



## Project Proposal for Small-Scale Blended Learning Funded Projects

(under the Top Sliced TDG Project hosted by TLC “Advancing Blended Learning @ Lingnan to a New Stage”)

(Updated in December 2020)

Key Criteria:	
Intended learning outcomes clearly articulated	Blended learning project deliverables clearly outlined
A robust project implementation approach	Impact on Student Learning
Innovative approach to blended learning	Partnering University

### Basic Information:

<b>Project Title:</b>	Designing social learning games to boost blended learning into liberal arts education		
<b>Role / Name:</b>	<b>Post:</b>	<b>Faculty/ Department/ Centre/ Unit:</b>	<b>Email:</b>
<b>Principal Project Supervisor (PPS) / Paulina Wong</b>	Assistant Professor	Science Unit	paulinawong@ln.edu.hk
<b>Co-Supervisor/ Gary Wong</b>	Assistant Professor of Teaching	Department of Economics	wongwc@LN.edu.hk
<b>Team Member and / or Overseas Collaborator Ray Wang</b>	Lecturer	Thammasat University	rtcdub87@gmail.com
<b>Team Member and / or Overseas Collaborator Timothy Teo</b>	Professor	School of Education, Murdoch University	timothy.teo@murdoch.edu.au
<i>For TLC use only:</i>			
<b>Project Code:</b>		<b>Account Code:</b>	
<b>TLC Staff Liaison:</b>		<b>Funding Approved:</b>	

## 1 Project Summary

The project summary should clearly and succinctly describe the project and be suitable for use **on the TLC website**. It is vital that this summary includes references to the intended impact of the project on the quality of student learning / adoption of Blended Learning. (*Approx. 10-15 lines / 300 words*)

The use of games in education has been proven to increase competencies, and is essential in learning contexts like liberal arts education. However there is an extant gap in designing gamification with

recent advances in experiential learning and social learning in a digital learning environment. This study aims to incorporate experiential learning into gamification within a liberal arts setting, through social learning to encourage co-creation and peer to peer engagement. The experiential gamification model will be implemented in a semester across two course modules in the field of sustainability and economics. Students will conduct challenge activities designed with achievement theory to drive self-regulation on a private purpose-built social mobile learning application over a semester. At the end of the semester, data collection will involve social engagement statistics and learning output as well as surveys for participant feedback. The study will offer empirical evidence on how students can benefit from a motivating well-paced game that suits different learning styles with up to date digital social engagements.

<p><b>Amount of funding requested (Maximum of HK\$50,000):</b></p> <p>\$ <span style="background-color: black; color: black;">██████████</span></p>	<p><b>Amount of Faculty/ Department/ Centre/ Unit contribution:</b></p> <p>\$ <span style="background-color: black; color: black;">██████████</span></p> <p><i>(NOTE: Faculty/ Department/ Centre/ Unit funding is <u>not</u> a requirement, please indicate if funding has been provided from any other source or similar project)</i></p>
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## 2 Project in context

### (i) Project Objectives

Whilst empirical evidence suggests that serious games can lead to flow and motivation, a new version that uses experiential and social learning e-pedagogies might lead to delivering meta-cognitive learning better suited for 21st century education. Examples of such a method of gamification being implemented however is limited, and recent examples of gamification has shown that the knowledge transfer during gamification requires deeper planning around the learning process. This extant gap in knowledge and implementation has motivated this research, where a blend of experiential social learning will be put into a role-play simulation game for economics and sustainability education in a university in Hong Kong.

Based on these aims, the purpose of this project is to:

- Conduct challenge activities designed with achievement theory to drive self-regulation on a private purpose-built social mobile learning application over a semester.
- Evaluate learning performance of social game-based learning through mixed method approach. Data collection will involve social engagement stats (most watched posts, most likes, most comments), learning output (from rubrics) as well as focus group / surveys for participant feedback using authentic learning framework to identify factors [13].

The use of gamification in education has had success, but opportunities remain on creating a model that works over a longer period - building atop learning knowledge transfer. This study will be one of the few studies that combines experiential learning into social learning, inbuilt into a simulation-roleplay game, to help us understand how students can benefit from a motivating well-paced game that suits different learning styles with up-to-date digital social engagements.

*(What are your objectives in initiating this project? Why is it needed and how does it relate to the institutional, faculty or departmental strategic goals in relation to teaching and learning? Why and how would preparing a subject (or part of a subject) in the blended learning mode enhance students' understanding?)*

### (ii) Student Impact

Programme/ course code	Programme/ course title	No. of credits	Mode of study	Student intake quota per term
ECO3001	Hong Kong Housing Market	3	Cluster course	Year 1 - 4; max 35 students
CLD9025	Climate Change and Human Health	3	Cluster course	Year 1 - 4; max 35 students

**Partnering University / External Parties:**

**Thammasat University, Thailand**

Paulina Wong and Ray Wang (Thammasat University) will have joint discussions (est. monthly check ins and discussions) on the research framework and implementation of social learning and gamification into their courses. Ray is a lecturer in the Media and Journalism faculty teaching education for sustainability. Ray is also working on an ongoing study to identify key themes for using social learning with Soqql. Three key themes on self-efficacy, collective efficacy and inter-personal observations have been identified. An internal research grant has been approved by the dean and is in review at the final stages.

**School of Education, Murdoch University, Australia**

Professor Teo will support the project by sharing expertise on check, evaluate and give advice on the project. Based on his profile: Before coming to Murdoch University, Professor Teo was Distinguished Professor at the University of Macau (China SAR), Honorary Professor at the University of Auckland (New Zealand) and International Collaborative Partner [Visiting Professor] (Universiti Tengku Abdul Rahman, Malaysia). His research interests are inter-disciplinary and include both substantive and methodological areas, organized into three fields. These are *ICT in Education* (Technology acceptance and adoption; Internet Addiction; E-learning), *Educational Psychology* (Self-efficacy-teachers and students; Beliefs about teaching and learning; Meta-cognition), *Music Education* (Psychological processes of music teaching and learning), and *Quantitative Methods* (Psychometrics; Instrument development and validation; Cross-cultural measurement; Measurement invariance; Issues in survey development and administration; Structural equation modeling; Multilevel modeling; Latent growth modeling, Meta-analysis).

*Please insert rows in the table for additional information. Try to avoid broad statements like 'ALL Courses in Lingnan will benefit'. At least one specific Course must be indicated. Ideally the project will involve a collaboration with a partner University.*

**(iii) Project in Context**

*This section should clearly describe the context of the project. What is the issue/problem and why is it of pedagogical significance to implement a Blended Learning solution? In answering this question, references should be made to educational and discipline-based literature or benchmarks in order to explain and justify how the proposed initiative will enhance student learning. (approx. 10 – 20 lines / 500 words)*

The use of games in education has been studied extensively in the past. Whilst empirical evidence suggests that games can lead to flow [1] and motivation [2], more recent studies [3][4] suggest that more specific game planning is needed to create a learning environment that encourages knowledge transfer. Specifically, a model that matches the pace and the mode of learning like experiential learning was proposed earlier [5], but examples of it being implemented is limited. The use of experiential learning in education has shown to increase competencies [6][7][8], and is essential in learning contexts like liberal arts education. This extant gap in knowledge and implementation has

motivated this study, for which the experiential gamification model will be implemented in a semester across two course modules in sustainability and economics, in a liberal arts university.

The experiential gamification model [5] is built upon building an environment that incorporates repeated ideation, experience centred around a set of challenges. The study also further emphasizes on the right level of instructional design that does not place unnecessary cognitive load on students. The benefits of achieving a good balance in gaming and instructional design was demonstrated in a social learning game [8] which used role-playing to further expand the concept of experimentation in experiential learning with collaboration and problem solving seen in social learning. As such these elements, together with the experiential gamification model will be incorporated into a single model as part of our study for an overall game-design (fig.1).

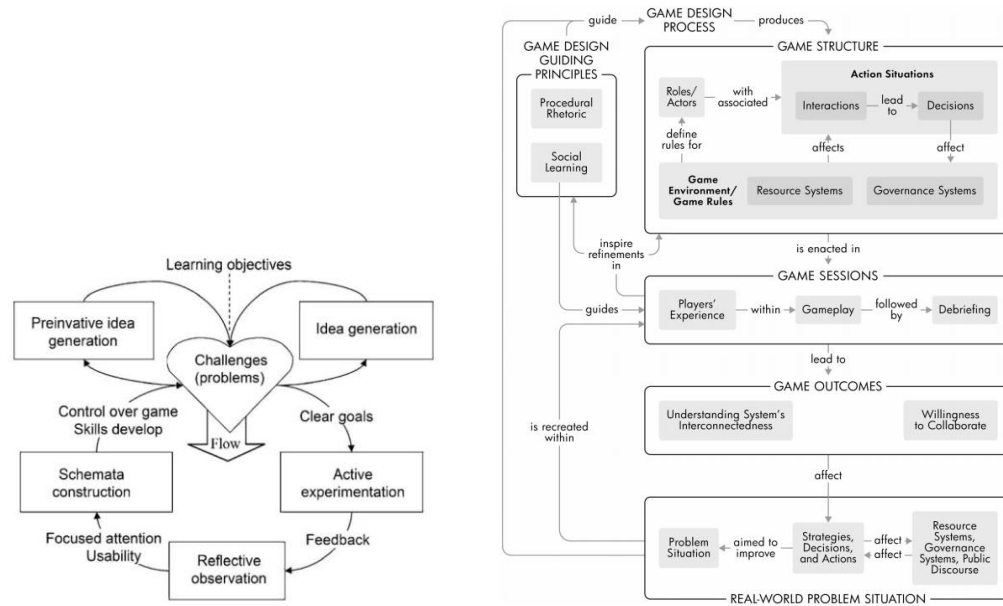


fig.1. the experiential gamification model and overall game design

Further expanding on the simulation role-playing model [9], our game design will incorporate a buyer / seller model for sustainability and economics modules, and where possible introduce a “rhetoric” factor to bring in persuasion and presentation. To further understand a longer period of the impact of gamification, the games will be conducted over three rounds, where the buyer and seller roles will be swapped. In this setup, student participants would have observed their peers in the social learning environment. The game will be conducted on a private purpose-built social mobile learning application, Soqle, where the private nature of the app [10] is expected to encourage experimentation - a crucial factor in experiential learning, where students can upload pictures, videos and engage peer to peer with likes, and comments. Teachers will also get access to learning analytics and provide feedback in a timely manner.

Table: Example game ideas, subject to updates based on ongoing curriculum discussions

Factor	Sustainability	Economics
Challenges	Buyer: Acts as NGO, Collector: Acts as public Seller:	Role 1: eg. play as China Role 2: eg. play as US
Idea Generation / Social Learning	Views peer content to gain new ideas on business models (eg	Research and obtain different views of parties involved

	costing, budgets)	
Rounds	3	3
Outcome to be measured	Amount of waste sold	Discussion and viewpoints exchanged, impact of arguments demonstrated

As experiential learning is more energy-intensive due to multi-faceted needs [11] like duration of activities, feedback, and preparedness, challenges will incorporate assessment activities with achievement goals (Fig.2.) [12] to maintain the required self-regulation. Data will be collected at the end of the semester, in the form of number of engagements (views, comments etc.) and compared with the depth and quality of the formative assessments. A survey will also be conducted to measure participant feedback on how the activities and the use of social learning meets the objectives of facilitating achievement of achieving the learning objectives.

**This study will be the first of its kind that incorporates experiential learning into gamification in a liberal arts setting, through social learning to encourage co-creation and peer to peer engagement, and essentially help us to understand how such a digital virtual environment can potentially help to scale up its effects and benefits.**

#### (iv) Project Activities, Timeline and Evaluation Strategy

<b>Major deliverables (including but not limited to blended learning materials and descriptions)</b>	<b>Target date for achieving the deliverables (mm/yyyy)</b>	<b>Evaluation / Quality Assurance strategy</b>
<b>Initiation</b> Literature review and recommendations	07/2021	Core team review + independent reviewer
<b>Development</b> Preparation and design of student assessment/online materials for in scope modules (science, environment and economics topics).	08/2021	Core team review
<b>Survey Design</b> Complete focus group plan and survey design	9/2021	Core team review
<b>Implementation</b> Post action review: Conduct focus group and complete transcriptions. Complete surveys for in scope students	12/2021	Inter rater reliability test and PCA / construct validity test
<b>Data Analysis &amp; Review</b> Action items / follow up	12/2021	Core team review + independent reviewer
Dissemination via Internal Staff development workshop or Showcase or	TBC in early 2022	Informal feedback will be sought from participants

<i>(Note: PPS is expected to disseminate the project findings within one year from the project end date. TLC will work with PPS for the presentation arrangement).</i>		
Final Project Report (Compulsory within 1 month of the Project finishing)	1/2022	A final project report will be produced by the PPS and feedback will be sought from TLC prior

### 3 Budget

(i) Breakdown

[Not for publication]

(ii) Faculty/ Department/ Centre/ Unit: contributions and support (IF Applicable):

Item/s (tick all that apply)	Description/s
<input type="checkbox"/> Personnel <input type="checkbox"/> Space <input type="checkbox"/> Hardware <input type="checkbox"/> Software <input type="checkbox"/> General expenses <input type="checkbox"/> Additional funds from departmental account	Space will be provided for visiting consultant(s), as well as necessary computer hardware and software.

## 4 CV of the Principal Project Supervisor

Please Include below a CV of the PPS of not more than 1 page. The CV should identify the relevant professional experience of the project coordinator(s), including previous project experience. If Co-Supervisors are listed, please also state their relevance to the project in no more than 300 words.

[Not for publication]

## 5 Important Notes: Copyright & Intellectual Property

**(i) Copyrighted Materials:** The University is committed to comply with copyright and intellectual property rights in Hong Kong and will strive to ensure the applicable copyright laws, regulations, guidelines and practices are adhered to. The Principal Project Supervisor is solely responsible for ensuring that all material provided to TLC is cleared of any copyright obligations. TLC accepts no responsibility for any claims or losses caused by any misuse of copyrighted materials used in this project by reason of its support of, and services rendered to, the project.

**(ii) Educational Use:** The ownership of the intellectual property generated by this project shall belong jointly to the \_\_\_\_\_ (Fac / Dept / Unit) and Lingnan University. Permission is given for the Teaching and Learning Centre of Lingnan University to adapt, use and disseminate for educational purposes all or part thereof in respect of the materials and the resources developed for the purpose of this project. Due acknowledgement will be given to co-creators of material for this project.

## 6 CONSIDERATION OF RESEARCH ETHICS

### Section A

I confirm that the proposal does/ does not involve\* research on human subjects. (\*Please delete as appropriate.)

If you said 'involves' above, please complete the remaining sections below by marking 'X' in the appropriate columns of the following table.

For expedited ethics review, please answer the following <b>Key Questions</b>	NO	YES
1. Does the study involve any activities that may cause psychological stress?	X	
2. Are any subjects under the age of 18 or otherwise potentially unable to give informed consent?	X	
3. Will students be audio taped/ videotaped as part of the study? <i>If you answered 'Yes', please complete Question 1 of Section B of this Part.</i>	X	

<p>4. Does the study involve students providing information that may have potential legal or ethical issues (e.g., sexual conduct or orientation, on illegal activities, or on use of banned substances)?  <i>If you answered 'Yes' please complete Question 2 of Section B of this Part.</i></p>	X	
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**Section B**

1. If you answered YES to the Question 3 above, please state how students' privacy will be protected (e.g., who will handle and access the data, where it will be stored, and how it will be reported in order to protect student privacy).
  
2. If you answered YES to the Question 4 above, please provide, in a separate document, further justification for the study.

**7 Project Proposal Submission**

**(i) Proposal Submission by PPS:**

I understand and will abide by all applicable University policies and rules as well as specific terms and conditions as specified in the TLC proposal form and guidelines. *(In signing below, the PPS is confirming the accuracy of the information provided and adherence by all staff participating in the project).*

Name: PAULINA WONG Signature:   
 (in block letters)

Dept / Faculty / Unit / Centre: Science Unit Date: 27/4/2021

**Please send the completed proposal (in soft copy as MS Word and a signed.pdf) to TLC ([tlc@ln.edu.hk](mailto:tlc@ln.edu.hk)) on or before the specified submission deadline.**



## References:

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- [2] Manzano-León, A.; Camacho-Lazarraga, P.; Guerrero, M.A.; Guerrero-Puerta, L.; Aguilar-Parra, J.M.; Trigueros, R.; Alias, A. Between Level Up and Game Over: A Systematic Literature Review of Gamification in Education. Sustainability 2021, 13, 2247. <https://doi.org/10.3390/su13042247>
- [3] Pilegard, Celeste; Mayer, Richard E. (2018). Game Over for Tetris as a Platform for Cognitive Skill Training. Contemporary Educational Psychology, (), S0361476X17304988–. doi:10.1016/j.cedpsych.2018.04.003
- [4] Pilegard, Celeste; Mayer, Richard E. (2016). Improving academic learning from computer-based narrative games. Contemporary Educational Psychology, 44-45(), 12–20. doi:10.1016/j.cedpsych.2015.12.002
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- [10] Aguiar-Castillo, Lidia; Hernandez-Lopez, Lidia; De Sa a-Perez, Petra; Perez-Jimenez, Rafael (2020). Gamification as a motivation strategy for higher education students in tourism face-to-face learning. Journal of Hospitality, Leisure, Sport & Tourism Education, 27(), 100267–. doi:10.1016/j.jhlste.2020.100267
- [11] Jacob, Sabrina Anne; Boyter, Anne C. (2020). “It has very good intentions but it’s not quite there yet”: Graduates’ feedback of experiential learning in an MPharm programme Part 2 (TELL Project). Studies in Educational Evaluation, 66(), 100889–. doi:10.1016/j.stueduc.2020.100889
- [12] Lim, Ji Young; Lim, Kyu Yon (2020). *Co-regulation in collaborative learning: Grounded in achievement goal theory*. International Journal of Educational Research, 103(), 101621–. doi:10.1016/j.ijer.2020.101621
- [13] Farrell, C. (2020). Do international marketing simulations provide an authentic assessment of learning? A student perspective. The International Journal of Management Education, 18(1), 100362. <https://doi.org/10.1016/j.ijme.2020.100362>