

# International Students and Cooperative Industry Projects in ICT Education: A Study of Impact Factors

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## Abstract

This paper elaborates on the outcome of initial stages of a study on factors that can impact (positively or negatively) upon success of international students' (in this case Chinese) studies overseas - with a focus on projects that require considerable self initiation, self discipline and self learning. Cooperative industry projects were chosen to conduct this study. Phase one involved observing the performance of 16 graduating students and collecting data throughout two semesters. The outcome of this phase (even though not yet final) indicates that despite popular belief (that language and cultural differences are significant barriers to Chinese students' success), willingness, interest in topic and commitment play a crucial role in success of Chinese students in completing cooperative industry projects.

*Keywords:* ICT Education, International Students, Self-initiation, Self Learning, Cooperative Industry Projects.

## 1 Introduction

International students, in particular those from Asian countries, contribute significantly (billions of dollars) to the economy of countries they choose for studying (e.g. US, UK, Canada, Australia and New Zealand – to name but a few). Some countries consider education and training of overseas students (Asian students in particular) to be one of their largest export components – for instance, the U.S. Department of Commerce recognizes education and training as the fifth largest export of the United States and formally classifies it as an industry. Similarly, in New Zealand, the export education sector is identified as an industry (International education update, 2008; New Zealand's Export Education, 2008 and Stocktake of New Zealand, 2008).

Considerable effort is directed towards strategic planning for export education (Cummings, 1984; Export Education, 2008; Shenoy, 2006 and Ward, 2007).

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While the number of international students studying at higher education institutions in western countries has steadily increased over the years, policymakers, market analysts and advocates have been concerned that unless there are improvements in supporting Asian (international) students achieving success, the competitiveness factor for hosting countries will decline and their share of the lucrative international higher education industry will be compromised.

Students' success in studies can be considered as one of the factors that determine the flow of international Asian students to a particular host country. Students' parents, who make considerable investment in their children's education, view students' success as a key factor in continuing their investment and in supporting their children's education in a particular host country (Scott and Meid, 2008; Selvarajah, 2006).

While some Asian students perform at the highest level when studying abroad, many struggle to meet the basic requirements of completing their qualifications. There seem to be specific difficulties in particular where independent learning, investigative studies and analysis & decision making situations are involved. Many higher educational (tertiary) institutions have made an attempt to identify and address key barriers to Asian students' learning – in order to develop and/or protect the export education industry.

In early 2007, a study was initiated to identify impact factors (factors that impact on success or failure) in specific problem areas mentioned above - independent learning, self directed learning, investigative studies, and decision making about options.

This paper is concerned with the outcome of phase I (observation of a selected group of Chinese students). More specifically, it discusses the factors that have been identified as those that potentially impact on success (or failure) of students within a particular course of study that requires a high degree of self initiation and independent investigative learning – in this case *cooperative industry projects*.

## 2 Research Question and Methodology

The research questions for this study are as follows:

- a) What are the most influential factors impacting upon international Asian students

achieving success in self-directed learning and investigative and creative projects?

- b) Why some international Asian students do not achieve acceptable results when completing their cooperative industry projects?

The planned methodology for this study is as follows:

- a) Choose a course where a high level of self learning, investigation, analysis, decision making and independent learning is required. For the purpose of this study, the course ‘*Cooperative Industry Project*’ offered at CPIT for graduating Bachelor of ICT and Graduate Diploma in ICT and/or eCommerce was selected.
- b) Study (by observation) a randomly selected group of students during the development and completion of their projects over a period of 12 months (two semesters) – in order to identify key factors contributing towards success and failure.
- c) Validate and fine-tune identified factors by interviewing a focus group of students who have completed this particular course – as a test of criteria for investigation identified in previous phase.
- d) Conduct a combination of interviews and surveys of a larger sample of students to assess factors that play a key role in success/failure of students and identify the ways in which improvements can be made.

As mentioned in ‘b’ above, a group of 16 students were studied (by observation) and their performances were evaluated. The outcome of the study of the focus group of 16 students is outlined in this paper. Parts ‘c’ and ‘d’ are not yet finalized.

### 3 Criteria for Evaluations

For the purpose of this study we evaluated *success* by assessing the following parameters:

- Candidate achieved significant learning
- The grade for the project is at least B+
- Candidate completed the task(s) as required

- Candidate demonstrates that he/she is able to apply learning to industry and/or professional work environment
- Supervisors’ confidence in candidate’s ability to complete allocated tasks, to consider ethics, to be reliable in delivery of outcomes, have a ‘can-do’ attitude, to be able to self-learn and produce professional documents.

Each parameter was rated from 0 (weak) to 5 (outstanding).

Additionally, we considered a wide range of parameters which could impact the success of candidate’s in completing projects and later placed them into a number of categories – as follows:

- Willingness – accepting to do the project that is allocated to candidate and willing to start and complete the tasks.
- Commitment – making every effort to achieve success
- Competence – possessing required skills and attributes to complete the task.
- Competitiveness – candidate demonstrates that he/she wants to be the best performer.
- Learning and/or teaching style - compatible with self investigation, self learning that is required for co-operative industry projects.
- Project candidate’s expectation of support – level of independence and minimal need for support.
- Candidates command of English language
- Candidate demonstrates interest and enthusiasm in project topic.
- Candidate is willing to and capable of communicating issues freely – which can relate to command of English and culture.
- Candidate’s attributes and skills matched to make him/her a suitable worker within new environment.
- Candidate’s drive and motivation to be/become the best.

Candidates were rated in relation to these parameters from 0 (weak, no evidence of achievements) to 5 (outstanding performance).

The main focus of the study was to assess which factors are likely to correlate strongly and positively with those projects that are considered successful. We defined success to be a score of at least 15 out of possible 25 points.

#### 4 Analysis of Outcome

After the completion of the study (observing 16 project candidates over a period of 12 months) and when rating was finalized, projects were placed in two groups – successful and unsuccessful projects. As mentioned earlier, we defined ‘success’ as scoring an average of 3 (out of 5) in each category of evaluation criteria – that is to say a score of at least 15 out of 25.

Next, for each group, we worked out the average rating for any parameter that we had considered as impact factors for this particular study – as outlined in section 3.

The average score for various categories of impact factors for successful projects is displayed in Figure 1. There seems to be three different groups of impact factors. The first group that shows strong correlation with successful projects comprises *willingness* (4.5 out of 5), *interest in topic* (4.44) and *commitment* (4.28). In other words, Chinese students who achieved success in their cooperative industry projects, scored high when they were evaluated against those impact factors mentioned above.

The next group of impact factors included *competence* (3.83), *matching skills and attributes* (3.72), *drive & motivation* (3.39) and *willingness & ability to communicate* (3.44).

Finally, the last group comprised *competitiveness* (3.11), *command of English language* (3.17), *independence & minimal need for support* (3.17) and finally *learning style* (3.33).

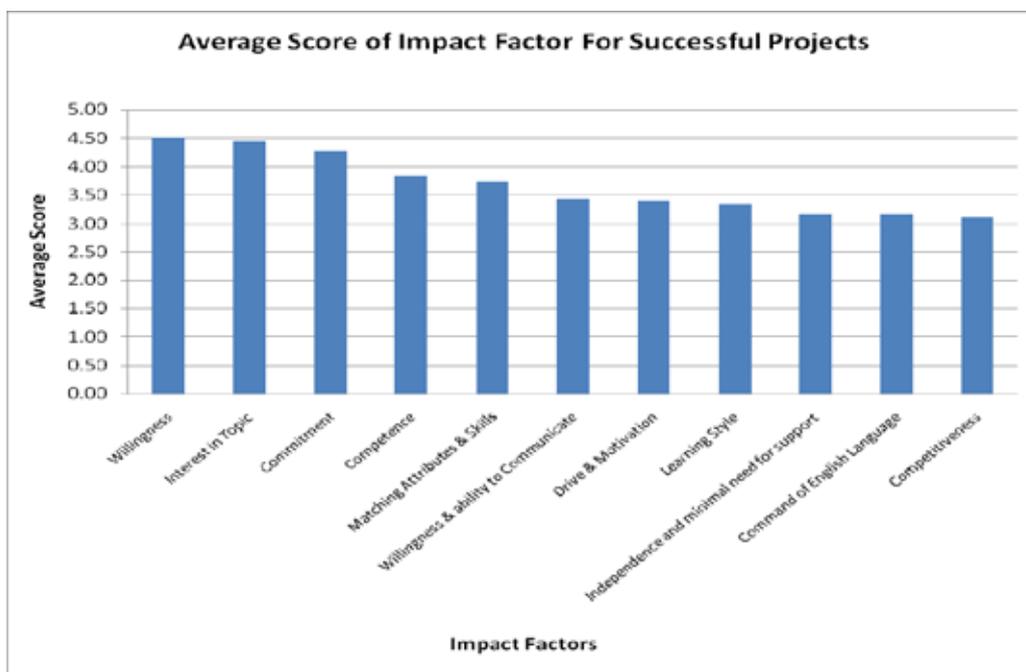


Figure 1. Ratings for Impact Factors – Successful Projects

Even though this is a preliminary study and the results cannot yet be generalised, it appears that despite potential language, social and cultural difficulties, *willing, interested in the field of project and committed* Chinese candidates performed well and achieved considerable success. However, as you can see, the average score for impact factors for this group of students was in all cases above 3. Next, we look at average score for impact factors for unsuccessful project candidates – as displayed in Figure 2.

In order to establish an impression of what caused their lack of success, we sorted the average score for

impact factors in ascending order. We observed that the lowest average scores for impact factors (for unsuccessful candidates) belonged to the group that comprised *matching attributes & skills* (0.93 out of 5), *competence* (1) and *commitment* (1.14). That is to say, unsuccessful candidates demonstrated weakness in this group of impact factors. This outcome is consistent with what we observed in successful candidates.

The second group of impact factors (where average scores of unsuccessful candidates were slightly higher) included *learning style* (1.21), *drive &*

motivation (1.53), competitiveness (1.57) and independence & minimal need for support (1.71). Finally the third group (which showed the lowest correlation with being unsuccessful) was made of

command of English language (1.93), willingness & ability to communicate (1.93), interest in topic (2.14) and finally willingness (2.43).

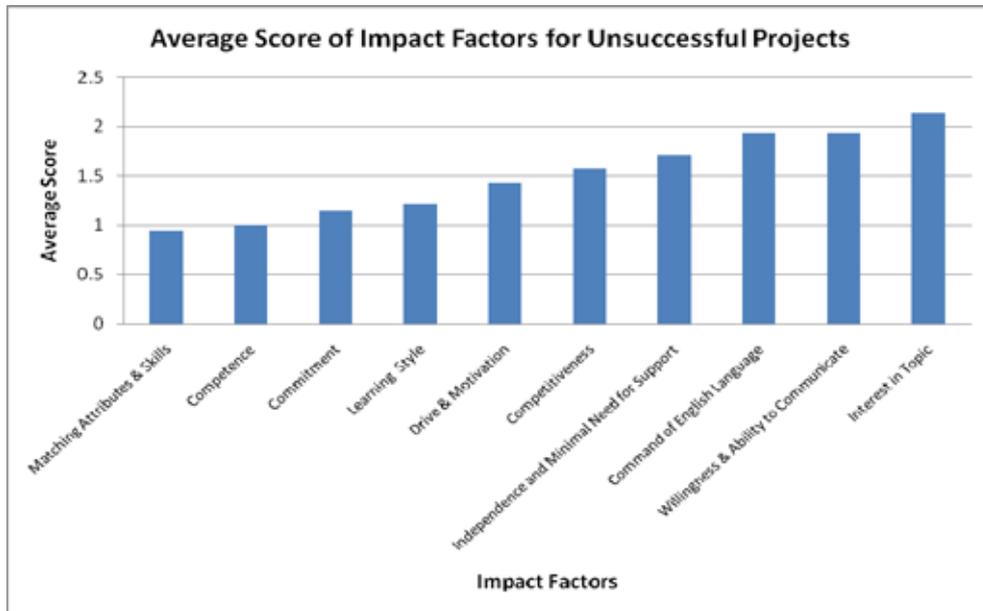


Figure 2. Ratings for Impact Factors – Unsuccessful Projects

Even though the outcome of this study is not yet final, overall, it appears that Chinese students who show willingness, commitment and possess the relevant skills and attributes are more likely to achieve success – despite apparent disadvantages such as language difficulties and different style of learning. Similarly, those who were unsuccessful lacked skills, competence and commitment.

## 5 Conclusions

Students' success in studies is often one of the key factors that determine the flow of international Asian (Chinese in particular) students to host countries. Some Asian students perform well when studying overseas and others struggle to meet the basic requirements of completing their qualifications. It is believed that there are specific difficulties in particular where independent learning, investigative studies, analysis & decision making scenarios are involved. Many higher educational (tertiary) institutions are keen to identify and address key barriers to Asian students' learning.

This paper examined impact factors that are likely to influence (positively or negatively) success of Asian students studying overseas. The focus was on investigating difficulties in independent learning. The context was cooperative industry based projects (where a high level of self initiation and self directed learning is involved). A group of 16 graduating students were selected and observed over a period of

12 months (two semesters). The success of their projects was measured and they were rated based on a group of chosen impact factors.

The results of this study are not yet finalized. However, the outcome of the study on this group indicates that despite popular belief (that language and cultural issues are barriers to success of international students); students with high level of commitment, willingness to achieve success and high level of interest in the topic are highly likely to achieve success. On the other hand, those in our sample who were not successful clearly demonstrated lack of relevant skills, competence and commitment.

In order to validate the outcome of this pilot study we plan to

- a) Survey international students to validate and fine-tune our considered impact factors.
- b) Further studies of larger groups of students to achieve a higher degree of statistical significance.

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