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# Strategies to teach information technology courses to international students as future global professionals: An Australian case

Ergun Gide<sup>a</sup> \*, Mingxuan Wu<sup>a</sup>

<sup>a</sup>*CQUniversity, Sydney 2000, Australia*

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## Abstract

For the last two decades globalisation and information technology particularly Internet applications have been changing not only the way we do communicate and conduct business, but also the education service enormously. The importance and economic value of the international education is already well recognised by Australian government and higher education providers. The purpose of this paper is two folds: first, analyse the educational background and requirements of the international students in the information technology programs; second, provide teaching strategies to satisfy these students' expectations from Australian higher education view points.

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*Keywords:* International education; information technology; teaching strategies; satisfaction.

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## 1. Introduction

Within the last two decades globalisation and information technology (IT) particularly Internet have been changing not only the way we do communicate and conduct business, but also the education service tremendously. Therefore satisfying international students is a very challenging issue for all universities not only in Australia but also in other countries. This is because in today's global information/knowledge age, universities need to educate their students as future global professionals.

The importance and economic value of international education are already well recognised by Australian government and higher education providers. According to Australian Education International (AEI), international education is the third biggest export market, worth US\$13 billion (2007-2008 financial year) and increasing about 20% per year in Australia. It is clear that in this global competitive knowledge economy, the value of international education cannot be underestimated. In order to increase or sustain their market share, education providers must satisfy international students' expectations.

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\* Ergun Gide Tel.: +0061- 9324 5782; fax: +0061-2-9324 5766

E-mail address: [e.gide@syd.cqu.edu.au](mailto:e.gide@syd.cqu.edu.au)

International students going overseas such as Australia for further study generally enrol programs that are similar to their educational backgrounds. However in some cases they enrol programs that are different than their educational backgrounds such as an art or commerce graduate enrolls a post-graduate information technology (IT) course mainly because of higher job availability, better career prospects and other opportunities, and the chosen field of study is generally based on the industry demand in Australia. In both cases, based on many university surveys the international students choose to study at universities because of their reputation and quality of teaching (Arkoudis 2006). Therefore it is very important for international education providers to develop curriculum and teaching strategies to meet those students’ needs in order to satisfy their expectations. Research shows that this is a very challenging issue. Hence, the purpose of this paper is two folds: first, analyse the educational background and requirements of the international students in IT programs; second, provide teaching strategies to satisfy these students’ expectations from Australian view points. This research paper uses qualitative analysis and exploratory methods. This paper addresses this issue and provides key teaching strategies from Australian education perspective.

**2. Research background**

Today more and more students are going overseas especially to English speaking developed countries such as Australia to get quality education in their selected fields for the hope that they will not only achieve their education goals, but also will get the opportunity to stay and work in the country they study or to go other developed countries before they return back to their home country. These include Chinese students at the highest level in Australia. Education is regarded as being above everything else in China while the beliefs that “education, the treasure within” and “education, the beauties within” are deeply rooted into and have become part of China’s tradition and Chinese culture (Wang 2007, p.38).

In 2000, there were over 200,000 Chinese students studying in overseas universities. By 2010 this is expected to grow more than 750,000 and by 2025 to nearly 3million (Ingleson 2008). This is not a surprising figure as China is the fastest developing country in the world (IMF 2009). According to Australian Education International - AEI (August 2009), one of the main sources of international students is Chinese followed by Indian origins, and the total of current higher education (university level) international students are more than 200,000 in Australia. The total number of international students at all levels is over 585,000 in Australia too.

<i>Nationality</i>	<i>YTD September 2008</i>	<i>YTD September 2009</i>	<i>Growth on YTD September 2008</i>	<i>Share of all nationalities</i>
China	119,565	141,001	17.9%	24.1%
India	84,386	112,898	33.8%	19.3%
Republic of Korea	32,457	33,100	2.0%	5.7%
Thailand	19,556	23,653	21.0%	4.0%
Nepal	15,763	22,980	45.8%	3.9%
Other nationalities	220,016	251,554	14.3%	43.0%
<b>All nationalities</b>	<b>491,743</b>	<b>585,186</b>	<b>19.0%</b>	<b>100.0%</b>

Figure 1 Top 5 Nationalities Studying in Australia (source: AEI (2009))

Figure 1 shows that top 5 nationalities contribute 57% of Australia’s international student enrolments. Clearly, the total number of Chinese students enrolled in Australian education industry is more than 140,000. They represent at the top of the list with 24.1% of total international students.

One of the main reasons for Chinese students going overseas to obtain educational qualifications is to improve their employment competitiveness and long term career opportunities. According to statistics from the Ministry of Education (MoE) P.R.China, in 2001, 51% of university leaders administered by MoE, 80% of the academics, and 90% of the Faculty Deans in the universities have had the experience of studying abroad (Wang 2007, p.39). By 2005, more than 94% of all middle-and-above management leaders of the China Academy have had studied overseas (Wang et al. 2006, p.4 cited in Wang 2007, p.40).

### 3. The issues of teaching international students

Non-English background international students (such as Chinese origins) are generally studying first English language then continuing their education either at undergraduate or post-graduate level mainly in information technology, business or engineering followed by other disciplines. Besides, international education is a very competitive field in today's global environment as international students' expectations are very high as it involves a greater economic risk than local students.

There are however, a number of issues or factors affect Chinese students to study overseas. Peng (2008, p.662) investigated the critical factors Chinese students take into account when evaluating the quality of their tertiary education experience including the "top five" variables by importance were identified as (1) quality of library support services; (2) safety of the campus; (3) friendliness and helpfulness of academic staff; (4) communication skills of academic staff; and (5) successful graduation is realistically achievable. Two out of these five critical factors involved in the teaching and communications of academic staff. Other factors involved in library services, safe campus, and graduation. It is clear, therefore, that the academic staff plays a critical role in Chinese students' experience when they study abroad, such as in Australia. This paper therefore first focuses on the main issues involved in teaching including culture, linguistic, and teaching style when teaching those students in Australian universities.

#### 3.1. *Culture issue*

Culture is the first issue. Man (2005, pp.2-5) presented some of the traditional elements of Chinese cultures and their influence on education as he observed them and interpreted them in his practical work including: teaching is a vertical relationship - once a teacher, always a father; learning is listening and following a good example; Chinese students prefer the concrete and the specific; Chinese students are very pragmatic, also in their study behavior; information sharing is scarce, also in the classroom; and the most important things are never said.

#### 3.2. *Linguistic issue*

Linguistic is the second issue. Huang & Rinaldo (2009, p.9) found that the insufficient English proficiency of Chinese students negatively affected both their academic and social activities, even they have scored very high on TOEFL (or a similar one) - a required English test for non-native speakers of English. Although comfortable with their English proficiency while in China, the participants often found it is uncomfortable to express themselves either socially or in class (Huang & Rinaldo 2009, p.9).

#### 3.3. *Teaching style*

Teaching style is another issue. An early research by Thompson (2000, p.111) decisively demonstrate that Chinese students unambiguously regard cases to be important in creative a good master level course, relatively much more important than the pedagogical approaches stereotypically thought to cater to Chinese learning styles, such as lecturing and use of textbooks. Western educational teaching style is welcomed by Chinese students because they are different in teaching manners, and a valuable supplement to what China already has (Man 2005, p.5). According to Currie (2007, p.551), the first critical step is, instead of privileging the Anglo-American pedagogical assumptions in a non-reflexive way, teachers should be sensitive to the incoming assumptions of their cohorts of Chinese students, and the management teacher might move from a mindset of deficit to a different view of Chinese learning approaches. According to Zhu (2006, p.279), this teaching should stress the importance of linking theory and practice effectively.

#### 4. An Australian case

Based on the above discussions, the problem the teacher must solve in this situation is a special case of how to develop communication where difficult barriers exist (Man 2005, p.6). Thereby, this study focuses on teaching international students, especially Chinese and similar cultures in IT courses. The following Australian Case is presented mainly based on the experience and practices of the authors of this paper in particular Professor Gide's teaching strategies that have been used for many years in different universities. The strategies presented in the following sub-sections have been working very well as evidenced by student satisfactions, course success rates, graduate outcomes, and peer reviews. In addition to that Professor Gide has been awarded a number of times for his teaching excellence by CQUniversity, and Australian Learning and Teaching Council in 2009 for the ways in which the teaching strategies presented here have influenced student learning, engagement and the overall student experience, been sustained over time, and been recognized by fellow staff, the institution, and the broader community.

##### 4.1. Overview

The authors of this paper are currently teaching IT related courses mainly postgraduate international students at CQUniversity and have over 30 years combined active teaching experience. The authors believe that teaching is a challenging professional discipline that requires intellectual ability, current knowledge, skills, life-long learning commitment, passion and self-motivation. As university teachers for long period of time, teaching students from various cultural and language backgrounds from over 90 countries, they teach courses from a global perspective with the aim of producing tomorrow's global professional workforce. They believe that teaching information technology to international students from both information technology (IT) and non-IT backgrounds is very exciting, but also very challenging. The challenge becomes even greater as their role involves teaching a predominantly international student cohort, for whom English is a second or third language. Most of their students are from Asia-Pacific countries, as well as some from Eastern European, South American and African countries. International students also face the challenge of new living and learning (western style) environments. To reduce these challenges and provide a positive learning environment, they use effective, inclusive and innovative teaching strategies as explained below in more details. As experienced teachers, the authors contribute effectively to their international students' learning, by equipping them with current professional knowledge and skills for a successful career in the global workforce. The authors' diverse educational backgrounds have also helped them to understand the technological, educational and organisational transformations that have occurred in the 21st century.

##### 4.2. The teaching strategies that work with international IT students

In teaching literature there are many studies about theoretical and pedagogical frameworks, guidelines, strategies and approaches (such as Chickering and Gamson 1987; Hatfield 1995; Biggs 2003; Ryan 2005; Arkoudis 2006; CQUniversity 2008). As highly experienced teachers, the authors have high level of pedagogical skills and have been continuously reading the relevant publications in order to adopt good teaching principles into their own innovative pedagogical practices and improve teaching quality and student satisfaction. The following sections summarise most of their inclusive teaching strategies that have been practiced for many years:

###### 4.2.1. Getting to know international students

According to many research (Ryan 2005; Arkoudis 2006) and based on the authors' long term international teaching experience, one of the most important ways to improve teaching quality of international students is to 'get to know them' very well. For this purpose and to help break the ice, in the first lecture the teachers should introduce themselves by providing information on their background and explaining how they see their role and responsibilities towards them, as their teachers. The teachers then should endeavour to get the same kind of information from each student through a friendly, flexible and professional approach to each of them as the individuals they acknowledge them to be. The aim is to ascertain the level of knowledge they already have about the course they are going to teach them and, perhaps more importantly, to determine the teaching technique required for each particular student: This strategy helps teachers to 'internationalise/globalise the curriculum and teaching content' and as a result build up a

great interest in the subject-matter for international students (Gide 2009). Therefore, teachers should prepare the course content globally, so international students could be prepared to work in any country after they graduate. This strategy also motivates students to be in the class not only physically but also mentally and encourages them to be more interactive in the class with their teachers and other students for class participation and discussion.

#### *4.2.2. Paying great attention to the special needs of international students*

The authors of this paper have developed their own innovative teaching approaches that are backed by theoretical frameworks and pedagogical principles to teach international students effectively. This effective teaching philosophy is completely student-centric. Teachers can inspire and motivate students by using a combination of innovative teaching practices such as building their self-esteem and confidence by empowering students who are from Eastern cultures, i.e. they are shy and tend not to talk/ask questions or participate in class discussions. Recognising that every student has a different learning cycle, teachers should use student-centred teaching strategies where they should attempt to put themselves in the student's position and consider what they can get from the particular course, what could be their expectations or how they can achieve the maximum benefit for themselves and their academic and career aspirations (Gide 2009). This strategy can enable teachers to recognise those students who may require special attention and one-on-one interaction, as well as acknowledge those students who may perform better with more independence.

#### *4.2.3. Improving international students' critical thinking and active learning skills*

In the first few weeks of each term it is important to spend considerable time to encourage international students to improve their 'critical thinking', 'active and deep learning' and 'problem solving' skills as all these important elements generally not well known by Eastern style educated students (Gide 2009). It is also important to challenge international students to think, not just to memorise the subject matter. As knowledge is 'dynamic', teachers should always encourage students to adopt a 'life-long learning' philosophy. The authors of this paper acknowledge that living in a very dynamic technological environment requires teachers especially in the IT field to update their knowledge constantly in order to be effective in the classroom. The aim is to show students how to 'think critically' about different issues they are facing in their daily life and solve them in innovative ways. Teachers should explain the concepts as simply as possible in order to make them easy to understand; provide opportunities for small group discussions and presentations; engage students with team-based Web project developments and real-world authentic case studies to encourage students' active learning, critical thinking, analytical and problem solving skills; and sharing their professional real-life experiences, to build a connection with their teaching context (Gide 2009).

#### *4.2.4. Building international students' self-esteem and confidence*

Teachers should seek to build international students' self-esteem and confidence by helping them to shift their focus from 'inward looking' values to larger 'global visions,' as we are living in a global environment and digital age (Gide 2009). For this, teachers should build bridges of communication between themselves and each individual international student. For this purpose, teachers should treat their students as a 'unique person', encourage individual excellence in their students and increase their self-esteem through the development of 'can-do' attitudes. The authors of this paper give prompt, constructive and detailed written and verbal feedback for students' assessments and projects and timely responses for students' questions in order to build confidence and skills on international students. The authors' experience show that higher expectation leads to higher passion for studying IT courses and international students' overall performance of their program if properly guided. For this, teachers should encourage all their international students to do their best to reach their highest potential.

#### *4.2.5. Establishing effective teacher-student contact to improve communication skills*

Effective teacher-student contact is a very important factor in the student learning journey (Chickering and Gamson 1987). Teachers should have an 'open-door policy' to allow students to visit their offices whenever they want. Teachers should also strongly encourage their international students to communicate with them by e-mail or telephone calls as this will improve international students' written and verbal communication skills and therefore help them achieve better results during presentation assessments and written examinations. A good teacher is not a nine-to-five teacher, but available to his/her students at all times to provide feedback, support and guidance (Gide 2009).

#### 4.2.6. *Playing multiple teaching roles*

In their interaction with students, teachers should adopt different roles dependent on the needs of their students. Sometimes this role may be as a teacher teaching the theoretical parts of the subject-matter in an interactive way. Sometimes the teacher may need to take on the role of a mentor, supervisor, mediator, CIO or a colleague. It is a fact that playing different roles, based on the aim of the course curriculum and the needs of the students is what makes a teacher's teaching style outstanding in influencing, motivating and inspiring students to learn and achieve their own personal goals (Gide 2009). However the priority should not be the teacher's own achievements as a teacher, but the achievements of those they are teaching.

#### 4.2.7. *Using active listening skills*

Innovative teachers use combination of teaching techniques including listening actively to students and understanding what and how they want and need (Gide 2009). Teachers should provide all teaching materials (lecture and tutorial) in advance online, build up self-esteem by explaining concepts in plain English, allow time for them to not only listen to them, but also to think about the concept they explain, give real life industry examples from diverse countries to attract their interest, provide case studies in small cohort groups and encourage them to talk by valuing their contribution during lecture, and tutorial classes.

#### 4.2.8. *Engaging international students with their course*

As part of inclusive teaching and learning processes, from day one teachers should communicate high expectations and emphasise clear focus on set assessment tasks and the importance of planning, organisation and time management, and attempt to ensure that every international student comprehends the important meanings and relevance of the work, prior to submission (Gide 2009). It is also extremely important for teachers to communicate the plagiarism issue with their international students in details (Arkoudis 2006). The authors of this paper believe that learning is not solely dependent on the understanding or acquisition of theoretical knowledge, but must, if it is to be of any practical use, relate to real life applications in this rapidly advancing digital age. The authors found that giving project and case study based tasks to international students encourages their active learning, and as a result students engage more with their course including group work, class presentations and discussions including peer reviews. It is also important to use real company examples from many countries that represent most of the students and invite guest speakers including some successful graduates from different industries. These activities will not only help students to integrate theory with practice but also motivate, inspire and help them build self-esteems of 'I also can do' attitudes. When students are effectively motivated they tend to achieve greater than their expectations (Gide 2009).

#### 4.2.9. *Motivating international students by using interactive teaching techniques*

Aside from their personal interaction with their students, the authors of this paper provide motivation and inspiration through the use of interactive teaching techniques supported by ICT tools including DVDs, CDs, Web-based video presentations and case studies, slide shows, computer-based hands on training, company web sites, and Web 2.0 applications (social networking sites, online group discussions and collaboration, RSS, Web services, blogs, etc.). The authors of this paper also believe that students will often go far beyond course requirements when properly motivated - and more often than not, such motivation is driven, and taken on board, by a student's own personal experience. Based on many research (Biggs 2003; Ryan 2005; Arkoudis 2006) and Professor Gide's long term international teaching experience, it has been found that discovering and acting upon what motivates a student requires close mentoring, supervision, and advising and working with students at a personal and respectful level.

#### 4.2.10. *Being active in the classroom with up-to-date knowledge as a teacher*

A good teaching is not about standing in front of a classroom full of students, but more about being in the classroom with them (Gide 2009). This means being very active in the class and engaging students by providing opportunities, making eye contact, showing great interest in their class participation and briefly interacting with students in every manner for enhancing their learning journey. So, a good teacher is the one who really interacts with international students and understands them. A good teacher is the one who 'opens students' eyes and helps them to think, 'outside the square.' Teachers need to improve their knowledge in order to be up-to-date and

incorporate this personal development into the classroom in an interactive way. In another words, teachers should endeavor to transform and improve their own knowledge in order to be more effective and innovative.

#### 4.3. *The evidence to justify the effectiveness of teaching strategies presented here*

The above mentioned teaching strategies have been used for a long period of time by the authors of this paper. These strategies not only have helped international students to understand their courses better but also helped them to achieve greater than their expectations. This is justifiable as Professor Gide's outstanding contribution to international student learning has been recognised a number of times officially: He was awarded the "Gold Medal Mort Award for Teaching Excellence" at the Sydney Campus in 2006. He was also awarded the "Award for Teaching Excellence" for Australian International Campuses in 2008. Recently, he was awarded the Vice-Chancellor's "Teacher of the Year" Award in 2008. More recently he was also awarded Australian Learning and Teaching Council's Awards for Teaching Excellence for Outstanding Contribution's to Student Learning, 2009.

## 5. Conclusions

This paper discusses the main issues of teaching information technology courses to international students in higher education environment in Australian context. The paper also provides effective and proven teaching strategies mainly from Professor Gide's practical experience and observation point of views rather than a theoretical one. It provides suggestions and recommendations of inclusive teaching strategies to satisfy highly demanding international students' expectations. The authors highlight that teacher-student timely communication, understanding students' needs, motivation, inspiration, building self-esteem and confidence, engaging students with the course content, providing real-life industry examples, encouraging students for being an active member of the class all the time are some of the most important factors teachers need to adopt in their teaching of international students in information technology courses in Australia.

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