' responses regarding their perception of their existing soft skills, as shown earlier in Data Set 4. The results by means and standard deviation as shown in Table 2 indicate that the participants appeared to agree upon their perception toward their abilities in using the acquired soft skills on the job (Mean=4.08, S.D.=0.88). They also expressed their high confidence in their Life skills management (Mean=4.47, S.D.=0.77), Service-mindedness (Mean=4.43, S.D.=0.78), and Communication skills in general (Mean=4.31, S.D.=0.83). Consistent with Data Set 4, the participants' perception was relatively low in confidence in Use of English for communication (Mean=3.28, S.D.=1.16), and Use of ASEAN language(s) for communication (Mean=2.85, S.D.=1.12).

Table 2: Soft Skills Required of University Graduates (Total=116)

Soft Skills Required of University Graduates	$\bar{x}$	S.D.	Required Level
1. Information technology literacy	4.19	0.86	High
2. Communication skills	4.31	0.83	High
3. Use of English for communication	3.28	1.16	Moderate
4. Use of ASEAN language(s) for communication	2.85	1.12	Low moderate
5. Language abilities for communication	3.88	1.02	Moderate
6. Initiative	3.97	0.84	Moderate
7. Creativity	4.13	0.85	High
8. Artistic expression	3.61	1.01	Moderate
9. Service-mindedness	4.43	0.78	High
10. Life skills management	4.47	0.77	High
11. Stress management	4.13	0.88	High
12. Change management	4.21	0.81	High
13. Flexibility	4.18	0.85	High
14. Commitment to assigned work	4.38	0.83	High
15. Responsibility at work	4.69	0.66	High
16. Loyalty to workplace	4.48	0.80	High
Total	**4.08**	**0.88**	**High**

6.8 Additional Information on Soft Skills on the Job

As shown in Data Set 6 on additional information on soft skills on the job given by the participants, they highly valued Human relations (15 of 66 or 22.72%), Communication skills (11 of 66 or 16.66%), English/ foreign language (8 of 66 or 12.12%), Speaking skills (6 of 66 or 9.09%), and Teamwork (6 of 66 or 9.09%). There were also other 19 skills that show frequency of 5 or less.

Data Set 6: Additional Information on Soft Skills on the Job

Total response=66/116 (56.04%)
Of 66 responses:
Human relations (15 or 22.72%)
Communication skills (11 or 16.66%)
English/ foreign language (8 or 12.12%)
Speaking skills (6 or 9.09%)
Teamwork (6 or 9.09%)
Digital skills (5 or 7.57%)
Open-mindedness (3 or 4.54%)

Psychology (2 or 3.03%)
Social manners (2 or 3.03%))
Analytical thinking (1 or 1.52%)
Creative thinking (1 or 1.52%)
Deep listening (1 or 1.52%)
Leadership (1 or 1.52%)
Life skills (1 or 1.52%)
Persuasion (1 or 1.52%)
Responsibility (1 or 1.52%)
Sales (1 or 1.52%)

7. Discussion of Results and Conclusion

As seen in the demographic data of 116 participants, the participants were from forty universities in Thailand, with the majority from the central region; they were financially secure and with good work experience in their current positions. In this regard, it can be said that they should serve as a valid group in providing data on their existing and desired technical and soft skills as trained from their university program as well as acquired in the in-service training programs of or on the job (see Data Set 1).

In their responses, the participants identified their most competent technical skills on the job as Teaching, followed by Digital skills, Finance and accounting, Management, Secretarial work or Documentation, and Communication. It should be noted that their claimed competency on digital skills at work was somewhat limited (12 of 98 or 12.25%). As for their most competent human or soft skills, the participants dominantly claimed four types of relatively high frequency 24-6: Communication, Speaking skills, Human relations, and Four language skills. They specified their needs for new soft skills in five types with relative high frequency of 15-7: Digital skills, English, Critical thinking skills, Communication skills, and Speaking skills (see Data Set 2).

In the second part of the semi-open questionnaire, the participants were asked to rate their own competency on a scale of 1 low to 5 high regarding six technical skills on the job: technical knowledge, its application and modification, problem-solving, initiative and creativity. It was obvious that the participants perceived their problem-solving skills on the job very high at the levels of 5 and 4 combined at 83%. The participants' perception variability pointed to that their agreement upon their satisfaction with their training in university specialized programs (Mean=4.06, S.D.=0.86) and their abilities in using the acquired/ trained technical skills on the job. Particularly, they highly appraised their problem-solving skills (Mean=4.15, S.D.=0.81) (see Data Set 3 and Table 1)

The participants also rated their competency of 16 specific soft skills derived from the national/ASEAN standards and previous research: Information technology literacy, Communication skills, Use of English for communication, Use of ASEAN language(s) for communication, Language abilities for communication, Initiative, Creativity, Artistic expression, Service-mindedness, Life skills management, Stress management, Change management, Flexibility, Commitment to assigned work, Responsibility at work, Loyalty to workplace. Their item rating revealed confidence in the soft skills both existing and desired at work. The participants' perception of 16 soft skills varied in their confidence of their existing skills, as seen in the high percentages of scales 5 and 4 combined. It was

obvious that 90% revealed high confidence, followed by descending percentages at 80%, such as Responsibility at work (93.11%), Life skills management (88.80%), Loyalty to workplace (88.13%), Commitment to assigned work (85.35%), Service-mindedness (87.93%), Communication skills (85.34%), Change management (81.90%), Information technology literacy (80.18%), Creativity (80.18%). The participants appeared to agree upon their perception toward their abilities in using the acquired soft skills on the job (Mean=4.08, S.D.=0.88). (see Data Set 4 and Table 2).

Undoubtedly, experienced employees tend to be confident in their technical skills and their responses were not beyond the researchers' expectation. They expressed their high confidence in their Life skills management, Service-mindedness, and Communication skills in general. However, their perception was relatively low in confidence in Use of English for communication (Mean=3.28, S.D.=1.16), and Use of ASEAN language(s) for communication (Mean=2.85, S.D.=1.12). We have been well aware of English as weakness in Thai university graduates. As generally known among OECD countries, Thai people have relatively low English proficiency and appear to lack motivation in learning foreign languages even those of the neighboring countries. A new language requires time to acquire in a natural environment or learn in a formal classroom context. Success in language learning lies in learners' open-mindedness. University graduates or employees need to adjust their mindset that communication skills are not formulaic, but exploratory in nature. Developing a new mindset on willingness to interact effectively in a new language for career attainment with open-mindedness, Thai graduates can overcome a mythical obstacle that Thais are weak linguistically (Pholsward, 2018).

Of 16 soft skills, the participants valued Change management (81.90%) and Stress management (79.32%). We know that change and stress are closely related. It is important that employees learn new skills—both technical and soft skills—to be able to do well on their career path toward higher positions. However, stress and burnout are well-recognized as a deterrent factor if not controlled at a level that can stimulate employees to be productive at work. As Latthasaksiri (2021) emphasized, stress management skills keep a good balance between life and work as well as ensure stress at work at a level that yields productivity rather than depression. It is certain that soft skills take time in mentoring and acquiring in the work process of an organization's culture and interactions to attain the expected levels (Weber, Crawford, Lee & Dennison, 2013; Wetsanarat, 2021).

It was noted that the participants were aware of the skills they felt as weaknesses in adding information on the soft skills section dealing with thinking and communication skills and work attitude, particularly Analytical thinking, Creative thinking, Deep listening, Leadership, Life skills, Persuasion, Responsibility, and Sales abilities. These skills are essential in professional development and significant to self-development with a positive mindset (Weber, Finley, Crawford & Rivera Jr., 2009; Pholsward, 2022; Purdue, Ninemeier & Woods, 2022). As seen, the results of the present study and the previous findings of the earlier researchers highlighted the importance of attitude, personality traits, motivation of individuals as embedded in soft skills that in turn can help support initiative and creativity in the technical skills. In this regard, not only universities, but also both public and business organizations need to upgrade their human resource development programs to support and retain their employees for successful performances of the organizations.

8. The Authors

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10. Appendix 1: Research Instrument

A Survey Questionnaire on Technical and Soft Skills of University Graduates
Academic Year 2023

Technical skills refer to knowledge and technical competencies required in an occupation/ specialized area, as specified under section 2.1 in the questionnaire.

Soft skills refer to human skills identified as ASEAN Standards--mainly information technology literacy, communication skills, language abilities, initiative and creativity, life skills management, stress management, and flexibility or willingness to adjust and cope with change, as detailed under section 2.2 in the questionnaire.
Directions:
Dear Respondents:
        This survey questionnaire is from Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR), Nakhon Pathom, Thailand. The purposes are (1) to obtain information on the current conditions of technical and soft skills of university graduates, and (2) to identify those skills that are required by ASEAN standards in university graduates.
        The obtained information from all respondents is treated as group data and kept strictly confidential. The data will be used to provide answers as relevant to the two research objectives. It is expected that the results of the study can give a comprehensive picture of technical and soft skills acquired by university graduates, and generate implications for the direction of higher education institutions in upgrading technical and soft skills by the ASEAN standards in their graduates for relevant career opportunities.
        Rattanakosin International College of Creative Entrepreneurship (RICE) truly appreciates your time and kind assistance in providing needed data for this research project.

Respectfully,
Ruja Pholsward, Ph.D.
Associate Professor
Principal Researcher
_____

The questionnaire contains two parts.

Part 1: Respondents' Demographic Data
Directions: Please fill in the blanks with your data.

Gender: Male ___ Female ___
Age in years: 20+ ___, 30+ ___, 40+ ___, 50+ ___, 60+ ___
Last educational qualification obtained: BA __, MA __, Ph.D. __, Other (please specify)___
Name of the university last attended _____
Current occupation _____
Current occupation by your choice _____ by your parents' choice _____
Number of years in the current occupation _____

Position in the current occupation _____
Current workplace: _____
Current workplace rate of hourly or monthly payment (by estimate, if applicable) _____
Your most competent technical skills (please specify) _____
Your most competent human or soft skills (please specify) _____
Your need for new technical/ soft skills (please specify) _____

Part 2: Technical and Soft Skills of University Graduates as Pertinent to Occupations/
        Specialized areas
Directions: Please provide your data by specifying the level of your competency of the given
technical and soft skills from (1) low to (5) high. Please select one figure for each item.

2.1 Technical Skills Required of University Graduates as Pertinent to Occupations/ Specialized
Areas

1. Your technical knowledge of the job: ……………………………………… 1 2 3 4 5
2. Your application of technical knowledge on the job: …………………………1 2 3 4 5
3. Your modification of technical knowledge on the job: ………………………1 2 3 4 5
4. Your problem-solving skills on the job: ……………………………………..1 2 3 4 5
5. Your technical initiative on the job: …………………………………………1 2 3 4 5
6. Your technical creativity on the job: …………………………………… ..1 2 3 4 5
Please give additional information on your technical skills on the job, if any.

_____

_____

_____

_____

2.2 Soft Skills Required of University Graduates:

1. Information technology literacy: …………………………………..... 1 2 3 4 5
2. Communication skills: ……………………………………………... 1 2 3 4 5
3. Use of English for communication: ……………………………… 1 2 3 4 5
4. Use of ASEAN language(s) for communication: …………………. 1 2 3 4 5
5. Language abilities for communication: ………………………….... 1 2 3 4 5
6. Initiative: …………………………………………………………. 1 2 3 4 5
7. Creativity: ………………………………………………………… 1 2 3 4 5
8. Artistic expression: ……………………………………………….. 1 2 3 4 5
9. Service-mindedness: ……………………………………………… 1 2 3 4 5
10. Life skills management: ………………………………………….. 1 2 3 4 5
11. Stress management: ……………………………………………… 1 2 3 4 5
12. Change management: ……………………………………………. 1 2 3 4 5
13. Flexibility: ………………………………………………………. 1 2 3 4 5
14. Commitment to assigned work: …………………………………. 1 2 3 4 5
15. Responsibility at work: …………………………………………. 1 2 3 4 5
16. Loyalty to workplace: …………………………………………... 1 2 3 4 5

Please give additional information on your soft skills on the job, if any.

_____

_____

_____

11. Appendix 2: Details of Knowledge, Skills and Attributes at Three Levels (Wetsanarat, 2022)
Summary of Knowledge, Skills and Attributes at the Levels of Threshold, Standard and Ideal

Level 1: Threshold

Knowledge
Product knowledge: characteristics, costs, availability
Customer knowledge: their objectives, needs, business goals, key success factors, and decision process
Market intelligence: market trends, competitive intelligence
Knowledge about current affairs: domestic and international
Knowledge about project: structure, characteristics, components
Knowledge about internal working process in the organization
Knowledge about travel program arrangement: planning, operations, logistical requirement, timing, safety and security specification and requirement, and crowd management
Knowledge about legal issues pertinent to different MICE events

Skills
Communication skills: concise/precise/logical
Teamwork and team planning
Presentation skills: clear and logical
Basic cost and revenue
Task coordination
English proficiency
Computer literacy
Correspondence, and rank and file appropriate for functional areas and information recipients [Documentation and information handling]
Project management skills: according to the agreement, and timeline

Attributes
Acumen [the ability to make good judgements and quick decisions, usually in a business context, like "business acumen"]
Integrity
Optimism toward problems and obstacles
Observance and detail oriented
Service mind
Change adaptation
Personality: trust commanding, leadership
Good memory about work related issues
Intercultural awareness
Assertiveness with politeness
Pride in working organization
Avoid price cutting
Work experience in Incentive Travel Business

Level 2: Standard

Knowledge
Knowledge about adaptation, mixing, matching project components to create phenomenal experience
Knowledge about the working process of other departments

Skills
Strategic questioning
Negotiation: systematic, fair, responsive
Problem solving: unplanned situation
Planning skills: anticipative of potential problems
Presentation skills through CAD

Attributes
Neatness and meticulousness
Goal-oriented attitude
Dependability

Level 3: Ideal

Knowledge
Knowledge about other MICE events and their success factors

Skills
Communication: tactical with social acumen
Conflict management: systematic, integrative
Communication skills: charismatic and persuasive

Attributes
Conflict management to create best practice for the project

End of Appendix 2