

Impact of excellence programs on Taiwan higher education in terms of quality assurance and academic excellence, examining the conflicting role of Taiwan's accrediting agencies

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Abstract Higher Education Evaluation & Accreditation Council of Taiwan (HEEACT) was established in 2005 and began to accredit 76 four-year comprehensive universities and colleges in Taiwan in 2006. Commissioned officially with a dual mission, HEEACT has been encouraged to conduct various ranking research projects, including global and national ones starting in 2007. One of the HEEACT's most influential rankings is "Performance Ranking of Scientific Papers for World Universities." Given the fact that more and more national accrediting bodies are developing ranking systems, these dual roles like in the HEEACT case have led to many discussions and raised severe criticism in the quality assurance community due to their different aims and approaches. Therefore, the purposes of the paper are to provide an understanding of the functions of varying quality assessment tools in higher education, to analyze their impact on Taiwan higher education and to examine the conflicting roles of HEEACT while conducting both accreditation and rankings over the institutions that have been granted the two major national Research and Teaching Excellence Programs.

Keywords Quality assurance · Ranking · Accreditation · Higher education

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Introduction

Globalization in the twenty-first century presents universities and states with a number of challenges and opportunities. Currently, the major concern for both of them is how to assure quality in higher education and to enhance global competitiveness through a variety of policies and actions. Hence, quality assurance mechanisms and rankings, which emphasize output monitoring and measurements and systems of accountability and auditing, have become more popular worldwide (Marginson 2007).

Up to present, nearly 90% of the governments in Europe and the Asian-Pacific region have successfully developed a national quality assurance system. Some accrediting agencies in Pakistan, Malaysia, Kazakhstan, and Taiwan, being both a quality assurance agency and a producer of rankings, were expected to assist governments to promote academic excellence and international competitiveness of higher education (Salmi 2009). Currently, several quality assurance organizations and networks have begun to pay more attention to the impact of rankings on higher education, such as the International Network for Quality Assurance Agencies in Higher Education (INQAAHE) and Asia Pacific Quality Network (APQN), Council for Higher Education Accreditation (CHEA), and so on.

Throughout the rapid expansion in higher education over the past two decades, the number of Taiwan universities has been increased from 50 to 160. With a strong request by the general public to enhance the overall quality of higher education, Taiwan's government passed the "University Law" that was then revised in 2005, under which all Taiwan universities and colleges are obligated for assessments regularly with regard to standards and procedures by accrediting agencies chartered by the Ministry of Education. In the same year, under the raging pressure of

global and regional competitions of the twenty-first century, Taiwan's government started to invest in a few selective universities based on their academic performances of global rankings.

Based on the bylaws above, Higher Education Evaluation & Accreditation Council of Taiwan (HEEACT) was established in 2005 and began to accredit 76 four-year comprehensive universities and colleges in Taiwan in 2006. The first cycle of program-based accreditation had been completed by the end of the year 2010. In addition, HEEACT was commissioned officially to conduct various ranking projects, including global and national ones starting in 2007. One of HEEACT's most influential rankings is "Performance Ranking of Scientific Papers for World Universities".

As a matter of fact, HEEACT's dual roles were challenged by many Taiwan universities and confused the public due to its different aims and approaches while it was conducting both assessment and ranking activities together. For example, as an accrediting agency, HEEACT mainly adopted the "fitness for purpose" approach to carry out the reviews. On the other hand, as a global ranker, it applies the standard-based approach with a number of predetermined criteria to all institutions owing to Taiwan's national academic excellence policy. Its dual missions have led to conflicting roles and the misperceptions about the methods and processes of both assessment tools.

Therefore, the purposes of the paper are to provide an understanding of the functions of varying quality assessment tools in higher education, analyzing their impact on Taiwan higher education, and examining the conflicting roles of HEEACT while conducting both accreditation and rankings over the institutions that have been granted the two major national Research and Teaching Excellence Programs.

Quality assurance and global competitiveness

Today, with the rapid expansion of higher education institutions throughout the world and education's increasingly market-based orientation, students, parents, higher educators, employers, and governments have a much greater interest in the actual academic quality of universities and colleges. Definitely, universities and colleges are beginning to take on accountability toward related members of the school and societies in the same way that private enterprise does. Colleges are being requested to present institutional effectiveness to the general public. Besides, "universities are expected to have goals and plans to attain them, as well as mechanisms for evaluating their progress" (Ramirez 2010, p. 43). In this way, universities are supposed to act as an effective organizer and a good learner on

how to improve their quality, particularly in research and teaching quality, through several assessment tools (Henard 2010).

Recently, quality assurance has become an issue beyond individual institutions and nations due to global competitions among nations. Because technological and economic development depends significantly on the quality of research output of a nation, and in many ways, the academic research of the higher education community represents the competitiveness of a nation. Thus, research universities "stand at the apex of a higher education, providing access to international scholarship and producing the research that may contribute to the growth of knowledge worldwide and in local economies" (Altbach 2009, p. 25).

To reflect the global competitions, more and more nations, no matter whether they are developed or developing ones, are eager to build at least one top research university, and it is now called "world-class" institution. Consequently, "policymakers in many countries have prioritized building research universities that would help their countries obtain a superior position in the global competition" (Shin 2009, p. 669). Reflecting the perceptions of policymakers, many Asian governments launched excellence programs to build world-class research universities, such as the 1998 China's "985 project," the 1999 Brain Korea 21 (BK 21) program in South Korea, the 2002 Center of Excellence Program in Japan, and the 5-year 50 billion Academic Excellence Program in Taiwan in 2005 (Ma 2007; Yonezawa 2007; Shin 2009; Hou and Morse 2009). Marginson (2010) indicated that accelerated public investment in research and "world-class" universities" has forged a unique education investment culture called the "Confucian Model" in the region.

Nowadays, the quality assurance movement and global competitiveness have been intertwined into a complicated issue, to a certain extent, since they deal with the balancing of the teaching and research missions of an institution. It has caused widespread discussions over the appropriate use of various assessment instruments on overall higher education quality and on an individual university's performance.

Quality assessment instruments of higher education

Several types of tools for assessing quality in higher education have been developed recently based on purposes and processes, including quality assurance, auditing, accreditation, evaluation, ranking, benchmarking, and so on. They are all among the most common forms of accountability (Salmi and Saroyan 2007). A study by the European Network for Quality Assurance (ENQA) identified eight main types of evaluation across ENQA member states (ENQA 2003) (see Fig. 1).

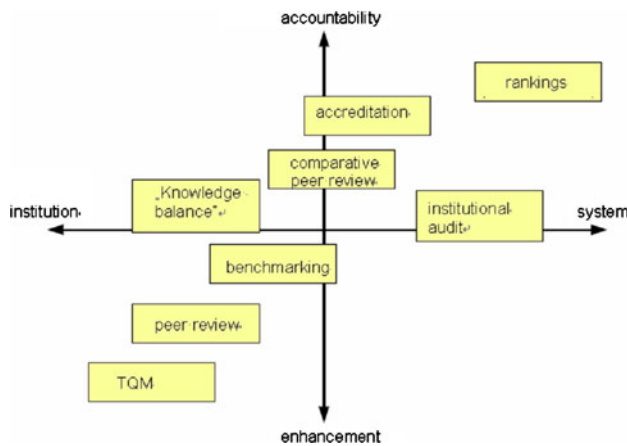


Fig. 1 8 Main types of evaluation

The study showed that all assessment instruments can be grouped along two lines: One is the assessment unit (institution vs. system); the other one refers to the main purposes of the instruments, which depends on whether the assessed unit used the assessment tool for internal self-enhancement or regarded them as external *accountability* (Federkeil 2007). Most of the time, these tools, however, can not be understood clearly due to their different functions and purposes, particularly the difference between accreditation and evaluation. Marginson defined that “accreditation” which “is concerned with determining inclusion in the system based on minimum standards within each classification” (personal communication, Nov. 30, 2009). According to CHEA, “accreditation” means “a process of external quality review created and used by higher education to examine colleges, universities and programs for the purposes of quality assurance and quality improvement” (CHEA 2008, p. 12). In other words, accreditation “is a voluntary process of approval of an institution or program by an accrediting agency or body” according to its own mission and goal (WASC 2008). As to “evaluation,” it involves decisions by peers and/or stakeholders concerning an individual institution’s achievement, excellence and/or potentials. “Evaluation” clearly “focuses more on how successfully the institution is achieving its goals and objectives” (National Institution for Academic Degrees and University Evaluation 2007, p. 4). Some evaluation agencies evaluate the performance in terms of the same set of criteria and standards; this produces intense competition among all evaluated institutions and programs. This may or may not involve the assessment of performance against predetermined targets, it is likely to involve qualitative judgments as well as quantitatively based elements, and the information can be used for many different purposes. Yet, both of them often “involve a culture of self reflection and self-improvement” (Marginson, personal communication, Nov. 30, 2009).

Compared with “accreditation” and “evaluation,” “ranking,” being a kind of measurement tool for quality, is more debatable. According to Sadlak, ranking can be “defined as an established approach, with corresponding methodology and procedures, for displaying the comparative standing of whole institutions or certain domains of its performance, is now fast becoming a world wide phenomenon” (2006, p. 3). It involves an ordering of institutions, within each of the classification groups, on the basis of their performance as measured by selected indicators, including peer review and external judgment. So far the inclusion of these measures in ranking has not been achieved successfully (Marginson, personal communication, Nov. 30, 2009). Now it becomes an accepted component of an external tool for “quality assurance” because it can provide important information to everyone interested and involved in higher education and also help to provide effective independent analysis of what higher education is and does in certain aspects (Merisotis 2002; The Centre for Higher Education Research and Information 2008).

Due to the fact that the characteristics of top research universities are inevitably deemed to be strongly correlated to most indicators used by global rankings, despite several methodological flaws, many reports illustrate that students are still using ranking tables in their decision-making about where to study. Governments are also taking advantage of rankings to decide where to invest, and scientists use them to know where to work. Institutions use rankings to know where they stand and whom they can partner with. Therefore, more and more institutions explicitly have set a goal of obtaining a certain rank position by rising in the global rankings and tying resource allocation, hiring, and other decisions to this goal (De Maret 2007; Clarke 2007; Institute for Higher Education Policy 2007; Sadlak 2010).

Conflicting roles of accrediting agencies in quality assurance and rankings

Most rankings used to be published by mass media, such as U.S. News & World Report. Nowadays, the type of ranking providers has become quite diversified. Some are initiated by institutions themselves, like the Academic Ranking of World Universities by Shanghai Jiao Tong University; some are imposed on tertiary education institutions externally by a governmental accreditor. In some countries, “the ranking exercise is undertaken as part of the accreditation process, either by the accreditation agency itself, in countries where one exists, or by the authority in charge of tertiary education” (Salmi and Saroyan 2007). Take the Independent Quality Assurance Agency of Kazakhstan (IQAA), for example, as an accrediting body, it has published ranking outcomes for over 60 Kazakhstan colleges and universities since 2008 based on quantitative as well as

Table 1 Comparison between accrediting bodies and rankers

	Accrediting bodies	Rankers
Agency	Governmental or non-governmental/	Media/institutions/governmental units
Approach	Fitness for purpose Self-study/on-site visit/peer assessment	Comparison by a number of predetermined indicators
Type of data	Qualitative	Qualitative and quantitative
Nature	Voluntary/compulsory	Compulsory
Outcome presentation	Descriptive and qualitative report	Simple and sequentially numbered ranked
Purpose	Self-enhancement	Academic competition and provide public with information

Source Author

qualitative criteria (IQAA 2010). National Assessment and Accreditation in India is also planning to publish its own national Indian ranking soon. Higher Education Evaluation & Accreditation Council of Taiwan now has become a very reliable ranker for local and international users.

Given the fact that more and more national accrediting bodies developed ranking systems, their dual roles led to many discussions and even raised severe criticism in the quality assurance community due to their different aims and approaches. INQAAHE defined an accreditation body as “an organization delegated to make decisions, on behalf of the higher education sector, about the status, legitimacy or appropriateness of an institution, or programme” (Harvey 2011). According to UNESCO-CEPES, an accrediting body is a “non-governmental or private educational association of national or regional scope that develops evaluation standards and criteria and conducts peer evaluations and expert visits to assess whether or not those criteria are met” (Vlăsceanu et al. 2007, p. 28). Accrediting bodies, as external quality agencies, recognize the value of an analytical and self-critical process. Through the self-assessment report, the on-site visit team will try to understand and evaluate the institution or the program tentatively. Then, based on the report of the institution and the program and the recommendations of the review team, the accrediting bodies make the decision and likely give advice to the government (Martin and Stella 2007). No matter whether the accreditation operated by accrediting bodies is voluntary or compulsory, the “fitness for purpose” of that school or program in regard to the accreditation standards (not a comparison to other schools or programs) is the focus of the accreditation operation.

Different from accrediting bodies, rankers refer to being a producer of college rankings. Ranking “refers to the rating and ordering of higher education institutions or programs of study based on various criteria” by rankers (Harvey 2011). In other words, all institutions are compared to each other using a set of indicators determined arbitrarily by the rankers. Some rankers have invited institutions to provide them with quantitative data, and some have only used public databases. Rankings are not

voluntary like accreditation, because academic competition between schools and programs is their main objective (see Table 1).

Based on the analysis above, it has been found there exist obvious differences between the accrediting and ranking agencies. So, the dual roles played by an accrediting agency will be likely challenged and questioned by those who are under their review. However, whether an accrediting agency can be a ranker or not has pros and cons. According to Robert Morse, Director of Data Research U.S. News & World Report, he emphasized that “it can be complicated when a governmental accretor does both. It raises the question of independence and whether a governmental accretor is picking winners and losers among schools” (personal communication, Nov. 23, 2009). In fact, there is one advantage if a ranking is done by an accrediting agency which is the ranking could probably have a higher acceptance within universities, as what Federkeil stated, “there is trust in the fairness and objectivity” (personal communication, Nov. 22, 2009). Besides, there might be conflicts between ranking and consulting in the context of quality assurance. Compared to other types of rankers such as a university or mass media, there is much less difficulty in a position of conflict of interest for quality assurance agency (Marginson, personal communication, Nov. 30, 2009).

At present, rankings and accreditation are being discussed together as part of the accountability movement in many regions, including America, Europe, and Asia. Seemingly, accreditors when they are also ranking providers have been put into twin roles in some regions gradually.

Quality assurance and academic excellence policy in Taiwan higher education—two assessment tools conducted by HEEACT

Over the past 10 years, higher education in Taiwan has expanded impressively, increases in both with respect to the number of institutions and with respect to the number of enrolled students. As of 2008, the number of higher

education institutions has increased to 163, largely due to the upgrade of junior colleges to 4-year universities. Student enrollment increased 65% with a total number of 1.3 millions (Department of Higher Education 2008a).

These quantitative increases demonstrate emphatically that higher education in Taiwan has transformed from an elite-type educational system into a universal-type educational system. In response to both regional and global competitiveness in higher education, the Taiwan government has opted to reform its higher education systems, with a particular focus on provision, regulation, and financing (Mok 2000). Thus, Taiwan universities and colleges have been strongly encouraged to sharpen their global competitive edge. Thus, the greatest challenges for Taiwan's higher educational system are now twofold: quality assurance and international competitiveness in the globalized society.

In order to "oversee current assessment mechanisms, enhance teaching assessments, maintain teaching quality, and periodically conduct administrative assessment," based on the 2005 Revised University Law, a non-profit independent accrediting body jointly endowed by the Ministry of Education and 153 colleges and universities, the Higher Education Evaluation and Accreditation Council of Taiwan (HEEACT) was established. In response to the quest for a world-class university, the Taiwan government launched two Excellence Programs of Research and Teaching. The Research Excellence initiative titled "5-year 50 Billion Program for Developing First-class University and Top Research Centers" was launched in 2005. The program aims to develop at least one university as part of one of the world's top 100 universities in 5 years and at least fifteen key departments or cross-campus research centers as the top in Asia in 10 years (Hou 2011). Also in 2005, the other Teaching Excellence Program attempted to fund locally prestigious and multi-purposed but not research-oriented institutions to improve their overall teaching quality.

As a core part of a total national quality assurance framework for Taiwan, HEEACT carried out dual missions, with responsibility for both quality control and academic excellence of higher education institutions in Taiwan. HEEACT has done both through conducting accreditation and developing various ranking systems.

HEEACT accreditation model

As the leading non-governmental quality assurance agency in Taiwan, HEEACT adopted the revised American model, featuring peer reviews, on-site visits, and self-enhancement, each of which is added values that supersede the evaluative mode. In 2006, HEEACT began a 4-year, program-based, nationwide, modified accreditation of over 76

four-year comprehensive institutions, including military and police academies. Participation is mandatory, like in most Asian countries.

Over 2,900 reviewers from universities and industries are recommended by 49 Program Planning Committees formed by the Board to conduct evaluations (HEEACT 2011). The accreditation standards developed by HEEACT are as follows: 1. goals, features, and self-enhancement mechanisms, 2. curriculum design and teaching, 3. learning and student affairs, 4. research and professional performance, and 5. performance of graduates. There are three review outcomes of accreditation including "accredited," "conditionally accredited," and "denial". Those with a status of "conditionally accredited" or "denial" are supposed to be reviewed again 1 year later to check whether all major problems mentioned in the final accreditation report have been solved during the year (HEEACT 2011). The first cycle of program accreditation has been completed at the end of 2010, and the average rate for accredited status among a total of 1870 programs is 86.11%, for conditionally accredited 11.84%, and for denied 1.97% (see Table 2).

Indeed, HEEACT accreditation influenced all higher education institutions in ways of the funding of allocation policies and total enrollment controls based on review outcomes. If a program fails to pass the accreditation for two consecutive years, the MOE requests the university terminate its enrollment and operation (HEEACT 2011). Looking at institutions prior to review and after being accredited, there is no difference in that curriculum reform, and faculty hiring and resource allocation are still determined with complete academic autonomy. On the other hand, it can not be denied that most institutions wisely chose to close unaccredited programs based on the HEEACT accreditation final report. Administrators at higher education institutions realize that a pass in the evaluation exercise is vital for the survival of an institution (Hou 2011).

Starting in 2011, HEEACT is conducting a new comprehensive assessment over 81 four-year national and private universities and will also continue the second cycle program accreditation in the following year. Following the global trend of quality assurance, both institutional and programmatic accreditation will focus on the assessment of student learning outcomes. In HEEACT's handbook of the 2011 institutional accreditation, it emphasizes that an institution will be evaluated and examined according to PDCA (Plan-Do-Check-Act) model and the based evidence: first, it should have a clear mission to state its institutional identity; second, it should have favorable governance to integrate and allocate resources; and third, it should have set up a mechanism to assess student learning outcomes. It is more evident that the goal of the new

Table 2 Number and percent of programs by status

pReview status		Accredited		Accredited conditionally		Denial	
Year	Number of programs	Number	%	Number	%	Number	%
2006							
Fall	362	279	77.07	71	19.6	11	3.04
2007							
Spring	242	159	65.70	55	22.73	27	11.16
Fall	265(458 ^a)	386 ^a	84.28	65 ^a	14.19	7 ^a	1.53
2008							
Spring	231(418 ^a)	376 ^a	89.95	42 ^a	10.05	0	0
Fall	258(455 ^a)	425 ^a	93.41	30 ^a	6.59	0	0
2009							
Spring	220(378 ^a)	336 ^a	88.89	42 ^a	11.11	0	0
Fall	242(511 ^a)	484 ^a	94.72	27 ^a	5.28	0	0
2010							
Spring/Fall	50(78 ^a)	74 ^a	94.87	4 ^a	5.13	0	0
Total	1,870		86.11		11.84		1.97

Source Higher Education Evaluation & Accreditation Council of Taiwan (2011)

^a They are classes

outcome-based model applied in the 2011 institutional accreditation is “to ascertain whether each institution is operating well according to its mission and goals, and to assist the institution to identify itself, to find its strengths and weaknesses, to develop its features, and to engage in self-improvement through each institution’s self evaluation and onsite visits” (HEEACT 2011, p. 4).

HEEACT’s global ranking

In order to offer related, internationally comparable data and information for the Taiwanese government in higher education policy making, HEEACT started to develop varying types of college ranking systems, including “Statistical Analysis on Taiwan WOS Papers,” “Statistical Analysis on Taiwan ESI Papers and h(m) Indicators,” “Performance Ranking of Scientific Paper of World Universities,” “Analysis on Patents by Universities and Colleges in Taiwan,” “Performance Assessment on University and Industry Collaborations,” and “College Navigator in Taiwan.” It is expected that each institution will be able to develop its own competitive edge and undergo self-positioning based on the features of different ranking tools (HEEACT 2011).

Due to its global character and scientific approach, “Performance Ranking of Scientific Papers for World Universities” has become one of the most influential rankings published by HEEACT. The major goal of the HEEACT’s global ranking is to evaluate the current scientific paper performances on top 500 world universities in order to find out the gap between Taiwan universities and

the rest of the world’s universities (HEEACT 2011). Also, the global ranking attempts to provide universities in the newly smaller developed nations insights into the ideas of the development of research universities. More than 3,000 visitors browsed the website of HEEACT’s global ranking on the day it published.

The HEEACT’s global ranking employs data drawn from SCI and SSCI (Citation Indexes) to evaluate universities’ research performance. It considers publishing in international peer reviewed journal as the predominant mode of scientific research output, thus taking statistics on articles published in listed publications as an effective indicator of reflecting universities’ research performance (HEEACT 2009). It claims that analyses of SCI and SSCI make global university ranking fairer, with an emphasis on both quality and quantity of publications. It also takes account of recent research performance in order to make a fair comparison between institutions with different length of history. And it incorporates average number of criteria in its calculation of the score so as to prevent a predominance of large universities (see Table 3).

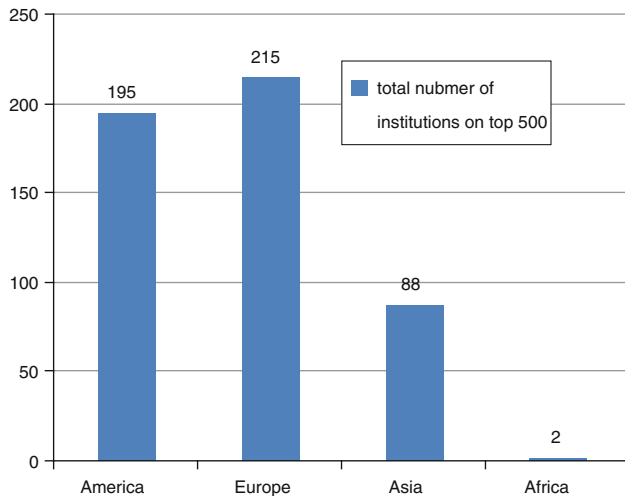
In 2008, HEEACT published an additional edition based on institutional size in order to minimize its impact on the final outcome. Besides, HEEACT also developed a global ranking by field and published top 300 institutions in each field in 2008. Six fields include agriculture & environment sciences, clinical medicine, engineering& computing, technology, life sciences, natural sciences, and social sciences.

According to the HEEACT 2010 global ranking, institutions in US and Europe still play predominant positions in the international higher education landscape (see Fig. 2).

Table 3 Criteria and weighting in HEEACT's global ranking

Criteria	Indicators	Weight	
Productivity	Number of articles in the last 11 years (1997–2007)	10	20
	Number of articles in the current years (2007)	10	
Impact	Number of citations in the last 11 years (1997–2007)	10	30
	Number of citations in the last 2 years (2006–2007)	10	
	Average number of citations in the last 11 years (1997–2007)	10	
Excellence	H-index of the last 2 years (2006–2007)	20	50
	Number of highly cited papers (1997–2007)	15	
	Number of articles in high-impact journals in the current year (2007)	15	

Source HEEACT (2009)

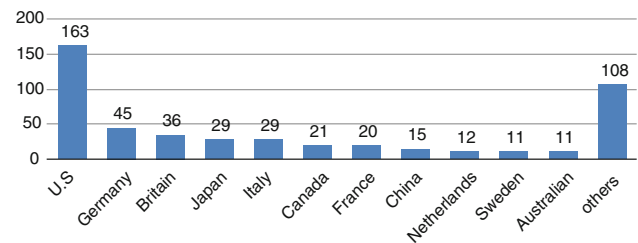
**Fig. 2** Proportion of top ranked institutions by region

It is noteworthy that most of the top 10 universities in the table, like the other global rankings, are US universities, while only two universities in the Asian-Pacific region are ranked within the world's top 30 universities, and both of them are from Japan (see Fig. 3).

There are seven Taiwan institutions on the top 500 of the HEEACT's global ranking, including National Taiwan University (102), National Cheng Kung University (307), National Tsing Hua University (347), National Chiao Tung University (456), Chang Gung University (479), National Central University (483), and National Yang Ming University (493), as compared to five in 2008 (HEEACT 2009). But in 2010, the number on top 500 declined to 5 institutions. Only National Cheng Kung University and National Tsing Hua University were ranked higher than in the previous year.

Comparison between performance outcomes of “5-year 50 billion” research universities and “Teaching Excellence Program” teaching-oriented universities in terms of HEEACT assessment tools

As mentioned above, the HEEACT's global ranking and teaching focused accreditation are officially regarded as the professional assessment tools to examine the overall

**Fig. 3** Top 10 countries with top ranked universities

performance of the selected institutions in order to see if the investment is worthwhile. Hence, both recipients from Research and Teaching Excellence Programs are being seriously examined based on standards and criteria developed by HEEACT.

From 2006 to 2009, 11 universities were selected and funded by the 5-year 50 billion Excellence Program (Department of Higher Education 2008b). National Taiwan University received \$ 375 million USD, up to 35% of the total fund. However, Taiwan's general public is quite concerned about overall performance of a few selective institutions in not only research output but also teaching quality with a highly concentrated investment policy. In other words, the 11 universities have been expected to not only increase their research but also improve teaching quality. It can be found that seven institutions on top 500 are all the recipients of the “5-year 50 Billion Excellence Program” by the MOE (Table 4). They shared 80.5% of the total fund. Top three recipients in the HEEACT global ranking are all national universities. To the public's surprise, with the lesser amount fund of 31.3 million USD, Chang Gung University is the only private institution ranked 479 which is performed better than the other recipients (Table 5). Generally speaking, there is a high level of correlation between HEEACT's global ranking outcomes and MOE funding. The more funding the institution gains, the higher position it ranks.

When it comes to overall teaching quality of these selected research universities, they did not reach the goal as expected. According to the HEEACT accreditation outcomes from 2006 to 2009, none of the programs among 11 selected universities was denied, and the pass rate of two

Table 4 MOE grants Taiwan's universities received from 2006 to 2009 (USD in million)

Institutions	2006	2007	2008	2009
National Taiwan University	93.8	93.8	93.8	93.8
National Cheng Kung University	53.1	53.1	53.1	53.1
National Tsing Hua University	31.3	31.3	37.5	37.5
National Chiao Tung University	25	25	28.1	28.1
National Central University	18.8	18.8	21.9	21.9
National Sun Yat-sen University	18.8	18.8	18.8	18.8
National Yang Ming University	15.6	15.6	15.6	15.6
National Chung Hsing University	12.5	12.5	14.1	14.1
National Taiwan University of Technology and Science	9.4	9.4	6.3	6.3
National Cheng Chi University	6.4	9.4	6.3	6.3
Chang Gung University	9.4	9.4	6.3	6.3

Source Department of Higher Education (2008b)

Table 5 Ranks of Taiwan's universities in HEEACT global ranking (2007–2010)

Taiwan Institutions	2007	2008	2009	2010	Total grants/\$1,250 USD in million (2006–2009)
National Taiwan University	185	141	102	114	375
National Cheng Kung University	360	328	307	302	212.5
National Tsing Hua University	429	366	347	346	137.5
National Chiao Tung University	471	463	456	479	106.3
Chang Gung University			479	493	31.3
National Central University			483		81.3
National Yang Ming University	/	475	493		62.5
					80.5% of total fund

Source By author

institutions in the “Excellent” rank of Excellence Program is lower than 90%. National Taiwan University has the highest pass rate up to 99.9%, National Chung Hsing University followed by with a ratio of 98% (see Table 6).

Different from the ones in the “Research Excellence Program,” the 31 recipients of the “Teaching Excellence Program” were selected according to their commitment to teaching quality enhancement, pedagogical approach innovation, and student learning outcomes assurance. From 2006 to 2009, 31 institutions were funded with a total of \$ 666 million USD, only a half of Research Excellence funding. None of the recipients of the teaching program was ranked on the top 500 in the HEEACT's global ranking, but they did perform very well in the HEEACT accreditation. The programs at the two recipients were accredited with a rate of 100%. None of their programs was located in the status of “denial.” The overall pass rate among 16 of out 31 institutions is all higher than 90% (see Table 7).

Discussion

Impact on Taiwan higher education

Based on the analysis above, it has been found that HEEACT's ranking and accreditation are having a

considerable impact on Taiwan's universities and are driving a force to change Taiwan higher education landscape.

First, given the fact that an increasing number of Taiwan universities have been moving into to top 500 in the HEEACT's global ranking demonstrates that the efficacy and success of the MOE Excellence Program, more and more Taiwan's institutions, including teaching-oriented universities, are encouraged to use the performance indicators of the HEEACT's global ranking as a benchmark to set their institutional long-term goal such as “Moving into Top 500.” Many changed their institutional policies in some aspects. Take Tamkang University for example, its Directors of Board requests university administrators to make a self-improvement plan based on each indicator of HEEACT's global ranking outcomes.

Second, the HEEACT accreditation gave recognition to many teaching-oriented universities granted with the MOE “Teaching Excellence Program.” Yet, some prestigious research universities did not perform as excellently as expected in the HEEACT accreditation, which led to public apprehension over the teaching quality of the selected research universities. Currently, these research universities are under great pressure to provide students with a good learning environment like the other Teaching Excellence Program's recipients.

Table 6 Accreditation outcomes in the 11 institutions funded by excellence program

Rank of 5-year 50 billion	Institution	Review status		Accredited		Accredited conditionally		Denial		Exemption
		Year	Number of programs	No	%	No	%	No	%	
Excellent	National Taiwan University	2010 spring	194	193	99.5	1	0.5	0	0	38 (1 accredited by program evaluation of graduate institute of Taiwan Literature in 2006; 37 accredited by IEET)
	National Cheng Kung University	2008 Fall	113	100	88.50	13	11.50	0	0	55 (52 petitioned for exemption; 1 accredited by TMAC; 2 accredited by TNAC)
	National Tsing Hwa University	2008 Spring	77	71	92.21	6	7.79	0	0	4 (3 evaluated by Chemistry program evaluation; 1 accredited by program evaluation of graduate institute of Taiwan Literature)
	National Jiao Tong University	2008 Fall	58	55	94.83	3	5.17	0	0	37 (14 accredited by IEET; 23 accredited by AACSB)
	National Central University	2008 Fall	80	71	88.75	9	11.25	0	0	15 (12 accredited by IEET; 3 accredited by Chemistry program evaluation)
	National Yang-Ming University	2009 Spring	50	48	96	2	4	0	0	5 (2 accredited by TMAC; 3 accredited by TNAC)
	Chang Gung University	2008 Fall	28	26	92.86	2	7.14	0	0	3 (1 accredited by TMAC; 2 accredited by TNAC)
Great	National Chung Hsing University	2007 Fall	90	89	98.89	1	1.11	0	0	25 (3 evaluated by Chemistry program evaluation; 1 accredited by program evaluation of graduate institute of Taiwan Literature; 21 accredited by IEET)
	National Sun Yat-San University	2009 Spring	43	41	95.35	2	4.65	0	0	38 (22 accredited by IEET; 16 accredited by AACSB)
	National Taiwan University of Science and Technology	Accredited by Taiwan Evaluation Association (institution graded first rank; faculties and program: 5 faculties graded first rank; 16 programs graded first rank; one program graded second rank)								
Good	National Cheng Chi University	2008 Spring	81	78	96.30	3	3.70	0	0	33 (3 accredited by program evaluation of graduate institute of Taiwan Literature in 2006; 30 accredited by AACSB)

Source By author

Third, there is indeed a high correlation between the HEEACT's global rank and governmental funding among the institutions, in other words, the more funding the institution gained, the higher its global ranking will be. The only exception is Chang Gung University. It is a private and entrepreneurial institution funded less but with a higher ranked status in HEEACT's ranking. Therefore, HEEACT's global ranking inevitably caused fiercer competition among research universities and triggered tension and confrontations over governmental resources allocation between research-oriented as well as teaching-typed institutions.

It is clearly foreseen that HEEACT's global ranking and accreditation will continue to accelerate institutional reforms in Taiwan higher education. As HEEACT's former President Roger Chen indicated, "many institutions

attempted to reallocate resources and revise the faculty reward system in order to improve their weaknesses in the indicators of research output and teaching. Some formed a task force to make both short-term and long-term strategies on how to achieve the designated rank or improve teaching quality several years later" (personal interview, Feb. 22, 2010).

Examining HEEACT's dual roles

The two quality assessment tools—accreditation and ranking—developed by, in some aspects, HEEACT were trusted as independent assessors by the government and the public provided with some transparent information and clues in terms of how to become a world-class university or a teaching-oriented institution. In other words, HEEACT

Table 7 Accreditation outcomes of the top 10 universities with a high pass rate in HEEACT accreditation

Institution	Funding (NT in million)	Review status		Accredited		Accredited conditionally		Denial		Exemption
		Year	Number of programs	No	%	No	%	No	%	
Feng Chia University	13,500	2008 Fall	35	35	100	0	0	0	0	8 (8 Degree programs were not conferred accreditation)
Kaohsiung Medical University	8,000	2008 Fall	44	44	100	0	0	0	0	5 (3 evaluated by Chemistry program evaluation i; 1 accredited by TMAC; 1 accredited by TNAC)
Ming Chuan University	7,200	2008 Fall	49	48	97.96	1	2.04	0	0	12 petitioned for exemption
Chung Yuan Christian University	11,900	2008 Spring	37	36	97.30	1	2.70	0	0	30 (3 evaluated by Chemistry program evaluation; 3 Degree programs were not conferred accreditation; 24 accredited by IEET)
Yuan Ze University	12,800	2007 Fall	26	25	96.15	1	3.85	0	0	18 (18 accredited by IEET)
Soochow University	11,000	2008 Fall	48	46	95.83	2	4.17	0	0	2 (2 accredited by IEET)
Fu Jen Catholic University	8,000	2007 Fall	86	82	95.35	4	4.65	0	0	16 (3 evaluated by Chemistry program evaluation; 13 accredited by IEET)
Asia University		2008 Spring	40	38	95	2	5	0	0	
Shih Hsin University	11,000	2008 Spring	42	40	95.24	2	4.76	0	0	1 (1 Degree program was not conferred accreditation)
		2008 Spring	40	38	95	2	5	0	0	
National Dong Hwa University	3,600	2008 Spring	54	51	94.44	3	5.56	0	0	5 (3 accredited by IEET; 2 Degree programs were not conferred accreditation)

Source By author

was successfully recognized nationwide as a reliable information provider.

As Marginson agreed that “HEEACT ranking has been of high quality. The quality of media ranking tends to be poor, because mass media do not feel an obligation to perform the task rigorously, tend to use a market research approach rather than social science approach to the process, and are inclined to cut costs whenever possible” (personal communication, Nov. 30, 2009).

In some sense, HEEACT’s dual roles indeed have been challenged by both groups of research-type and teaching-oriented institutions when it comes to purposes and processes of the two assessment tools. HEEACT’s accreditation applies the “fitness for purpose” approach based on the mission and goal of an individual institution. Because Institutional features are respected, HEEACT doesn’t rate the review outcomes of all institutions. On the contrary, the elements of HEEACT’s global ranking characterize academic competitions and quality of research output, which provoked severe criticism over its indicators and purposes

from Taiwan college presidents and some board members of HEEACT. Those universities that are not on the top 500 were worried about whether the very research-oriented indicators in HEEACT ranking would be adopted as the only criteria in the selection process for the governmental funding allocation. Several social sciences and humanity colleges severely challenged the legitimacy of HEEACT as a ranker when it claimed the accreditation model aims at assisting the institutions to enhance their overall quality of education, not comparing them based on a set of research criteria and indicators.

It is evident that the rankings have their methodological limitations. The problems have led to what Neubauer called “reductionism.” Rankings are fundamentally reductionists with a simplistic nature, which has led to the unbalanced campus culture of research over teaching and reduced university’s multi-functions because of the accumulated publication indexes and the use of reputational survey (Neubauer 2010). Truly, no list of the strongest universities can capture all the intangible, life-changing

and paradigm-shifting work that universities undertake. HEEACT's global ranking can not even fully capture some of the basics of university activity—learning and teaching quality. Besides, “using citation counts as a way of measuring excellence also presents serious problems” because these data “emphasize material in English and journals that are readily available in the larger academic systems,” like in US and UK. Many studies also show that those with medical schools and department in the hard sciences generally have a significant advantage because these fields generate more external funding and researchers in them publish more articles (Altbach 2006). Even worse, HEEACT's global ranking might likely marginalize teaching-type institutions remaining on the “knowledge periphery” in Taiwan higher education.

President of Faculty Union of National Cheng-Chi University, Chuing Prudence Chou criticized HEEACT severely, “HEEACT's ranking indicators misled institutions to an unbalance academic development and hurt the diversity and autonomy of higher education institutions because of the strong link between the number of publications and governmental funding” (Chou 2011). However, HEEACT's former President Roger Chen responded that “different from global ranking in which research outputs count only, HEEACT accreditation mainly focused on teaching quality. I am hoping that universities will not misuse them, being misled by both tools” (Chen, personal interview, Feb 22, 2010). Yet, when most institutions can not differentiate clearly the two assessment tools, the HEEACT's dual roles will continue to be questioned in Taiwan society.

Conclusion

Quality and excellence in higher education have become major concerns in Taiwanese society. As higher education globalizes, the pressure from international competitions and accountability will accelerate the importance of accreditation and ranking in Taiwan higher education. More importantly, some quality assurance agencies, like HEEACT, are engaged in developing college rankings, which leads to a major concern over its dual roles in dealing with the conflicting purposes of accreditation and rankings simultaneously. Compared with mass media with a market approach to the ranking process, HEEACT is a more reliable and independent ranker to provide transparent information with institutions. In other words, the reliability and creditability of the college rankings are regarded as very important factors than other concerns even if the agencies are playing dual roles.

Many of Taiwan's institutions have started to develop a self-enhancement mechanism with a rooted quality culture

as a way of “accreditation,” as well as to position their academic status and long-term mission in terms of national or global rankings. At the same time, some governments are setting targets in order that a certain number of their institutions are able to develop into world-class universities while promoting the quality of the national higher education system. Owing to the different goals and methodological approaches of both assessment tools, it will be effective if institutions and governments can understand the key methodological features of the accreditation and rankings when they are identifying one or more of the global rankings or when they are doing their strategic planning and goal setting based on a quality assurance system. Therefore, if some evidence of the adequate use of accreditation and rankings could be provided for educational policy makers, such as HEEACT, the dual missions of quality assurance agencies, though remaining controversial in Taiwan society, may be likely accepted in the future.

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