

UKCISA GRANTS SCHEME FOR INTERNATIONAL EDUCATION

Enriching international students understanding of critical thinking and problem-solving skills through gamification

University of Greenwich

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Aims

The aim of the pilot project was to produce an eLearning resource that could help international students to understand and improve the skills required to study in a UK higher education (HE) context. The project targeted the development of critical thinking and problem-solving skills using an interactive, gamified approach. We aimed to specifically address the linguistic and cultural factors that can lead to social isolation and inadequate learning strategies. (Weiley, Sommers and Bryce, 2008)

The pilot stage involved the development, adaptation and testing of resources with direct entry international undergraduates.

Project outcomes

A workshop has been developed which allows international students to hold a facilitated discussion about the challenges of acclimatisation to higher education study in the UK. Two prototype games have been developed to support the workshops that allow students to explore what is meant by critical thinking and problem-solving in a UK HE context, as well as the cultural factors that can lead to misunderstandings.

Continuous Professional Development (CPD) workshops will be offered to staff from the autumn term 2018 to allow lecturers to examine the needs of Chinese students who are adapting to UK HE, and devise effective teaching and learning strategies to support them.

Background to University of Greenwich

The University of Greenwich has an international community of students from 176 countries. It also has an extensive Transnational Education (TNE) network with 49 partner institutions in 21 countries delivering University of Greenwich degree programmes. In China, the University has 12 TNE partners who send their students to complete their studies in the UK.

Students coming to the UK typically have achieved an International English Language Testing System (IELTS) level of 6.0, with 5.5 being the absolute minimum in each component.

The project journey

The focus, aims, research and development of the project evolved throughout the process.

General or specific?

The project team had a choice between developing general resources for all international students or focussing on the distinctive needs of students from a specific country. On the one hand, the University

of Greenwich attracts students from all over the world and so a generalised resource would be useful. On the other hand, the University of Greenwich has a particularly strong relationship with Chinese HE institutions and attracts a large number of direct entry students who come to Greenwich to complete their studies. Anecdotal evidence from lecturers suggested that there were particular challenges that these students face that are as much cultural as linguistic.

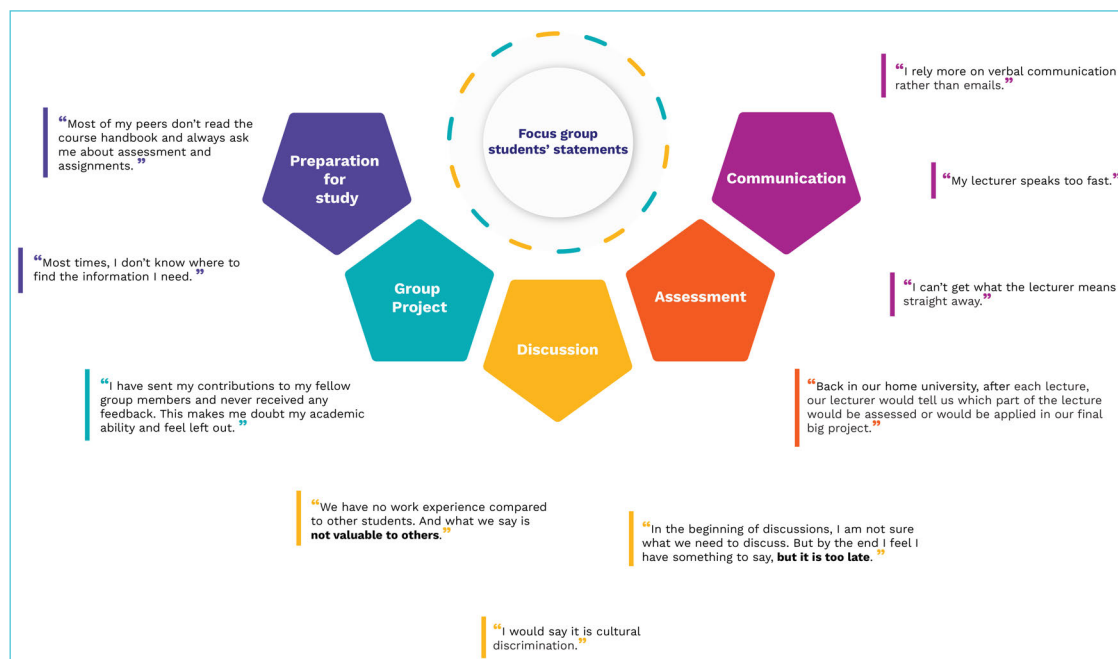
The project was fortunate to have Dr Yang as a member of the team. As a Chinese national, Dr Yang was able to provide an insight, based on her own experience, of the sort of challenges that Chinese students might face, trying to adapt to the requirements of UK HE. The decision was taken, therefore, to concentrate on the needs of Chinese students for the pilot stage and use the lessons learned to develop a more general application after proving the concept.

Amending the project plan.

The initial idea was to develop stand-alone eLearning games that TNE students could use to prepare for attendance in the UK. The project team sought the advice of lecturers within the University's department of computing with expertise in games development. For the project to produce meaningful results that could demonstrate how effective the games were in the development of understanding of critical thinking and problem-solving skills, it was necessary to think about analytics at an early stage. The project was advised that the level of detail being sought was too ambitious for a pilot project and would be too expensive and time-consuming to implement. The project team were advised to develop proof of concept resources and then seek additional funding for further development, if required. This advice was accepted and influenced the decision to develop games that could work in a focus group setting where it would be possible to gather qualitative and quantitative data via discussion and questionnaires.

Focus groups

A focus group was held in November 2017 with nine Chinese students who had been recruited via the University of Greenwich's Students' Union Chinese Society. Each attendee was rewarded with a £10 coffee voucher. All of the students had joined the University in September and were asked to comment on how the reality of UK HE compared with their previous experiences and prior expectations. Perhaps, because the students were still finding their feet and had yet to undertake a major assignment, most of the observations focused on the differences in educational culture and language issues rather than the specific issues of critical thinking or problem-solving, for example:



"Most times, I don't know where to find the information I need."

"I rely more on verbal communication rather than email."

"My lecturer speaks too fast."

A decision was taken to stage another focus group meeting after the students had acquired experience of a formal assessment and demonstrate some game ideas for possible development. The second focus group was attended by five of the students who attended the first meeting and one new student. At this meeting, the students made some interesting observations about the differences in approach to group work and assignments:

"Back in our home university, after each lecture, our lecturer would tell us which part of the lecture would be assessed or would be applied in our final project."

"Most of my (Chinese) peers don't read the course handbook and always ask me about assessment and assignments."

Students also contrasted the difference between themselves and the home students:

"We have no work experience compared to other students. And what we say is not valuable to others."

"I have sent my contributions to my fellow group members and never received any feedback. This makes me doubt my academic ability and feel left out."

"I would say it is cultural discrimination."

A number of quiz games that require critical thinking and problem-solving skills were demonstrated to the students who selected the best two for further development.

The students enthusiastically expressed their opinion that the focus groups had been really useful. The experience had provided an opportunity for them to consider how cultural differences might be having a specific effect on their learning. The students had discussed these issues informally amongst themselves but they found it beneficial to have a guided discussion in a more focused environment. This strongly influenced the final decision to design a workshop with the games initially used as resources to promote discussion and reduce social isolation. After further refinement they could be deployed as originally intended as stand-alone web resources to help TNE students prepare from afar.

An hour-long workshop was held at the start of the summer term, facilitated by Dr Yang. The outputs from this workshop are currently being reviewed with the intention of staging regular workshops aimed at TNE students in the autumn term of 2018.

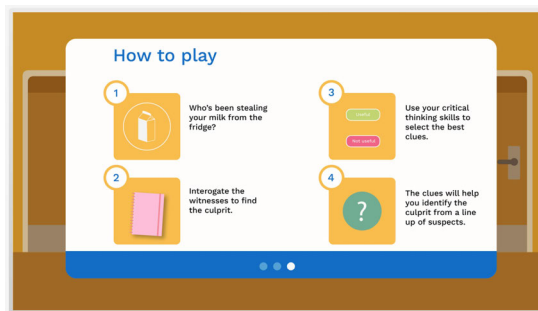
The games

The games that were developed are adaptations of games that we had created previously for another resource, the Independent Learners' Toolkit. This toolkit is designed to ease the transition of UK A Level and further education students to UK HE.

The Toolkit was demonstrated to the focus group students who then selected the activities that were most interesting to them. Those games would form the basis for redevelopment. PowerPoint was used during the focus group stages but the final games were developed using Articulate Storyline. The games can be exported as a Sharable Content Object Reference Model (SCORM) to be hosted within a Virtual Learning Environment (VLE) and allows us to track student activity and performance.

The Milk Snatcher

The students were particularly enthusiastic about The Milk Snatcher, a game that explored the challenges of living in communal accommodation in a fun and light-hearted way. Students have to use their critical thinking skills to analyse the witness statements of students living in an apartment in a hall of residence and deduce the identity of the person who is stealing milk from the communal fridge.



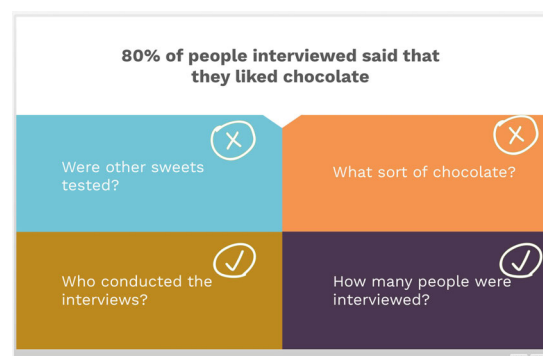
The Milk Snatcher game was chosen for redevelopment as it was thought that this could be a good icebreaker activity for the workshop. It introduces the idea of critical thinking as a skill that most people have and use on a daily basis before discussing what it means in an academic context.

The quiz

The second game is a quiz. Students are provided with a statement and four questions. The students have to choose the two questions that are most useful to evaluate the statement. See Figure 2.

During the workshop, we started with easier questions that related to day-to-day life and gradually moved towards more academic questions that students might encounter while attempting a written assessment. The students were very engaged with this activity which provoked enthusiastic discussion about why some questions were more useful than others.

Fig 2: List of themes developed in the toolkit



Further development

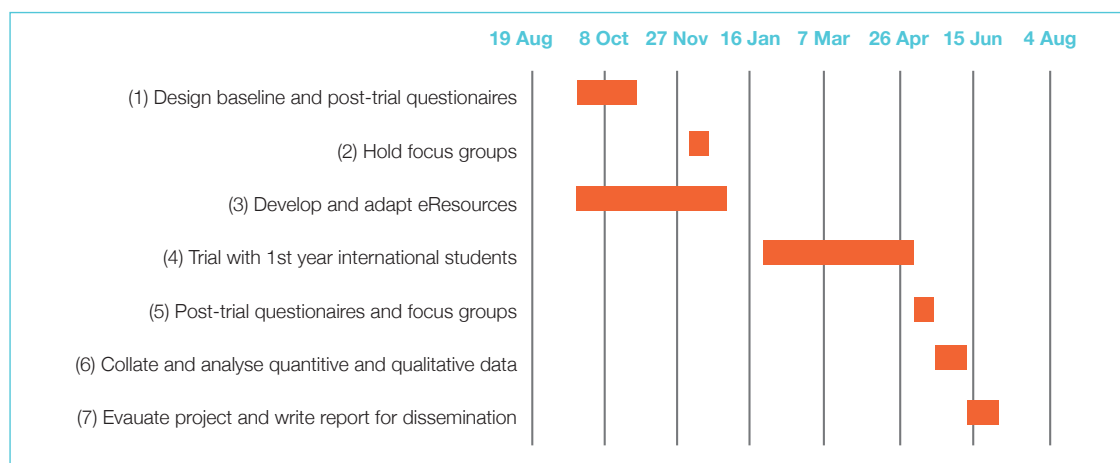
The project is continuing to develop both games, although in the short term, efforts will focus on development of the quiz game which involves expanding the question bank. It is also planned to create different levels of game play where at the highest levels, the statements will be aligned with the type of essay questions commonly found in UK HE. It is envisaged that this could become an online resource that we share with our TNE partners to help students prepare for transition in advance.

The Milk Snatcher game in its current form is quite easy to solve, so it is ideal for an ice breaker but needs to become more challenging. One idea is for the game to be just one level in a suite of detective games set in a university campus where students have to use their critical thinking and problem-solving skills to solve the mystery.

Challenges

The main challenge faced by the project team was attracting and maintaining the interest of the students. Of the original nine who took part, only two attended the fully developed workshop. Although the workshop and the games were well-received, the project team cannot be confident that the intended workshops will exactly meet the needs of new TNE students.

Timescale:



Project sustainability

The games have been developed with a small set of quiz questions. The project is expected to develop the games further by continuing with the creation of a larger multi-level question bank. These games will be used in regular workshops to support the Chinese students.

Having established a workable base, the next stage of the project will also include analysis of the students' gaming performance data to assess the impact (if any) on students' critical thinking and problem-solving skills.

A workshop for academics working with TNE students has been added to the roster of CPD events and will be facilitated by Dr Yang.

Recommendations for other institutions

The games are proving to be useful resources but the most effective aspect of the project has been the development of workshops that allowed students to discuss their anxieties about study in the UK in a structured and supportive environment. The project team would recommend that institutions provide spaces where TNE students are encouraged to network and support each other.

References

Weiley, S., Sommers, J. and Bryce, H., 2008. Reducing social isolation and loneliness through technological communication, Conference Proceedings of the 19th ISANA International Education Conference, 2-5 December 2008, ISANA International Education Association, Available at: <http://isana.proceedings.com.au/docs/2008/paper_Weiley.pdf> [Accessed 1 July 2018].

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The UK Council for International Student Affairs is the UK's national advisory body serving the interests of international students and those who work with them.

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