Comparative Perspective of Learning Outcomes of International University Students Based on the Thai Qualifications Framework for Higher Education Standards

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Abstract

The objectives of this research were 1) to study the level of opinions on the learning outcomes according to the Thai Qualifications Framework (TQF) of students in ethics and morals, knowledge, cognitive skills, interpersonal and responsibility skills, and numerical analysis, communication, and information technology skills, and 2) to compare the differences between the opinions of students' learning outcomes according to the TQF on ethics and morals, knowledge, cognitive skills, interpersonal and responsibility skills, and numerical analysis, communication and information technology skills classified by personal factors. The sample group consisted of 315 students. Data was collected using a questionnaire. Statistics used were frequency, percentage, t-test, and one-way ANOVA POSTHOC test by Scheffe method. Most of the students are female, aged 19 to 21 years old, studying in their fourth year, with a cumulative GPA of 3.01 to 3.50, studying in the Faculty of Arts and Humanities, International Program, and having Thai nationality. The analysis of learning outcomes classified by factor variables showed that gender, age, faculties studied, and different races had no different opinions about learning outcomes according to the TQF for Higher Education. Students with different years of study had different cognitive skills and students with different cumulative GPAs had different cognitive skills, knowledge, interpersonal, and responsibility skills. In addition, students with different faculties of study had different ethics and morals, knowledge, numerical analysis, communication, and information technology skills significantly at the 0.05 level.

Keywords: Learning Outcomes, Thai Qualifications Framework (TQF), Higher Education, Thailand

1. Introduction

The Thai Qualifications Framework for Higher Education (TQF) is a framework that outlines the management system for the quality of higher education qualifications in Thailand. It consists of a continuous link from one qualification level to a higher level. The learning outcomes of each qualification level increase with the level of qualification. The Qualifications Framework for Higher Education also serves as a guideline for the development or improvement of undergraduate programs and is beneficial to maintaining the quality and standards of higher education of all higher education institutions in Thailand to be comparable both nationally and internationally. Following the announcement of the Ministry of Education on the TQF for Higher Education 2009 (The Higher Education Commission, 2009), it has specified learning and learning outcome standards according to the TQF for Higher Education as follows: Learning is a change in behavior that students develop on their own from the

experience gained during their studies. The TQF for Higher Education specifies expected learning outcomes for graduates. Therefore, the learning outcomes of undergraduate students include at least 5 aspects: Ethics and morals, knowledge, cognitive skills, interpersonal and responsibility skills, numerical analysis, communication and information technology skills which require all higher education institutions to focus on providing quality education with the same goal, increasing social confidence in the quality and standard of qualifications that graduates must have after graduation (Ministry of Education, 2009).

From the literature review, it was found that research studies on learning outcomes according to the TQF for Higher Education combined with variables such as the research done by Inthornnongphai & Kotakot (2017) which found that learning outcomes according to the TQF for Higher Education overall is at a high level. Ethics and morals, knowledge, cognitive skills, interpersonal and responsibility skills, numerical analysis, communication and information technology skills and professional practice skills were at a high level. It was also found that the learning outcomes of post-study were higher than pre-study and were different. The learning outcomes of the students who practiced in the community style were different. There was no difference in the level of opinions on the learning outcomes (Inthornnongphai & Kochakhot, 2017). Songwattanayut and her team (2018) found that the characteristics of desirable graduates overall were at a high level separated into ethics and morals, knowledge, cognitive skills, interpersonal and responsibility skills, numerical analysis, communication and information technology skills and the aspects of the professional practice were at a high level. It was also found that the factors of learning style and relationship with classmates were related to desirable graduate characteristics according to the TQF for Higher Education (Songwattanayut et al., 2018). Sirisomboon (2016) found that the characteristics of graduates according to the TQF for Higher Education were at a high level, which consisted of graduates' characteristics in ethics and morals, characteristics of graduates in interpersonal and responsibility skills, characteristics of graduates in integrity and knowledge, the characteristics of graduates in intellectual skills and characteristics of graduates in numerical analysis, communication and information technology skills. All aspects were at a high average level (Sirisomboon, 2016). Puengsawang and Booncharoenpanich (2017) found that desirable graduate characteristics according to the identity of the Royal Thai Air Force Nursing College were generally at a high level and there was no difference in overall desirable graduate characteristics between graduates (Puengsawang & Booncharoenpanich, 2017). Kongkhunthod and colleagues (2020) found that the quality of graduates according to the TQF for Higher Education overall was at a high level. They also found that the quality of graduates according to the TQF and graduate identity had a positive relationship (Kongkhuntod et al., 2020).

In conclusion, the results of the study of past research on learning outcomes according to the TQF for Higher Education mainly measure the level of opinions and attitudes of the participants. However, it is still necessary to study the factors that contribute to or affect the results of learning management according to the standard framework. Therefore, this research aims to compare the differences of international university students according to personal factors. It is a collection of data from different samples from past research. The findings from this research were to analyze differences in learning management outcomes from some personal factors which showed consistency or inconsistency with past research results. This will be beneficial to the development and modification of teaching and learning methods to achieve learning outcomes under the TQF for Higher Education.

2. Objectives of the Research

2.1 To study the level of learning outcomes according to the TQF for Higher Education according to the opinions of international university students.

2.2 To analyze differences in learning outcomes classified by personal factors such as gender, age, year of study, cumulative grade point average, faculty of study, course of study, and ethnicity of international university students.

3. Review of Related Literature

The Thai Qualifications Framework for Higher Education (TQF: HEd) is a framework of the educational qualifications system at the higher education level in Thailand. The framework comprises qualification levels, fields of study, the progression from one qualification level to a higher one, and the learning outcome standards for each qualification level. It also explains the characteristics of the curriculum at each level, the amount of learning corresponding to the required time, and opportunities for recognizing prior learning from experience to promote lifelong learning. The framework also outlines the systems and mechanisms that ensure the effectiveness of implementing the national higher education qualifications framework in higher education institutions to produce graduates who meet the quality standards of learning outcomes (The Higher Education Commission, 2009). As a result, higher education teaching has implemented the National Higher Education Qualifications Framework to align educational standards with the Ministry of Education's 12th Strategic Education Development Plan. This plan emphasizes developing and enhancing advancing science, human capital potential, research, technology, and innovation. It allows students to think critically for problem-solving, analyzing, and synthesizing knowledge at all levels to promote self-directed learning. Educators have five essential roles: 1) Learning facilitators by asking questions and guiding learners to access information; 2) Structuring learning by creating tools and guiding students while considering the learning context; 3) Stimulating learners to practice their thinking processes and observing their behaviors; 4) Providing opportunities for students to create their work freely; and 5) Assessing progress and fostering reflection (Intaranongpai & Kotchakot, 2017). To guarantee that graduates of all qualification levels and fields meet the required standards, learning outcomes must cover at least five aspects:

1) Ethics and moral skills: The ability to develop habits of ethical responsibility and behavior, both collectively and individually. It also includes adapting to one's lifestyle during value conflicts and practicing societal and personal morality.

2) Knowledge skills: The ability to understand, conceptualize, present information, analyze facts, principles, theories, and processes, and engage in self-directed learning.

3) Cognitive skills: The ability to assess situations and apply knowledge of concepts, principles, theories, and processes through critical thinking and problem-solving in unexpected situations.

4) Interpersonal and responsibility skills: The ability to collaborate in teams, demonstrate leadership, and take responsibility for oneself and society. This also includes planning and managing one's learning.

5) Numerical analysis, communication, and information technology skills**: The ability to conduct numerical analysis, use mathematical and statistical techniques, communicate effectively in speech and writing, and utilize information technology.

In addition to these five aspects, some fields require advanced physical skills, such as dance, music, painting, sculpture, physical education, medicine, and medical sciences. Therefore, it is necessary to provide psychomotor skills in the curriculum.

The review of literature on the Thai Qualifications Framework for Higher Education revealed that Intaranongpai and Kotchakot (2017) conducted a study on "The Learning Outcome under the Qualifications Framework for Higher Education (TQF) in Community Nursing Practicum Subject, Bachelor of Nursing Science." Their findings showed the differences in the evaluation of learning outcomes between students practicing in rural and semi-urban communities after completing the community nursing practicum course.

Pragobsang and colleagues (2022) conducted a study titled "Learning Outcome by the Thai Qualifications Framework for Higher Education of Dental Public Health Students, Northeastern Sirindhorn College of Public Health, Thailand." Their study discovered that the institution's environment influences the students' ability to learn according to the higher education qualifications framework.

More studies from the same framework, such as Khamchan et al. (2022), focused on measuring learning outcomes in various classroom subjects. Meanwhile, Songwatthanayuth et al. (2022) explored the approaches to improve graduate quality according to the national higher education qualifications framework at King Mongkut's College of Nursing, Phetchaburi Province, by using a mixed-method research approach. However, it can be observed that in the context of higher education institutions offering international programs (English-language instruction), there has yet to be a study on learning outcomes based on the national higher education qualifications framework. Therefore, the researcher has used the five learning outcomes under the national higher education qualifications framework as variables in this study.

4. Research Methodology

4.1 Population and Sample

The population used in this research was 918 students from Asia-Pacific International University, Muak Lek District, Saraburi Province (Registration and Student Admissions Office, 2022). It was calculated using Yamane's formula (1973). If the population size is known at the error level of 0.05 percent, the sample size is 279 people. The actual number of respondents was 315 people using simple random sampling.

4.2 Research variables

This research is titled “A Comparative Perspective of Learning Outcomes of International University Students Based on The Thai Qualifications Framework for Higher Education Standards.” The independent variables of this study include gender, faculty studied, ethnicity, age, year of study, cumulative grade point average, and the faculty of study.

Meanwhile, the dependent variables consist of the learning outcomes of international university students according to the TQF for Higher Education, based on five skills: knowledge, cognitive skills, interpersonal and responsibility skills, and numerical analysis, communication, and information technology skills.

4.3 Research Tools and Reliability Test

The research tool is a questionnaire developed by the research team who study the literature and related research, consisting of 2 parts:

Part 1 Personal factors of the respondents which consist of 7 multiple-choice questions, namely gender, faculty studied, ethnicity, age, year of study, cumulative GPA, and the faculty of study. They are multiple-choice questions.

Part 2 Opinions on learning outcomes which according to the TQF for Higher Education, consist of 5 items on moral and ethical skills, 5 items on knowledge skills, 5 items on intellectual skills, 4 items on interpersonal and responsibility skills, and 4 items on numerical analysis, communication, and information technology skills. The questions are on a 5-level Likert scale: level 5 means strongly agree, level 4 means agree, level 3 means not sure, level 2 means disagree, and level 1 means strongly disagree.

All questionnaire designs were taken to three experts to verify the consistency between the questionnaire and the objectives. The result showed that no question was less than 0.67 and 30 sets of questionnaires were used to collect data from samples similar to the sample to be studied. It was found that Cronbach's Alpha Coefficient of confidence of the questionnaire

was 0.94. After that, all questions in the questionnaire were used to collect data from the sample group and tested Cronbach's Alpha Coefficient confidence value of the questionnaire from 315 respondents. It was found that the value equals 0.94. Hulin et al. (2001) said that the generally accepted confidence value was 0.60 – 0.70.

4.4 Data Analysis and Statistics Used

The statistics used to analyze the data when classified by data characteristics and research objectives are as follows: Frequency and percentage were used for the analysis of personal factors of international university students. As for the measurement of opinions about learning outcomes according to the TQF for Higher Education, the mean ($\bar{x}$) and standard deviation (S.D.) were used. The questionnaire is an Interval Scale. Perception scores can be divided as follows: 4.21 – 5.00 means the highest perception, 3.41 – 4.20 means high perception, 2.61 – 3.40 means moderate perception, 1.81 – 2.60 means low perception, and 1.00 – 1.80 mean least perceived (Vanichbuncha, 2002). Scheffe's t-test and F-test were used for the analysis of differences.

5. Research Results

5.1 Details of personal factors of the respondents

The respondents in this questionnaire were international university students. Most of them, 174 students are female representing 55.20%, 174 students are studying in international programs representing 55.20%, 169 students are Thai representing 53.70%, 154 students are aged 19 years to 21 years representing 48.90%, 101 students are studying in the fourth year representing 32.10%, 117 students have a cumulative GPA of 3.01 to 3.50 representing 37.10%, and 75 students are studying in the Faculty of Education 23.80% as detailed in Table 1.

Table 1 Analysis of personal factors of the students

Variables		N (288)	Percentage
Gender	Male	141	44.80
	Female	174	55.20
Program of study	Thai Program	141	44.80
	International Program	174	55.20
Nationality	Thai	169	53.70
	Foreigner	146	46.30
Age	Below or equal to 18 years	22	7.00
	19 years to 21 years	154	48.90
	22 years to 24 years	111	35.20
	25 years and above	28	8.90
Year of Study	Year 1	78	24.80
	Year 2	78	24.80
	Year 3	58	18.40
	Year 4	101	32.10
Cumulative GPA	Lower than 2.50	46	14.60
	2.51 – 3.00	100	31.70
	3.01 – 3.50	117	37.10
	Higher than 3.50	52	16.50
Faculty Studied	Arts and Humanities	70	22.20
	Business Administration	70	22.20

Variables		N (288)	Percentage
	Education	75	23.80
	Faculty Mission of Nursing	25	7.90
	Information Technology	22	7.00
	Science	31	9.80
	Theology	22	7.00

5.2 Opinion-level study results on learning outcomes according to the TQF for Higher Education

The results of the analysis of opinion levels on learning outcomes according to the TQF for Higher Education are shown in Table 3. It was found that international university students had an overall opinion at a high level ($\bar{x}$ = 3.87, S.D. = 0.54), the highest level of opinions in terms of "Moral and ethical skills" were at a high level ($\bar{x}$ = 4.00, S.D. = 0.65), the lowest level of opinion in the field "numerical analysis, communication and information technology skills." is at a high level ($\bar{x}$ = 3.76, S.D. = 0.70) as shown in Table 2.

Table 2 Mean, S.D., and opinion levels on learning outcomes according to the TQF for Higher Education

Learning Outcomes	Mean ($\bar{x}$)	S.D.	Perception Level
1. Ethics and morals skills	4.00	0.65	High
2. Knowledge skills	3.85	0.63	High
3. Cognitive skills	3.86	0.62	High
4. Interpersonal and responsibility skills	3.86	0.67	High
5. Numerical analysis, communication, and information technology skills	3.76	0.70	High
Total	**3.87**	**0.54**	**High**

5.3 The results of the analysis of differences in opinion levels about learning outcomes according to the TQF for Higher Education are classified by gender, faculty studied, and nationality.

An analysis of the differences in the mean value of learning outcomes according to the TQF for Higher Education based on opinions of international students classified by gender, faculty studied, and nationality was tested by t-test. It was found that the gender of international university students, the faculty studied and different nationalities did not contribute to different opinions about learning outcomes according to the TQF for Higher Education as shown in Table 3.

Table 3 Analytical results of differences in the mean value of learning outcomes according to the TQF for Higher Education classified by gender, faculty studied, and nationality

Learning Outcomes	Male (141)		Female (174)		t	p
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. Ethics and morals skills	3.93	0.67	4.01	0.64	-1.10	0.27
2. Knowledge skills	3.82	0.65	3.88	0.61	-0.85	0.40
3. Cognitive skills	3.83	0.63	3.89	0.62	-0.82	0.41
4. Interpersonal and	3.81	0.68	3.90	0.66	-1.24	0.22

Learning Outcomes	Male (141)		Female (174)		t	p
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
responsibility skills						
5. Numerical analysis, communication, and information technology skills	3.80	0.71	3.76	0.70	0.16	0.88
Learning Outcomes	**Thai Program (141)**		**International Program (174)**		**t**	**p**
1. Ethics and morals skills	4.05	0.60	3.91	0.69	1.93	0.06
2. Knowledge skills	3.88	0.65	3.82	0.61	0.81	0.42
3. Cognitive skills	3.90	0.63	3.84	0.62	0.89	0.38
4. Interpersonal and responsibility skills	3.86	0.71	3.86	0.64	-0.01	0.99
5. Numerical analysis, communication, and information technology skills	3.76	0.75	3.76	0.66	-0.01	1.00
Learning Outcomes	**Thai (169)**		**Foreigner (146)**		**t**	**p**
1. Ethics and morals skills	4.00	0.67	3.95	0.64	0.62	0.54
2. Knowledge skills	3.86	0.65	3.83	0.60	0.46	0.65
3. Cognitive skills	3.84	0.63	3.89	0.62	-0.72	0.48
4. Interpersonal and responsibility skills	3.83	0.69	3.89	0.65	-0.70	0.49
5. Numerical analysis, communication, and information technology skills	3.75	0.76	3.78	0.63	-0.35	0.73

5.4 The results of the analysis of different mean values on learning outcomes classified by age.

The results of the mean difference analysis of learning outcomes according to the TQF Higher Education of International University students classified by age were tested by using one-way ANOVA. It was found that different ages did not contribute to different learning outcomes according to the TQF for Higher Education in ethics and morals, knowledge, cognitive skills, interpersonal and responsibility skills, and numerical analysis, communication, and information technology skills as shown in Table 4.

Table 4 Analysis of the mean differences of opinions on learning outcomes according to the TQF for Higher Education classified by age

Learning Outcomes	F	Sig.
1. Ethics and morals skills	0.73	0.53
2. Knowledge skills	0.24	0.87
3. Cognitive skills	0.99	0.40
4. Interpersonal and responsibility skills	1.17	0.32
5. Numerical analysis, communication, and information technology skills	1.40	0.24

5.5 The results of the analysis of different mean values on learning outcomes classified according to the year of study.

Opinions on learning outcomes according to the TQF for Higher Education of

International University students were classified by year of study by testing with One–way ANOVA. It was found that as the year of study differs, the opinions on learning outcomes according to the TQF for Higher Education in cognitive skills were significantly and statistically different at 0.05 and there is no difference in interpersonal and responsibility skills, and numerical analysis, communication, and information technology skills as shown in Table 5.

Table 5 Analysis of the mean differences of opinions on learning outcomes according to the TQF for Higher Education classified by year of study

Learning Outcomes	F	Sig.
1. Ethics and morals skills	2.51	0.06
2. Knowledge skills	0.81	0.49
3. Cognitive skills	3.09	0.03*
4. Interpersonal and responsibility skills	0.55	0.65
5. Numerical analysis, communication, and information technology skills	2.36	0.07

When taking the average opinions about learning outcomes according to the TQF for Higher Education Standards for cognitive skills to test for differences in pairs using Scheffe's method, no pairwise differences were found. Therefore, international students with different years of study had no difference in learning outcomes in all five areas.

5.6 Analytical results of the different mean values in learning outcomes classified by cumulative grade point average.

From the analytical results of the different mean values in learning outcomes according to the TQF for Higher Education of international university students classified by cumulative GPA by testing with One-way ANOVA, it was found that students with different cumulative grade point averages have statistically significant differences at 0.05 in knowledge skills, cognitive skills, and interpersonal and responsibility skills according to the TQF of Higher Education Standards. Ethics and moral skills, numerical analysis, communication, and information technology skills did not differ as shown in Table 6.

Table 6 The Analysis of different mean values of opinions on learning outcomes according to the TQF for Higher Education classified by Cumulative GPA.

Learning Outcomes	F	Sig.
1. Ethics and morals skills	1.49	0.22
2. Knowledge skills	2.83	0.04*
3. Cognitive skills	4.52	0.00*
4. Interpersonal and responsibility skills	3.79	0.01*
5. Numerical analysis, communication, and information technology skills	1.44	0.23

When calculating the mean value of feedback on learning outcomes based on the TQF of Higher Education Standards for knowledge skills, cognitive skills, interpersonal and responsibility skills, pairwise differences were tested using Scheffe's method. The differences were found as follows: (1) Knowledge skills: It was found that students with different cumulative grade point averages had different levels of opinion, but when the paired mean values were tested, there was no difference. (2) Cognitive skills: It was found that students with a cumulative GPA below 2.50 were different from students with a cumulative GPA of 2.50 to

3.00, a cumulative GPA of 3.01 to 3.50, and a cumulative GPA of 3.51. It was found that those with a cumulative grade point average below 2.50 have a high level of opinion ($\bar{x}$ = 3.56). Those with a cumulative grade point average of 2.51 to 3.00 have a high level of opinion ($\bar{x}$ = 3.89). Those with a cumulative GPA of 3.01 to 3.50 have a high level of opinion ($\bar{x}$ = 3.93) and those with a cumulative GPA of 3.51 or higher have a high level of opinion ($\bar{x}$ = 3.94) and (3) Interpersonal and responsibility skills: It was found that students with a cumulative GPA below 2.50 were significantly different from students with a cumulative GPA of 3.01 to 3.50 at a high degree ($\bar{x}$ = 3.57) while those with a cumulative GPA of 3.01 to 3.50 had a high degree of opinion ($\bar{x}$ = 3.96).

5.7 The results of the analysis of different mean values in learning outcomes classified by faculties studied.

From the results of the analysis of different mean values in learning outcomes according to the TQF for Higher Education of International University Students classified by faculties studied by testing with one-way analysis of variance (One-way ANOVA), it was found that students from different faculties had different learning outcomes according to the TQF for Higher Education in terms of ethics and morals skills, cognitive skills, and numerical analysis, communication and information technology skills at a statistically significant value of 0.05. The cognitive skills, and interpersonal and responsibility skills were not different as shown in Table 7.

Table 7 Analysis of the different mean values of opinions on learning outcomes according to the TQF for Higher Education classified by faculties studied

Learning Outcomes	F	Sig.
1. Ethics and morals skills	3.30	0.00*
2. Knowledge skills	3.43	0.00*
3. Cognitive skills	1.68	0.13
4. Interpersonal and responsibility skills	1.27	0.27
5. Numerical analysis, communication, and information technology skills	4.00	0.00*

When taking the mean value of different opinions about learning outcomes according to the TQF for Higher Education Standards for ethics and morals skills, cognitive skills and numerical analysis, and communication and information technology skills, pairwise differences were tested using Scheffe's method. The differences were found as follows: (1) Ethics and morals skills: It was found that the Faculty of Nursing students were different from the Faculty of Education students. The opinions of the Faculty of Nursing students were at a high level ($\bar{x}$ = 4.15) and the Faculty of Education students had opinions at a high level ($\bar{x}$ = 3.60) (2) Cognitive skills: It was found that the Faculty of Nursing students were different from the Faculty of Arts and Humanities students. The Faculty of Nursing students had a high level of opinions ($\bar{x}$ = 4.06) and students of the Faculty of Education had a high level of opinion ($\bar{x}$ = 3.67) and (3) Numerical analysis, communication, and information technology skills: It was found that the Faculty of Nursing students were different from the students of the Faculty of Education. The students from the Faculty of Education had a high level of opinions ($\bar{x}$ = 3.39) and the nursing students had a high level of opinions ($\bar{x}$ = 3.93).

6. Discussion

Most of the respondents in this research were females studying in international programs. They were of Thai nationality, aged 19 to 21 years old, studying in their fourth year with a

cumulative GPA of 3.01 to 3.50, and studying in the Faculty of Education. The results of the opinion-level study on learning outcomes according to the TQF for international university students on ethics and morals skills, knowledge skills, cognitive skills, interpersonal and responsibility skills, and numerical analysis, communication and use of information technology skills is at a high level.

This is in line with the research of Inthornnongphai and Kochakod (2017) which found that the overall learning outcomes according to the TQF for Higher Education were at a high level. Ethics and morals skills, knowledge skills, cognitive skills, interpersonal and responsibility skills, numerical analysis, communication and use of information technology skills, and professional practice skills were at a high level (Inthornnongphai & Kotakot, 2017). It is also in line with the research of Songwattanayut et al. (2018), which found that overall desirable graduate characteristics were at a high level. The characteristics were divided into the following: ethics and morals skills, knowledge skills, cognitive skills, interpersonal and responsibilities skills, numerical analysis, communication and use of information technology skills, and professional practice skills were at a high level (Songwatanayut et al., 2018). This is in line with the results of the study of Sirisomboon (2016), which found that the characteristics of graduates according to the TQF for Higher Education were at a high level. The characteristics of graduates are ethics and morals skills, knowledge skills, cognitive skills, interpersonal and responsibilities skills, numerical analysis, communication, and use of information technology skills. In all aspects, they are at a high average level (Sirisomboon, 2016). It is as well as consistent with research by Puengsawang and Booncharoenphanit (2017). It was found that the desirable graduate characteristics according to the identity of the Royal Thai Air Force College of Nursing were overall at a high level (Puengsawang & Booncharoenpanich, 2017) and were consistent with the findings of Kongkhunthot et al. (2020). It was found that the quality of graduates according to the TQF for Higher Education, the overall picture is at a high level (Khongkhunthod et al., 2020).

An analysis of differences in opinion levels on learning outcomes according to the TQF for Higher Education of international university students classified by gender, faculties studied, ethnicity, and age found that students with different faculties studied, ethnicity, and age, their opinions about learning outcomes under the TQF for Higher Education did not differ. In addition, it was found that 1) different years of study affected different levels of opinions on learning outcomes according to the TQF for Higher Education in cognitive skills. Ethics and morals skills, knowledge skills, interpersonal and responsibility skills, and numerical analysis, communication and information technology skills were not different. 2) Different GPAs had different effects on the level of opinions about learning outcomes according to the TQF for Higher Education in terms of cognitive skills, intellectual skills, interpersonal and responsibility skills. Ethics and morals skills and numerical analysis, communication and use of information technology skills were not different. 3) Different faculties had different effects on the opinions on learning outcomes according to the TQF for Higher Education in ethics and morals skills, knowledge skills, numerical analysis, communication, and the use of information technology skills. Intellectual skills, interpersonal and responsibility skills were not different. When compared in pairs, it was found that students with a cumulative GPA of 3.01 had higher intellectual skills, interpersonal and responsibility skills than students with a GPA lower than 3.00. It was also found that students studying in the Faculty of Nursing had higher numerical analysis, communication and information technology skills and cognitive skills than students studying in the Faculty of Education and Faculty of Arts and Humanities. This is in line with Tang-on's research (2016) which found that the weak group of students had the lowest progress in learning outcomes in cognitive skills and had the highest progress in learning outcomes on ethics and morals skills (Tang-On, 2016). This is consistent with the work of Chaiwongsa

(2014), who found that the comparison of learning outcomes according to the TQF for Higher Education after the blended instructional design in nutrition subjects as perceived by first-year nursing students is higher than before the blended instructional design (Chaiwongsa, 2014).

7. Summary of Research Findings

Therefore, it can be concluded that the results of this research are a continuation of previous research that analyzed the differences in the mean value of learning outcomes classified according to individual factors such as gender, age, year of study, cumulative grade point average, faculties studied, course of study, and race, which provided some findings that confirmed previous findings and found new findings such as students with relatively low cumulative grade point averages had low learning outcomes according to the TQF for Higher Education. It showed the importance of developing students to achieve good results that affect their learning outcomes. Therefore, instructors must pay attention to learning management, development, and promotion of all 5 skills to achieve better learning and have higher evaluation values. In addition, there should be an in-depth research study in the field of nursing because students in the field of nursing are different from other faculties to see the causes or factors that promote the determination and intention of the students and apply it in other professional fields to have higher learning outcomes according to the standard framework of higher education.

8. Suggestion

The findings show that international university instructors must focus on developing and improving teaching and learning with low-achieving students toward higher achievement to achieve high learning outcomes according to the TQF for Higher Education Standards. In addition, the Faculty of Nursing, as well as the students from other faculties, should be encouraged to achieve higher learning outcomes according to the TQF for Higher Education Standards. This research is a collection of data for international university students, so the results of the study are limited. Therefore, further studies should be conducted with a larger population group or students in large public and private universities. This research is only a study of learning outcomes based on the TQF for Higher Education Standards. There may be other variables related to learning outcomes based on the TQF for Higher Education Standards, such as time management, student achievement or student employment rates, etc., and the next research should collect data through a variety of methods, such as in-depth interviews or focus group studies to make the research complete and valuable.

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