The Direction to International Standards In Thai Private Higher Education

by

Yasumasa Mori

Japanese for Business Communication, School of Liberal Arts, Sripatum University, Bangkok, Thailand E-mail: yasumasa.mo@spu.ac.th

and

Waraporn Thaima¹, Sirinthorn Sinjindawong²

School of Liberal Arts, Sripatum University,
Bangkok, Thailand
E-mail: waraporn.th@spu.ac.th¹, sirinthorn.si@spu.ac.th²

Abstract

The purposes of this paper are: 1) to study the current status of internationalization of Thai private higher education institutions, 2) to analyze various measures for future internationalization based on the current situations, and 3) to suggest the direction of international development of private higher education institutions. A questionnaire (closed-ended questions) was conducted with 11 items regarding specific activities related to internationalization for 15 private higher education institutions. These 15 institutions were the ones that obtained cooperation from four regions according to the typical regional division of Thailand. The reliability coefficient was 0.87 (Cronbach's alpha). According to the analysis results based on the five categories, the universities showed about 80% or more in all categories, however, in the colleges, it was less than 60% except for more than 80% of category 4 and 5. As conclusions, while the universities are steadily engaging towards internationalization in all categories, the colleges have fundamental issues to be improved.

Keywords: Private Higher Education, Internationalization, International Standards

1. Rationale of Research

The discussions on internationalization of higher education in the world began in the 1990s, and various higher education experts actively introduced the concept and definition of internationalization: e.g., Paige (1993), Ellingboe (1998), Mestenhauser & Ellingboe (1998), Knight & De Wit (1999), etc. In the 2000s, the methodology for internationalization evaluation of higher education institutions has been discussed in the transition process from the idealistic discussion on internationalization to the specific discussion on the internationalization process. In developing internationalization evaluation approaches, the indicators for internationalization evaluation have been proposed and used in view of the objectives, goals, means, processes, output, and outcome of internationalization: e.g., *Internationalization Laboratory* by American Council on Education: ACE, (2003-), *Mapping Internationalisation*: MINT by the Dutch Organisation for Internationalisation in Education: Nuffic, (2007-), *HRK-Audit Internationalization of Universities* by German Rectors' Conference, (2009-), *Assessment of Internationalisation*, Accreditation Organisation of the

Netherlands and Flanders: NVAO, (2011-), etc (NIAD-QE, n.d.). Along with this, world university rankings such as *The Times Higher Education*: THE, or *Quacquarelli Symonds*: QS have also been released, it is said to cause more and more concern with higher education in the international community. In the global age, internationalization of higher education is becoming increasingly difficult to ignore in education, research and management including institution or program level, and institutional internationalization (organizational system) or educational internationalization (educational standard).

Thai higher education has undergone major educational reforms since the establishment of the National Education Act in 1999, and has reached the present day. In the process of educational reform, while responding to the government's some higher education policies, the challenge of internationalization attracted a lot of attention. The internationalization policy was fully advocated in the first long-term higher education plan (1990-2004). To secure international competitiveness represented an important issue in the second long-term higher education plan (2008-2022). Currently under the global era, Thai higher education institutions face the challenges of how they strengthen internationality, international standards, international validity, international commonality, international competitiveness and international deployment, and how can they establish international status or position in the international community. In particular, private higher education institutions based on their own financial resources, in the context of strong nature and value as public goods in society, are in a situation that is necessary to promote their own internationalization intramurally and extramurally (internationalization at home / abroad), according to their own mission or vision.

2. Research Objectives

There are three objectives in this research paper: 1) to study the current status of internationalization of Thai private higher education institutions, 2) to analyze various measures for future internationalization based on the current situations, and 3) to suggest the direction of international development of private higher education institutions.

3. Guideline for Research

When considering internationalization based on the international standards of Thai private higher education institutions, the five categories were set in accordance with various specific contents of internationalization. As to category classification, the five categories defined by the European Consortium for Accreditation in Higher Education: ECA was used from previous research on the coverage in internationalization evaluation. (Aerden, 2017, pp.9-26). In this paper, it was treated as the five keywords in a guideline for research (Figure 1). The concise meaning of the five keywords is as follows: 1) *Integrated internationalization* (sharing vision or vision that can be verified), 2) *International and intercultural learning* (learning outcome or achievement of learning), 3) *Teaching and learning* (curriculum, teaching methods, or learning environment), 4) *Staff* (international skills and experience, or support), 5) *Students* (international experience or support services).

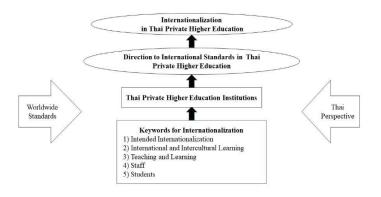


Figure 1 Guideline for Research

4. Research Methodology

4.1 Research Design

The plan of this research was designed as follows: 1) Consideration on the contents, number of questions, and composition of questionnaire (content validity and construct validity), 2) Confirmation of contact information for private higher education institutions, international department and a responsible person, 3) Determining respondents at each institution, 4) How to distribute questionnaire and collect responses, 5) Creating a questionnaire and letter of request, 6) Confirmation of response results (valid or invalid response), 7) Quantify valid response as data (statistical processing), 8) Data analysis of valid responses, 9) Overview of overall characteristics and individual trends through patterns of response behavior by data analysis, and 10) Summarizing the results of analysis for discussions.

4.2 Target Group

The target private higher education institutions were 73 in Thailand (42 Universities: 57.33%, 11 Institutes: 15.07% and 20 Colleges: 27.40%, rounded off to two decimal places, hereinafter the same shall apply). However, 11 institutions without e-mail addresses were excluded (OHEC, 2018, pp.28-44). Therefore, the remaining 62 institutions (84.93%): 37 Universities, 9 Institutes, and 16 Colleges. The ratio of 62 institutions was 59.68% for universities, 14.52% for institutes and 25.80% for colleges, respectively.

4.3 Variable

Explanatory variable means variable that represents some sort of causes, that is, 11 items concerning specific activities of internationalization were regarded as corresponding to this variable. Keyword 1 corresponded to Question No.1, 2, 5 and 6, keyword 2 corresponded to Question No.4 and 9, keyword 3 corresponded to Question No.7, 8 and 10, keyword 4 corresponded to Question No.3 and 5, and keyword 5 corresponded to Question No.3 and 11 in 11 items (Table 2, 3, 4, 5 and 6). Response variable means variable that represents the results of cause, and four response variables were *Yes*, *No*, *Unsure*, and *Action(s) needed* indicating ordinal scale as qualitative variable for 11 items.

4.4 Research Instrument

Questionnaire survey consisted of 11 question items, and was closed-ended question by choosing single answer from the four attitudes of *Yes*, *No*, *Unsure* and *Action(s) needed* for each item. As a result of consulting various methods or approaches on internationalization evaluation (Beerkens *et al.*, 2010; Yonezawa, 2008), the contents of 11 questions in the questionnaire were adopted from questions designed by Bureau of International Cooperation Strategy, Office of the Higher Education Commission, Thailand (2017, pp.32-34).

4.5 Data Collection

The questionnaire was sent to each contact person of 62 institutions by an e-mail with *Google form* (as an electronic questionnaire) on July 7, 2019, and the acceptance of response was over a period from July 8 until 15, 2019. The result of collecting responses were the number of receiving reply mail, and the total was 15 institutions (9 universities, 0 institute and 6 colleges). These 15 institutions were the ones that the survey cooperation was obtained, and covered typical four regions of Thailand (central, northern, southern, and northeastern). The central region included institutions in Bangkok, Bangkok metropolitan area, and other areas. The reliability coefficient that indicated internal consistency was 0.87 (Cronbach's alpha). In addition, the results of collected data were also confirmed to be fairness and adequateness through the inspection by several academic experts.

4.6 Data Analysis

The frequency of *Yes* was the highest answer in the entire institution including university and college, by accounting for 73.33%. The next most common answer was *Action(s) needed*, and it was 11.52%. In university response behaviors, *No* was not seen at all, and *Yes* was the highest at 50.91%. The most popular answer in colleges was *Yes*, however, it was only 22.42% compared to universities. *No* in colleges were 7.88%, and it was the second most common answer.

Table 1 Patterns of Response Behaviors

Answer type	University	College	Total	x	SD
Yes	84 (50.91%)	37 (22.42%)	121 (73.33%)	60.50	23.50
No	0 (0.00%)	13 (7.88%)	13 (7.88%)	6.50	6.50
Unsure	5 (3.03%)	7 (4.24%)	12 (7.27%)	6.00	1.00
Action(s) needed	10 (6.06%)	9 (5.46%)	19 (11.52%)	9.50	0.50
Total	99 (60.00%)	66 (40.00%)	165 (100.00%)	82.50	16.50

5. Research Results

5.1 Intended Internationalization

Regarding *Intended internationalization* in Table 2, the universities were extremely high at 88.88%, whereas the colleges were 58.33% with a difference of about 31 points. The answers other than *Yes* in the colleges were divided into 16.67% of *No* and 20.83% of *Action(s) needed*.

Table 2 Keyword 1: Intended Internationalization

Contents	Answer	Yes	No	Unsure	Action(s)	Total
	Institution				needed	
Q1 Institution's definition of	University	8	0	1	0	9
Internationalization		88.89%	0.00%	11.11%	0.00%	100.00%
	College	3	2	0	1	6
		50.00%	33.33%	0.00%	16.67%	100.00%
Q2 Internationalization process	University	8	0	0	1	9
aligned with vision and		88.89%	0.00%	0.00%	11.11%	100.00%
missions	College	3	1	1	1	6
		50.00%	16.67%	16.67%	16.67%	100.00%
Q5 Senior leaders showing	University	7	0	1	1	9
support internationalization		77.78%	0.00%	11.11%	11.11%	100.00%
	College	4	1	0	1	6
		66.67%	16.67%	0.00%	16.67%	100.00%
Q6 Strategic network(s) seen to	University	9	0	0	0	9
facilitate internationalization		100.00%	0.00%	0.00%	0.00%	100.00%
	College	4	0	0	2	6
		66.67%	0.00%	0.00%	33.33%	100.00%
	University	32	0	2	2	36
		88.88%	0.00%	5.56%	5.56%	100.00%
Total	College	14	4	1	5	24
		58.33%	16.67%	4.17%	20.83%	100.00%
	Total	46	4	3	7	60
		76.67%	6.67%	5.00%	11.66%	100.00%
$\bar{\mathbf{x}}$		23.00	2.00	1.50	3.50	30.00
SD		9.00	2.00	0.50	1.50	6.00

5.2 International and Intercultural Learning

In *International and intercultural learning* (Table 3), the answer of *Yes* was the highest in the universities at 83.33%, and the answer of *Action(s) needed* accounted for 16.67%, therefore, this category is recognized as an important factor in internationalization. However, in the colleges, although *Yes* was high at 66.67%, there was a difference of about 42 points compared to the universities. In addition, there were also 25.00% of *No* and 16.67% of *Unsure*, and the present situation emerged that *international and intercultural learning* is not fully integrated in learning activities of the colleges.

 Table 3 Keyword 2: International and Intercultural Learning

Contents	Answer	Yes	No	Unsure	Action(s)	Total
	Institution				needed	
Q4 Institution environment	University	7	0	0	2	9
supporting internationalization		77.78%	0.00%	0.00%	22.22%	100.00%
	College	2	2	1	1	6
		33.33%	33.33%	16.67%	16.67%	100.00%
Q9 Joint projects & activities to	University	8	0	0	1	9
support internationalization for		88.89%	0.00%	0.00%	11.11%	100.00%
domestic & foreign students on	College	3	1	1	1	6
campus to cooperate		50.00%	16.67%	16.67%	16.67%	100.00%
	University	15	0	0	3	18
		83.33%	0.00%	0.00%	16.67%	100.00%
Total	College	5	3	2	2	12
		41.66%	25.00%	16.67%	16.67%	100.00%
	Total	20	3	2	5	30
		66.67%	10.00%	6.67%	16.66%	100.00%
$\bar{\mathrm{x}}$		10.00	1.50	1.00	2.50	15.00
SD		5.00	1.50	1.00	0.50	3.00

5.3 Teaching and Learning

In the universities, Yes was high at 77.78%, and Action(s) needed was also 14.81%, indicating that the importance of teaching and learning in internationalization was well recognized (Table 4). On the other hand, in the colleges, Yes was 44.44%, and the combined answers of No and Unsure accounted for 50.00%. Action(s) needed was only 5.56%.

Table 4 Keyword 3: Teaching and Learning

Contents	Answer	Yes	No	Unsure	Action(s)	Total
	Institution				needed	
Q7 Curriculum is	University	8	0	0	1	9
internationalized		88.89%	0.00%	0.00%	11.11%	100.00%
	College	2	2	1	1	6
		33.33%	33.33%	16.67%	16.67%	100.00%
Q8 Learning & teaching support	University	8	0	0	1	9
important knowledge & skills of		88.89%	0.00%	0.00%	11.11%	100.00%
learners	College	4	1	1	0	6
		66.67%	16.67%	16.67%	0.00%	100.00%
Q10 Knowledge management	University	5	0	2	2	9
process in place for capturing		55.56%	0.00%	22.22%	22.22%	100.00%
and sharing tacit knowledge &	College	2	2	2	0	6
experience		33.33%	33.33%	33.33%	0.00%	100.00%
	University	21	0	2	4	27
		77.78%	0.00%	7.41%	14.81%	100.00%
Total	College	8	5	4	1	18
		44.44%	27.78%	22.22%	5.56%	100.00%
	Total	29	5	6	5	45
		66.45%	11.11%	13.33%	11.11%	100.00%
x		14.50	2.50	3.00	2.50	22.50
SD		6.50	2.50	1.00	1.50	4.50

5.4 Staff

Both the universities and colleges accounted for round 80% range (Table 5), and the attitudes towards internationalization of the staff, including executives, was generally affirmative and positive.

Table 5 Keyword 4: Staff

Contents	Answer	Yes	No	Unsure	Action(s)	Total
	Institution				needed	
Q3 Positive attitudes of the	University	7	0	1	1	9
institution community -Senior		77.78%	0.00%	11.11%	11.11%	100.00%
leaders -Faculty - Support staff -	College	6	0	0	0	6
Student		100.00%	0.00%	0.00%	0.00%	100.00%
Q5 Senior leaders showing	University	7	0	1	1	9
support to internationalization		77.78%	0.00%	11.11%	11.11%	100.00%
	College	4	1	0	1	6
		66.67%	16.67%	0.00%	16.67%	100.00%
	University	14	0	2	2	18
		77.78%	0.00%	11.11%	11.11%	100.00%
Total	College	10	1	0	1	12
		83.34%	8.33%	0.00%	8.33%	100.00%
	Total	24	1	2	3	30
		80.00%	3.33%	6.67%	10.00%	100.00%
x		12.00	0.50	1.00	1.50	15.00
SD		2.00	0.50	1.00	0.50	3.00

5.5 Students

With respect to students, both the universities and colleges accounted for 88.88% and 83.34%, respectively (Table 6). Both universities and colleges were the only categories that showed over 80%. Therefore, the overall institution was 86.67%, and it was the highest among all categories. It can be said that the positive attitudes of faculty, staff, students or support for foreign students are in place.

Table 6 Keyword 5: Students

Contents	Answer	Yes	No	Unsure	Action(s)	Total
	Institution				needed	
Q3 Positive attitudes of the	University	7	0	1	1	9
institution community -Senior		77.78%	0.00%	11.11%	11.11%	100.00%
leaders -Faculty -Support staff -	College	6	0	0	0	6
Student		100.00%	0.00%	0.00%	0.00%	100.00%
Q11 Support services available	University	9	0	0	0	9
for international students		100.00%	0.00%	0.00%	0.00%	100.00%
	College	4	1	0	1	6
		66.67%	16.67%	0.00%	16.67%	100.00%
	University	16	0	1	1	18
		88.88%	0.00%	5.56%	5.56%	100.00%
Total	College	10	1	0	1	12
		83.34%	8.33%	0.00%	8.33%	100.00%
	Total	26	1	1	2	30
		86.67%	3.33%	3.33%	6.67%	100.00%
Χ̄		13.00	0.50	0.50	1.00	15.00
SD		3.00	0.50	0.50	0.00	3.00

6. Discussion and Conclusion

In the five categories, as shown in Table 7, the universities accounted for about 80% or more in all categories. There was a difference in the ratio of Yes between universities and colleges, and then, the category 1, 2 and 3 showed differences of 30 points or more. In the colleges, except for category 4 and 5, it remained in the range of about 40% to 60%. However, category 4 in the colleges was the only category with a slightly higher proportion than the universities. In the comparison of the universities and colleges, there was a large difference in the actions for internationalization or the process of internationalization in the universities and colleges as private higher education institutions. It turned out that the internationalization process in the colleges did not proceed as well as in the universities. Next, different characteristics were seen between the categories. As category 3 and 4 were relatively low at 77.78% in the universities, and category 2 and 3 were in the 40% range in the colleges, there was a difference in the actions or activities of internationalization depending on the institution size or type. In other words, in the universities, category 3 and 4 were slightly weaker than other categories, while in the colleges, category 1, 2 and 3 were much weaker than the universities. In particular, from the internationalization perspective, category 2 and 3 were found to be quite insufficient. That is, structural issues in the universities and colleges became clear in the process of internationalization.

Table 7 Percentage of *Yes* in the 5 Categories

	Category 1	Category 2	Category 3	Category 4	Category 5
University	88.88%	83.33%	77.78%	77.78%	88.88%
College	58.33%	41.66%	44.44%	83.34%	83.34%

7. Internationalization Process towards International Standards

Regarding the current status of internationalization of Thai private higher education institutions, universities and colleges showed different dimensions. In particular, the differences were conspicuous in category 1, category 2 and category 3. As for universities, overall international standards will be raised by the development of and strengthening category 2, 3 and 4. On the other hand, as colleges showed the differences in each dimension of internationalization, there is a need for homogeneous and balanced launch and improvement of each category in internationalization. Initiating, improving and developing towards homogeneous and balanced international standards will be an opportunity to promote the overall and integrated internationalization of colleges. The internationalization of Thai private higher education institutions is expected to move toward the achievement of international standards through the stages of improvement, development and strengthening of each category.

8. Suggestions

8.1 Internationalization Process by Institution

Appropriate evaluation of the internationalization process needs to be conducted according to the organizational size (management, financial resources, personnel, etc.) of the institution. It is desired to plan concrete actions for internationalization with considering the respective strengths and weaknesses of universities and colleges. In light of the diversity of private higher education institutions, flexible and selective evaluation should be incorporated rather than one-size-fits-all and one-dimensional evaluation of the entire institution. Internationalization by institution type should be driven by an appropriate approach with considering all aspects of the establishment background, mission, vision, operational scale, regionality, etc., and the social existence value of each institution.

8.2 Prioritization of Issues

In view of several categories, areas and elements concerning internationalization, internationalization is not equable and monothetic in each institution by right. As the situation and circumstances in each institution are different, it should be progressed sequentially, gradually, and preferentially from the fields and areas that can achieve the international standards in the process of internationalization. A prioritization is an idea that makes the best use of the strengths and advantage in each institution. Some ways of prioritizations are as follows; 1) It is a method to consider three aspects of management, education, and research. 2) It is a way to discuss on the institutional side and the functional side in internationalization separately, 3) It is a methodology to integrate each category in internationalization by stages and organically, 4) With regard to evaluation methods or approaches, there is a method of introducing a PDCA cycle, or plan-do-check-act cycle system based on the internationalization accomplishment checklist such as a self-check assessment, 5) It is a way to combine various checklists that measure the progress and development of internationalization through the research products in existing higher education. 6) Related to this, it is a way to utilize

SWOT (strengths, weaknesses, opportunities and threats) analysis, road maps, benchmarking or best practices known as operational improvement tools management. Anyway, it is fairly certain that the effectual methods based on various approaches are suggested for use in promoting internationalization at full scale in Thailand.

8.3 Utilization of Quality Assurance System

The application of a quality assurance system means a method of measuring the outcome of internationalization in the institution by incorporating evaluation items related to internationalization. However, the quality assurance system by The Office for National Education Standards and Quality Assessment: ONESQA is centered on its role as an accreditation system. Therefore, there is an opinion that it is not linked with the internationalization evaluation (BICS, 2018, p.52). Although quality assurance aims to improve the educational standard essentially, to internationalize education standard is considered to have a high possibility of being a positive driver force of internationalization in terms of international applicability or validity and international commonality. In fact, ensuring international applicability is considered to be the first step in promoting internationalization. It is a model that can achieve internationalization by stepping up to 1) Applicability, 2) Openness, 3) Flexibility, 4) Connectivity, 5) Mobility, and 6) Diversity in the gradual development of the internationalization process (Ota, 2016, p.8).

For attaining the international standards, for example, a quality assurance framework such as ASEAN University Network Quality Assurance: AUN-QA might be used as a reference. AUN-QA has published quality assurance frameworks of the same quality as international standards by institution and program (AUN-QA, 2015). In fact, Thailand has several quality assurance systems approved by the OHEC. For example, there are the Alliance on Business Education and Scholarship for Tomorrow: ABEST21, European Foundation for Management Development Programme Accreditation System: EFMD, Education Criteria for Performance Excellence: EdPEx, etc (NIAD-UE 2015, p.9). The application of an international quality assurance system, in part or in whole, seems to be beneficial for improving international standards in private higher education institutions qualitatively.

9. Acknowledgments

I would like to express the deepest appreciation to Asst. Prof. Dr. Waraporn Thaima, advisor and Asst. Prof. Dr. Sirinthorn Sinjindawong, co-advisor. I am also deeply grateful to Mr. Oscar Maruquez Malicad Jr. in English proofreading.

References

Aerden, A. (2017). The guide to quality in internationalisation 2nd edition, ECA [European Consortium for Accreditation in Higher Education] occasional paper. Retrieved July 6, 2019, from http://ecahe.eu/assets/uploads/2013/11/CeQuint-The-Guide-to-Quality-in-Internationalisation-edition-2017-1.pdf.

ASEAN University Network [AUN]. (2015). Guide to AUN-QA Assessment at Programme level Version 3.0. Retrieved 28 July, 2019, from http://www.aunsec.org/pdf/Guide%20to%20AUNQA%20Assessment%20at%20Programme%20Level%20Version%203_2015. pdf.

Beerkens, E., Brandenburg, U., Evers, N., van Gaalen, A., Hannah Leichsenring, H., & Zimmermann, V. (2010). Indicator projects on internationalisation: Approaches,methods and findings. A report in the context of the European project indicators for mapping & profiling internationalisation (IMPI). Gütersloh: CHE Consult GmbH.

Bureau of International Cooperation Strategy [BICS], Office of the Higher Education Commission, Thailand. (2018). Preliminary guidelines on internationalization IZN: Fulfilling the quality of global citizenship. Retrieved July 17, 2019, from https://drive.google.com/file/d/1qYgWXaa8cMo8MmnElfjrctdc 7e6Yhb/view.

Ellingboe, B., J. (1998). Divisional strategies to internationalize a campus portrait: Results, resistance, and recommendations from a case study at a U.S. university. In J. A. Mestenhauser and B. J. Ellingboe (Ed.), Reforming the higher education curriculum: Internationalizing the campus (pp.198-228). The American Council on Education. Phoenix, AZ: The Oryx Press.

Knight, J., & De Wit, H. (Eds.). (1999). Quality and internationalization in higher education. Paris: OECD. Retrieved April 9, 2019, from https://www.oecdilibrary.org/docserver/9789264173361en.pdf?expires=1555087754&id=id&accname=guest&checksum=07510D3C9E2E871E218D217AB69FF4E.

Mestenhauser, J., A., & Ellingboe, B., J. (Eds.). (1998). Reforming the higher education curriculum: Internationalizing the campus. The American Council on Education, Phoenix, Ariz.: Oryx Press.

National Institution for Academic Degrees and Quality Enhancement of Higher Education [NIAD-QE]. (n.d.). Kokusaika hyouka [Internationalization evaluation]. Retrieved Aug, 10, 2019, from https://www.niad.ac.jp/consolidation/international/intl_evaluation/#case12.

National Institution for Academic Degrees and University Evaluation [NIAD-UE]. (2015). Briefing on Thailand: Quality assurance in higher education. Retrieved July 8, 2019, from https://www.niad.ac.jp/n_kokusai/info/thailand/BriefingonThailandQAinHE(JP).

Office of the Higher Education Commission [OHEC]. (2018). Directory of coordinators for international affairs in Thai higher education institutions 2018. Deprived July 8, 2019, from https://drive.google.com/file/d/1vU3-m17K76dVA8AuNWzCmgP0x7FM6iO-/view.

Ota, H. (2016). Internationalization of higher education: Trends and challenges: Featured articles: Internationalization of higher education: A response to globalization. Journal of International Education, Vol.22, pp.1-9.

Paige, R. M. (Ed.) (1993). Education for intercultural experience. Yarmouth: Intercultural Press.

Yonezawa, A. (Ed.). (2008). Reviews on the internationalization of universities implemented by universities themselves and third-party evaluation organizations. A survey commissioned by Ministry of Education, Culture, Sports, Science and Technology [MEXT], Tohoku University.