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Internationalization for quality in Chinese research universities: student perspectives

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Abstract China's rapidly expanding university system aims to balance quantity and quality through a variety of measures, including internationalization. This paper employs data from a survey of 1264 students from 39 higher education institutions in order to understand students' view on institutional approaches to internationalization. The data show that "the Project 985" universities (elite research universities in China) have used internationalization to sustain two objectives: elite education and innovative research for quality, because there are high levels of agreement on three indicators with internationalization of these universities: student and faculty mobility, internationalizing curriculum and program, and international research collaboration and partnership. In "the Project 211" universities (second-tier research universities), the data show that internationalization activities are highly related to curriculum reforms and faculty mobility. While the other degree-offering universities provide less opportunity for internationalization, the non-degree-offering institutions find their distinct way for institutional internationalization by providing more "international internship" opportunities. Our analysis also indicates that institutional internationalization is disciplinary oriented. In disciplines like law and art, students do not think that many activities are taken for internationalization by their institutions, while such disciplines as economics, management, and education have a higher level of internationalization. The paper will explain these findings in detail.

Keywords Higher education system · Chinese research universities · Institutional internationalization · Internationalization for quality · Student perspectives

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Background

Internationalization of higher education has become an irresistible trend under the influence of globalization since the beginning of the twenty-first century. Over the past decade, globalization has been not only promoting international cooperation, but also exacerbating competition among educational institutions even inside the Chinese higher education system. Therefore, "the Project 985" universities and "the Project 211" are considered as two types of universities to enhance national competitiveness in the world with increasingly globalized knowledge economy. In China, the "the Project 985" and "the Project 211" universities are regarded as knowledge-exploring entities, carrying social, cultural, ideological, political, and economic responsibilities to the country. Internationalization has become one of the effective strategies adopted by those universities in responding to globalization for quality in research, teaching, and learning.

Since 1990, the notion of "Internationalization of Higher Education" began to be used to replace the two concepts "International Education" and "International Cooperation" for more accurate description of the phenomenon taking place in higher education. The shift reflects the increasing importance of international dimension gradually transferring from the margin of higher education to its core (Elspeth and De Wit 2012).

The emergence of the notion of "Internationalization of Higher Education" attracted a number of scholars to give a comprehensive definition to the new concept. Arum and Van de Water (1992, p. 202) defined it as "the multiple activities, programs and services that fall within international studies, international educational exchange and technical cooperation," whereas Knight (1994, p. 7) defined "internationalization" as the "process of integrating an international and intercultural dimension into the teaching, research, and service functions of the institution." In order to apply the definition to a broad range of contexts, Knight (2003) revised her definition into "the process of integrating an international, intercultural, or global dimension into the purpose, functions, or delivery of post-secondary education." Soderqvist (2002, p. 29) regards it not only as a process but also a holistic management at the institutional level. She defines it as "a change process from a national higher education institution to an international higher education institution leading to the inclusion of an international dimension in all aspects of its holistic management in order to enhance the quality of teaching and learning and to achieve the desired competencies."

Many approaches in the literature are explored to interpret the term. The following four are the most typical ones and widely referenced in the field:

- *The activity approach* defines institutional internationalization in terms of categories or types of activities, such as the numbers of international students, student/faculty mobility, international dual degree (e.g., ACE 2012; Harari 1992; Maringe 2008; Mestenhauser and Ellingboe 1998; Powell 2004).
- *The competency approach* describes institutional internationalization in terms of developing new knowledge, skills, attitudes, and values in students, faculty, and staff, and at the same time improving an institute's capability in both teaching and research (e.g., Ayoubi and Massoud 2007; Elkin et al. 2008; Mcgowan and Potter 2008; Van der Wende 2007).
- *The rationale approach* describes internationalization in terms of its purpose and outcomes (e.g., De Wit 2009; Knight 2004).

- *The process approach* defines internationalization as a process which aims to integrate international dimension into teaching, research, and service of the institution (De Wit 2002; Knight 1994).

Among the above four approaches, "the activity approach" and "the competency approach" are extensively utilized in the literature to address the issues of higher education internationalization. Different from the rationale approach and process approach, these two approaches are conducted by initially establishing a reliable and valid index system and then employing it as an instrument or benchmark to examine internationalization. The measurable methodological feature might be the salient advantage contributing to their high popularities in the field of higher education internationalization. However, there might be an obvious weakness that the two approaches are often separately instead jointly used in one research although there could be a hypothesis that the more the international activities students/staff participated, the higher the international competency they obtained. It is also commonly recognized that improving students'/staff's international competency (IC) could be one of the effective ways to enhance educational quality of the higher learning institution. Hence, there seems to be a potential connection between activity, competency, and the higher education quality. But the relationship is neglected in the literature. Therefore, the study aims to fulfill the gap by examining how internationalization activities influence the acquisition of students'/staff's international competency and therefore improve educational quality in the Chinese research universities (Fig. 1).

Literature review

Activity approach is extensively utilized in the literature to examine the institutional internationalization. For example, Maringe (2008) conducts a research among 37 universities in the UK based on the five activities: (1) recruitment of international students; (2) students, faculty, and staff exchange; (3) development of partnership, such as cooperative education, cross-broader education; (4) strategic development of research collaboration; and (5) internationalization of curriculum, including major amendment of teaching objectives, methods, and evaluation, and minor amendment of curriculum content. The study sheds light on the application of activity approach in examining institutional internationalization in the UK, but types of universities are not involved in the study. Other studies roughly categorize the universities into different types, but the types are not used as a variable in the analysis. For example, a research conducted by the European University Association (EUA 2013) examines institutions' responses to the (1) international students, (2) institutional internationalization strategies and their impact, (3) institutional priorities for internationalization, and (4) general impact of EU measures on institutional internationalization strategy. A total of 180 complete responses from 175 individual higher education institutions in 38 countries were received. Although these institutions are roughly categorized into three types: comprehensive universities, technical universities, and specialized or other institutions, the types were not involved as a variable in the study.

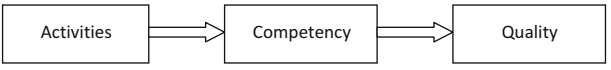

Fig. 1 Activities, competency, and quality education

The research conducted by American Council on Education (ACE 2012) has a relatively clear categorization of American higher education systems, and there is an explicit comparison between different types of universities. The project involving 1041 accredited, degree-granting post-secondary institutions in the USA in 2011 examines institutional internationalization based on the following six activities: (1) articulated institutional commitment; (2) administrative structure and staffing; (3) curriculum, co-curriculum, and learning outcomes; (4) faculty policies and practices; (5) student mobility; and (6) collaboration and partnership. Five types of universities are identified in the research: doctoral institutions, masters' institutions, baccalaureate institutions, associate institutions, and other specialized institutions. The findings show that among the 1041 higher education institutions, 55 % of the doctoral institutions have campus-wide internationalization plans, while 35, 28, 21, and 17 % are, respectively, for masters', baccalaureate, associate, and special focus institutions that have such plans. Baccalaureate and master's institutions are most likely to have their courses featuring global trends and issues compared to other types of institutions; 25 % of doctoral institutions, 12 and 11 % master's and baccalaureate institutions, and 1 % of associate institutions have guidelines specifying international work or experience as a consideration in faculty promotion and tenure decisions; 48, 39, 41 % of doctoral, master's, and baccalaureate institutions, respectively, have a strategic international student recruitment plan.

Yonezawa et al. (2009) surveyed 756 Japanese institutions according to six activities: (1) awareness of institutional leaders; (2) education and curriculum; (3) academic and research; (4) overseas activities; (5) proficiency of English; and (6) foreign language class. These institutions are roughly categorized into three types: national universities, local public universities, and private universities. The findings show that national universities have higher level in the all six aspects than local public universities and private universities; in the six activities, local public universities and private universities give more attention on overseas activities; and private universities have more interests in recruiting international students.

Those comprehensive studies have drawn an explicit picture of the institutional internationalization in a certain country or region, but the findings may not be well applied in China's higher education as China has a completely different higher education system from American and European countries. Hence, in order to deeply understand the status of internationalization of Chinese institutions, it is necessary to have China's own studies rooted in the context of China's higher education.

Admittedly, with a set of explicitly systematical index indictors, activity approach is able to provide a straightforward perspective to examine institutional internationalization. With different perceptions, competency approach evaluates the institutional internationalization by measuring students' international competency as most researchers in the field hold a view that the main purpose of developing institutional internationalization is to improve students' international competency and help them to become global citizens in the globalized world.

The concept of international competency is defined as "a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts." It is consisted of three dimensions (Bennett 2008):

- the first dimension involves broad and deep knowledge of world history, geography, and the global aspects of health care, climate change, economics, politics, international relations, and other issues, and an understanding of the process of globalization itself

and a capacity to think critically and creatively about complex international challenges (knowledge)

- the second is a positive approach toward cultural differences and a willingness to engage those differences. That requires empathy with people with other cultural identities, an interest and understanding of various civilizations and their histories, and the ability to see those differences as opportunities for constructive, respectful, and peaceful transactions (attitude)
- the third dimension of international competency is the ability to speak, understand, and think in several foreign languages (skill)

The definition and its content involved are highly consistent with the UNICEF's definition of quality in education, in which the outcome of quality education is defined to "encompass knowledge, skills and attitudes, and (to be) linked to national goals for education and positive participation in society" (UNICEF 2000). In the international education domain, the implication of "society" is enlarged to a broader scope to the globe, not merely the domestic but the international society. Thus, it is not hard to confirm that there is an association between international competency and quality education. That is to say, improving students' international competency can be an effective way to enhance the quality of education.

Based on the literature, a theoretical framework has been developed for the purpose to guide the research (Fig. 2).

Internationalization of Chinese universities

According to the Ministry of Education (MOE 2011), there were 2723 higher education institutions with 31.05 million students and 1.343 million teachers in 2010. The internationalization of higher education in China can be dated back to the latter half of the nineteenth century when China became a semi-colonial country. At that time, a few Chinese cutting-edge scholars proposed a slogan of "Saving the Nation through Education" and aimed to cultivate local talents by introducing modern higher education model of academic patterns and organizational system, notably from Japan, Germany, the USA, France, and the UK to China (Huang 2003). The majority of traditional curricula were replaced by the Western advanced knowledge of sciences and technology (Chen 2002). After 1949, the Soviet educational model was introduced into China and deeply influenced Chinese higher education development until the end of the 1970s (Chen 2002; Huang 2003).

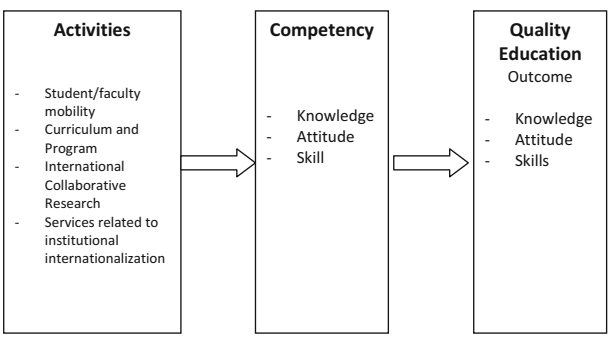

Fig. 2 Theoretical framework—association between activities, competency, and quality education

Since 1978, with the implementation of the open-door policy and economic reform and motivated by a desire for realizing the "the Four Modernizations,"[1] China has networked extensively with other countries in the world and thus made a vast attempt to internationalize its higher education (Huang 2003). Sending a great number of students and scholars abroad was one of the most important strategies adopted by the Chinese government to solve the problem of a shortage of highly educated personnel (Fu 2008; Huang 2003; MOB 1978). By 1998, there were nearly 300,000 Chinese studying abroad. Among them, nearly 50,000 were sponsored by the Ministry of Education, or other departments of the central government, or provincial governments (Chen 2002). Now, many statistics show that the number of students studying abroad increased dramatically.

Apart from sending students and scholars abroad, a series of policies were also made to encourage foreign students, scholars, and experts to China. In 1979, the Ministry of Education and Ministry of Foreign Affairs set a strategic objective of increasing the number of international students in China (Chen 2002). Since then, the number of international students has rapidly grown. According to Fu (2008), there were 43,084 foreign students enrolling either in short-term training courses or in long-term degree courses in Chinese higher education institutions in 1998, while the number was only 1236 in 1978. Since 2000, the number has been dramatically increased. The report of *International Students in China* issued by the Ministry of Education shows that the number was 292,611 in 2011, which made China edged into the top 10 international student host countries in the world. Research universities were the main host institutions in attracting these foreign students. Statistics show that the number of international students enrolled in the research universities was nearly 40 % of the whole (MOE 2009). Aside from students, there was a dramatic increase in international experts and scholars in Chinese higher education institutions. According to Chen (2002), there were 14,798 foreign scholars and experts by 1995, whereas the number was only 1004 in 1985. The majority of foreign scholars were employed by the research universities.

Besides personnel (students, faculty, and administrators) mobility, internationalization of university curriculum has inspired great enthusiasm. It includes teaching and learning foreign language (especially English), introducing and translating foreign university textbooks, building up collaborative research networks, and establishing transnational higher education institutions in Chinese higher education institutions. In 2001, the Ministry of Education set an objective that 5–10 % of all the undergraduate curricula must be taught in English or bilingually, especially in biology, information technology, finance, and law (Hu 2007; Liu 2001). Since then, the most recent original English textbooks from famous universities, such as Harvard University, Stanford University, and MIT, have been introduced into Chinese institutions, especially at some elite research universities (Hu 2007; Huang 2003). For instance, at Tsinghua University, 500 core curricula are using original English textbooks and other English materials, and Fudan University has introduced 7600 original textbooks from Harvard University (Hu 2007).

The emergence of transnational higher education institutions is also a salient indicator for the development of internationalization of higher education in China. Foreign higher education institution was strictly forbidden to build up campus and to recruit Chinese local students in China until the middle of the 1980s. By 1989, there were only two legally

[1] The modernization of industry, agriculture, national defense, and science and technology.

authorized cooperative higher education institutions in China: One was Johns Hopkins-Nanjing University Center for Chinese and American Studies, established in 1986 and financed by both Chinese and American governments; and the other was the Goethe Institute, Beijing, an outcome of cooperation between Goethe Institute in Germany and Beijing University of Foreign Studies (Huang 2003; Jin 2012). By 1999, there were 70 Chinese universities cooperating with the foreign universities from the USA, Australia, France, Norway, Singapore, and Thailand to offer courses in logistics, mass media and communication, international economics, business administration, industrial engineering, law, nursing, etc. (Huang 2003). By the end of 2002, the number of cooperative or joint programs and institutions has reached 712 covering 28 provinces, autonomous regions, and municipality in China (Jin 2012). According to the Ministry of Education, in 2013, there were 1780 cooperative or joint programs and institutions in China, among which 732 programs and institutions offer bachelor or above degree. Nearly one-fourth of programs are organized and implemented by Chinese research universities.

In conclusion, internationalization in Chinese universities has been developing dramatically in the past decades, which is clearly demonstrated by the highly frequent student/faculty mobility, internationalizing curriculum, and vigorous development of transnational higher education.

Types of Chinese higher education institutions

According to academic and research capacities, Chinese higher education institutions are roughly divided into four types. Among them, the first two are categorized into research university group, and other two are non-research university group 亿十.

- "*The Project 985*" *universities* (*elite research universities*): "the Project 985" has been launched as a constructive project for founding world-class universities in the twenty-first century since May 4, 1998, when President Jiang Zeming declared that "China must have a number of first-rate universities of international advanced level." In the initial phase, nine post-secondary higher education institutions were included in the project. The second phase, launched in 2004, expanded the program, and now, about 40 post-secondary higher education institutions are in the project. The universities in the project are all research universities and are administrated directly by China's Ministry of Education.
- "*The Project 211*" *universities* (*the second-tier research universities*): "the Project 211" is the Chinese government's endeavor aimed at strengthening about 100 institutions of higher education and key disciplinary areas as a national priority for the twenty-first century. The program was initiated in 1995 by China's Ministry of Education. It is aimed at cultivating high-level talents for national economic and social development strategies and has been incorporated as the country's medium- and long-term development program.
- *Other degree-offering universities* are those post-secondary higher education institutions that are not selected into "the Project 985" and "the Project 211" groups. The majority of courses offered are at undergraduate level. A small amount of graduate degree courses are offered too. Teaching is the priority task in this group of universities.
- *Non-degree-offering institutes* are those post-secondary higher education institutions offering 2- and/or 3-year undergraduate non-degree courses. Junior college and polytechnic institutions are categorized into this group.

The research design

In order to understand in which way China's universities enhance their quality of education through institutional internationalization, two research objectives are developed: (1) to describe what institutional internationalization status currently is in China's differentiated system of higher education by means of activity approach and (2) to examine how these activities help improve the students' international competency and thereby enhancing the quality of education.

Our research design has placed students at the center of the research. In this way, we are able to analyze the different influences and opportunities of internationalization from the perspective of students who attend different types of institutions and are the main beneficiaries of internationalization. Students' academic disciplines and academic levels are also included as important variables in the research.

In order to achieve the research goal, a survey questionnaire is developed to gather students' views on institutional internationalization. The questionnaire comprises three sections:

Section 1 is used to collect students' background information, which consists of four items: the name of the institution students are currently attending, student majors, student academic levels, and student overseas experiences (short-term exchange, long-term exchange, overseas summer school, international conferences, and internship abroad).

Section 2 comprises 13 items. Participating students are required to give their responses to the four institutional internationalization activities:

- student/faculty mobility (four items, Cronbach's $\alpha = .902$): students' participation in international exchange programs or activities; invitation of foreign scholars to give lectures; recruitment of international students; and recruitment of foreign faculty;
- curriculum and program (four items, Cronbach's $\alpha = .907$): setting up foreign language classes; using foreign language textbook; developing international curriculum; and offering joint or double degree with foreign universities;
- collaborative research (two items, Cronbach's $\alpha = .863$): international research collaboration and international publication; and
- services (three items, Cronbach's $\alpha = .894$): providing information related to international education; collection of books/journals in foreign language in the library; activities between local and international students on campus; other services such as visa application, etc.

Section 3 consists of 19 items which is designed to self-examine the students' international competency by three dimensions, knowledge (six items, Cronbach's $\alpha = .735$); attitude (seven items, Cronbach's $\alpha = .810$); and skills (six items, Cronbach's $\alpha = .726$).

A five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree) is used for these questions.

Sampling

All the college students who are currently studying in a post-secondary institution in Beijing are the target population in the study. Beijing is chosen to be studied as it is the capital city with 91 post-secondary institutions, consisting of four types of higher education institutions. A consent request was initially sent to the 91 institutions to get approval for data collection. According to their responses, 39 institutions gave consent to collecting data

among their current college students. An e-mail with the questionnaire URL was sent to the 39 institutions. With the assistance of the International Office in those institutions, the e-mail was then forwarded to all the students in the institutions. Students can access the questionnaire by clicking the URL. All the completed questionnaires were returned and saved automatically and anonymously in the Survey System of Education Technology Center at Peking University. It took 3 months to complete the data collection. Statistics record of the survey system shows that a total of 14,524 students browsed the questionnaire, and 1461 students gave their responses to the questionnaire. The response rate is 10 %. After data cleaning, there are a total of 1264 valid responded questionnaires. The participants' information is listed below by types of institutions, academic disciplines, and students' overseas experiences (Table 1).

Data analysis

Overseas experiences

According to the participants' responses, there are only 162 out of 1264 students (13 %) who have participated in overseas activities during the period of their studying in a higher education institution.

Table 1 Participants' information

Item	Description	*N*	%
Institution types	"The Project 985" universities	56	4
	"The Project 211" universities	356	28
	Other degree-offering universities	336	27
	Non-degree-offering institutes	516	42
Academic disciplines	Philosophy	10	.8
	Law	101	8
	Education	57	4.5
	Literature	211	17
	Theoretical science	143	11
	Engineering	292	23
	Agriculture	15	1
	Medicine	5	.4
	Management	176	14
	Economics	227	18
	Art	27	2
Academic levels	Junior college students	447	35
	Bachelor's student	661	52
	Master's student	146	12
	Doctoral student	10	1
Overseas experiences	Yes	162	13
	No	1102	87

A further Kruskal–Wallis test indicates that students' participation in overseas activities is significantly associated with the type of the institution ($\chi^2 = 98.093$, df = 5, $p = 0.000$) and their academic level ($\chi^2 = 45.018$, df = 4, $p = 0.000$).

Results show that students who are studying at "the Project 985" universities have the lowest score of non-participation of overseas activities (mean rank = 363.64), followed by "the Project 211" universities (mean rank = 637.16), non-degree-offering institutions (mean rank = 639.44), and other 4-year full-time universities (mean rank = 660.83).

Besides, doctoral students have the lowest score of non-participations of overseas activities (mean rank = 207.90), followed by bachelor's student (mean rank = 627.45), master's student (mean rank = 635.58), junior college student (mean rank = 659.61).

Next, various overseas experiences students participated are analyzed. Table 2 shows that short-term (<2 weeks) exchange has the highest percentage (5 %), while international conference has the lowest percentage (1 %) among the five students' overseas experiences.

Further Kruskal–Wallis tests find that:

- Participation of *short-term* (*<2 weeks*) *exchange* is significantly associated with students' academic levels ($\chi^2 = 20.570$, df = 4, $p = 0.000$). Doctoral students have the highest score (mean rank = 863.30), and students at other academic levels got the mean rank scores between 610.50 and 641.10.
- Participation of *long-term* (*more than 2 weeks*) *exchange* is significantly related to type of higher education institutions ($\chi^2 = 164.018$, df = 5, $p = 0.000$) and students' academic levels ($\chi^2 = 52.820$, df = 4, $p = 0.000$). Students from "the Project 985" universities have the highest scores (mean rank = 824.93) in participating long-term exchange. Students from other types of higher education institutions got the scores between 615.46 and 630.03. Also, doctoral students have higher scores (mean rank = 863.30) than students at other academic levels (mean rank = 610.50–641.10).
- Participation of *overseas summer school* is significantly associated with the type of higher education institutions ($\chi^2 = 82.282$, df = 5, $p = 0.000$) and students' academic levels ($\chi^2 = 11.989$, df = 4, $p = 0.017$). Students from "the Project 985" universities have the highest scores (mean rank = 724.07) in participating long-term exchange, and students from other types of higher education institutions got the scores between 622.50 and 633.79. Also, doctoral students have higher scores (mean rank = 685.70) than students at other academic levels (mean rank = 624.95–637.83)
- Participation of *international conferences* is significantly associated with the type of higher education institutions ($\chi^2 = 32.445$, df = 5, $p = 0.000$) and students' academic levels ($\chi^2 = 80.657$, df = 4, $p = 0.000$). Students from "the Project 985" universities have the highest scores (mean rank = 681.43) in participating long-term exchange. Students from other types of higher education institutions got the scores between

Table 2 Percentage of participants' overseas experiences

	Yes		No	
	N	%	*N*	%
Short-term (<2 weeks) exchange	61	5	1203	95
Long-term (more than 2 weeks) exchange	44	3	1220	97
Overseas summer school	20	2	1244	98
International conferences	15	1	1249	99
Internship abroad	34	3	1230	97

629.75 and 633.88. Again, doctoral students have higher scores (mean rank = 814.60) than students at other academic levels (mean rank = 625.00–646.64)

- *Internship abroad* is significantly related to other type of higher education institutions ($\chi^2 = 18.554$, df = 5, $p = 0.002$) and students' academic levels. Students from non-degree-offering institutions (mean rank = 655.00) have higher scores than other types of higher education institutions (mean rank = 634.51–620.83). Junior college students have a higher scores (mean rank = 678.70) than students at other academic levels (mean rank = 623.15–637.55).

Four activities

Table 3 shows a descriptive analysis of student participants' evaluation to the four institutional internationalization activities: student/faculty mobility, curriculum and program, collaborative research, and services. The scores of mean and SD indicate that students have a high evaluation to the four activities.

Subsequently, a linear regression test is conducted to find out whether there is a significant relationship between variables. The accumulative scores for each activity are defined as dependent variables, while institution types, academic levels, and academic disciplines (Table 4) are defined as independent variables (Table 5).

Model I: student/faculty mobility

According to the results, student/faculty mobility in "the Project 985" universities, "the Project 211" universities, and other degree-offering universities is significantly different from non-degree-offering institution to student/faculty mobility. Students from "the Project 985" universities ($B = 4.068$, $p = 0.001$) gave the highest evaluation to student/faculty mobility, followed by "the Project 211" universities ($B = 3.669$, $p = 0.000$), whereas other degree-offering universities ($B = 3.083$, $p = 0.002$) gave a significant lower evaluation compared to non-degree-offering institution.

In comparison with the fields of philosophy/agriculture/medicine, law students ($B = -2.990$, $p = 0.006$) and students in the field of theoretical sciences ($B = -2.091$, $p = 0.046$) gave significantly lower evaluation to the student/faculty mobility, and students in other fields have no significant difference in their evaluation to student/faculty mobility. However, the coefficient B indicates that economics ($B = -.248$), education ($B = -.395$), and management ($B = -.780$) have a relatively higher responses to student/faculty mobility.

Doctoral students, master students, and bachelor students are not significantly different from junior college students in evaluation to student/faculty mobility. However, the coefficient B shows that doctoral students ($B = .334$) have the relatively high evaluation to student/faculty mobility.

Table 3 Descriptive analysis of participants' responses to the four activities

	Mean	SD	Min	Max
Student/faculty mobility	14.8	3.7	4	20
Curriculum and program	14.1	3.5	4	20
Collaborative research	7.6	1.9	2	10
Services	10.3	3.0	3	15

Table 4 Independent variables

Variables	Description
Institution types	Non-degree-offering institutes (reference category)
	"The Project 985" universities
	"The Project 211" universities
	Other degree-offering universities
Academic disciplines	Philosophy/agriculture/medicine (reference category)[a]
	Law
	Education
	Literature
	Theoretical science
	Engineering
	Management
	Economics
	Art
Academic levels	Junior college students (reference category)
	Bachelor's student
	Master's student
	Doctoral student
Participation of overseas academic activities	No (reference category)
	Yes

[a] The sample size from the field of philosophy, agriculture, medicine is significantly small, so the three fields are combined to be studied in the paper

Model II: curriculum and program

In comparison with students from non-degree-offering universities, students from "the Project 211" universities ($B = 3.620$, $p = 0.004$) and "the Project 985" universities ($B = 2.213$, $p = 0.002$) gave significantly higher evaluation to internationalization of curriculum and program.

In comparison with students in the field of philosophy/agriculture/medicine, education students ($B = 2.632$, $p = 0.032$) gave significantly highest, whereas law students ($B = -2.502$, $p = 0.026$) gave significantly lowest evaluation to the internationalization of curriculum and program.

There is no significant difference in evaluating curriculum and program between students at different academic levels.

Model III: international collaborative research

In comparison with non-degree-offering institutions, students from "the Project 985" universities ($B = 1.319$, $p = 0.003$), "the Project 211" universities ($B = 1.111$, $p = 0.008$), and other degree-offering universities ($B = .972$, $p = 0.006$) gave significantly higher evaluation to the international research collaboration and partnership.

Table 5 Linear regression results of students' evaluation to four aspects of institutional internationalization

Explanatory variables	Model I			Model II			Model III			Model IV		
	Exp	df	Sig.	Exp	df	Sig.	Exp	df	Sig.	Exp	df	Sig.
"The Project 985" universities	4.068	1.231	.001**	2.213	.697	.002**	1.319	.436	.003**	.549	.882	.534
"The Project 211" universities	3.669	.989	.000***	3.620	1.266	.004**	1.111	.419	.008**	1.649	.739	.026*
Other degree-offering universities	−3.083	.992	.002**	−2.029	1.216	.095	.972	.351	.006**	1.254	.741	.091
Law	−2.990	1.090	.006**	−2.502	1.121	.026*	−.565	.386	.144	−1.921	.814	.018*
Education	−.395	1.193	.741	2.632	1.227	.032*	.075	.423	.860	1.011	.890	.257
Literature	−1.167	1.032	.258	.919	1.062	.387	−.269	.366	.463	−.447	.770	.562
Theoretical science	−2.091	1.049	.046*	−.423	1.079	.695	−.203	.372	.585	−.358	.783	.648
Engineering	−1.293	1.002	.197	−.089	1.031	.932	−.124	.355	.727	−.222	.748	.767
Management	−.780	1.047	.456	.769	1.078	.476	.096	.371	.795	.053	.782	.946
Economics	−.248	1.035	.810	1.736	1.065	.103	.121	.367	.743	−.145	.773	.852
Art	−1.084	1.407	.441	−1.226	1.448	.397	−.451	.499	.366	−1.315	1.050	.211
Bachelor's student	−.855	.944	.365	−.238	.971	.807	−.225	.335	.501	.170	.705	.809
Master's student	−.071	1.885	.970	.941	1.068	.378	.009	.669	.989	.100	.775	.897
Doctoral student	.334	1.037	.748	−.292	1.940	.880	.346	.368	.347	1.473	1.408	.295
N			1264			1264			1264			1264
Sig.			.000			.000			.000			.000
R^2			.099			.083			.092			.053

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Disciplines of philosophy/agriculture/medicine do not have significant difference with other disciplines in international collaborative research. However, the coefficient B indicates that economics ($B = .121$) and law ($B = .095$) have the highest, while law ($B = -.565$) and art ($B = -.451$) have the lowest evaluation to the international collaborative research.

Doctoral students ($B = 1.134$, $p = 0.000$) gave the highest evaluation to the international collaborative research in their institutions.

Model IV: services related to institutional internationalization

Students from "the Project 211" universities ($B = 1.649$, $p = 0.026$) gave significantly higher evaluation to services than students from junior colleges. Law students ($B = -1.983$, $p = 0.014$) gave significantly lowest evaluation to services.

Doctoral students, master students, and bachelor students are not significantly different from junior college students in evaluation to services. However, the coefficient B shows that doctoral students ($B = 1.473$) have a relatively high evaluation to services.

Self-evaluation of international competency

Table 6 shows that, among the three indexes of international competency, participants gave the highest evaluation to their attitude and value (mean = 3.78), followed by knowledge and understanding (mean = 3.33); skills was given the lowest responses (mean = 2.88).

Correlation between activities and competency

Table 7 shows the correlation between activities and competency. According to the table, among the three dimensions of international competency, knowledge has the closest correlation with curriculum and program ($r = .901$); skills is highly correlated with student/faculty mobility ($r = .886$); and attitude is closest with international collaborative research ($r = .914$).

The research findings

Institutional internationalization is a complex concept which can be examined by many approaches. Employing both activity and competency approach, the research does not only describe what the institutional internationalization status is in China's differentiated system of higher education, but also examine how these activities help improve the students' international competency and thereby enhancing China's higher education quality. It is

Table 6 Descriptive analysis of self-evaluation of international competency

	Mean	SD	Min	Max
Knowledge and understanding	3.33	.69	1.00	5.00
Skills	2.88	.67	1.00	5.00
Attitude and value	3.78	.75	1.00	5.00

Table 7 Correlation between activities and competency

	Student/ faculty mobility	Curriculum and Program	International collaborative research	Services	Knowledge	Skills	Attitude
Student/faculty mobility	1.00						
Curriculum and program	.674***	1.00					
International collaborative research	.542***	.784***	1.00				
Services	.554***	.687***	.784***	1.00			
Knowledge	.847***	.901***	.868***	.658***	1.00		
Skills	.886***	.854***	.749***	.614***	.841***	1.00	
Attitude	.868***	.798***	.914***	.698**	.864***	.879***	1.00

found that (1) China's institutional internationalization status is differentiated by different institutional types, academic disciplines, and academic levels; and (2) international activities is highly contributed to the improvement in students' international competency as there is a significantly positive association between the two.

Firstly, it is found that the institutional internationalization is developing unevenly among the four types of higher education institutions. Generally speaking, "the Project 985" universities have the highest level of institutional internationalization, followed by "the Project 211" universities and non-degree-offering institution. Other degree-offering universities have the lowest level of institutional internationalization. Moreover, the strategies to realize institutional internationalization are differentiated by the types of institutions which set up different institutional missions. Compared with the other three types of institutions, "the Project 985" universities are significantly advantageous in the student/faculty mobility, international curriculum and program, and international research collaboration. Students from "the Project 985" universities have more opportunities to participate in various overseas academic activities, including short-term (<2 weeks) exchange program, long-term (more than 2 weeks) exchange program, overseas summer school, international conferences and 1 to years to study in foreign universities as student visiting scholars. Universities in this type are highly comprehensive universities in China with elite education and innovative research as their two sustained development objectives. Representing China's highest academic and research capacities, these universities are sharp and sensitive to the latest international education trend in the globe. They could mobilize different resources, including national policies in internationalization for quality education. Thus, it is understandable that "the Project 985" universities have the highest internationalization level among the four types of institutions.

The study also finds that "the Project 211" universities has a relatively lower institutional internationalization level than the "the Project 985" universities in terms of international collaborative, because in this type of universities, research capacity building is considered as the first priority in the institutional mission, but the internationalization resources are limited in comparison. Hence, we find that universities in this type tend to achieve their institutional internationalization by developing international curriculum and programs.

The non-degree-offering institutions include junior colleges and polytechnic institutions in this study. Some of them are private and some of them are public. They are mostly specialized institutions with a focused educational field. The specialized feature could make it easier to find a way to realize institutional objectives than the degree-offering universities. Hence, if the university president in such an institution had an explicit awareness and good understanding of internationalization, he could put it into action easily, especially for those high-fee-collecting private institutions. So, such institutions would have a visibly high level of internationalization, even higher than some of the degree-offering universities. In the survey, students from this type of institutions have the highest responses to the "internship abroad" among the four types of institutions. This is in accordance with the institutional mission on improving students' practical ability to meet the needs of increasingly demanding labor market. In the non-degree-offering institutions, to increase student international competence in practical knowledge has been part of the institutional curriculum.

It is not surprising that students consider that the other degree-offering universities have the lowest internationalization level among the four types of institutions. They are the universities administrated by the local municipal government with less policy, financial, and strategic supports on developing institutional internationalization.

Besides, internationalization is also differentiated by academic disciplines. We find that the disciplines of law and art have the lowest internationalization level, whereas economics, management, and education are the three disciplines with the highest internationalization level among the 11 academic disciplines. The development of the disciplines of law and art are deeply rooted in the local cultural, historical, political, and social environment with a demonstration of the local philosophy and ideology. In contrast, those modern disciplines such as economics and management are basically established and developed on the basis of Western theoretical framework.

Furthermore, students at a higher academic level have more opportunities to participate in different internationalization activities even in the Project 985 universities, because currently, many national policies are issued to promote students in master degree programs and PhD degree programs to participate in international academic activities. The most popular one is "the Plan for Higher Level University Building," which is a national plan to support PhD students to study in foreign universities for a year or two as a visiting scholar. This policy is obviously in favor of "the 985 project" universities and helped those universities to increase students international competence and increase institutional education quality.

In conclusion, institutional internationalization is a complex phenomenon with a multilateral interpretation. Based on the college students' perspectives, the study examined institutional internationalization status from three aspects: the universities types, academic disciplines, and student educational levels. We find that there was no fit-in-all mode to interpret institutional internationalization as it is differentiated by institutional types, academic disciplines, and student educational levels. Therefore, based on this research, we suggest that in order to promote institutional internationalization, the university leadership should carefully think about whether national policies and university strategies are in accordance with the ultimate mission of the institution: characteristics of the academic disciplines and student needs. In this case, the "the Project 985" universities in China have benefited a great deal from government policies and financial support of various sources for quality in internationalization. But the number of "the Project 985" universities is small, only around 40 out of more than 4000 institutions in Chinese higher education system. That means only a few elite students can enjoy high quality of education, and

therefore, there is a great demand for the other degree-offering institutions to promote internationalization on their campuses in order to improve quality for the majority of Chinese students.

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