

The Effectiveness of Self-Paced Online Language Courses With Gamification Elements in the University Setting

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Abstract

Self-paced learning is a crucial approach for fostering students' intrinsic motivation to delve deep into understanding a given subject. However, motivating students to learn through self-access online courses outside the classroom is not an easy task. This study aims to investigate the effectiveness of two self-paced online language courses offered to all undergraduate students at the University of Hong Kong. The first course is designed to equip students with the necessary skills and knowledge to create effective digital CVs and write compelling cover letters. The second course offers an engaging approach to teach students Chinese idioms, fostering their language proficiency and cultural understanding. The online courses are designed using Open EdX as the learning platform and students enroll in the courses voluntarily. Both courses incorporate a variety of materials and online exercises to enhance the learning experience. Notably, gamification elements are strategically integrated into several exercises to enhance students' engagement and motivation. Qualitative and quantitative feedback are collected through online questionnaires and interviews to gather learners' experiences and perceptions of the gamified self-paced online courses. The response to both online courses has been overwhelmingly positive, with over 400 student enrollments in each course after the launch of the courses for eight months. The findings of this study contribute to the growing body of research on effective online language learning methodologies and provide insights for future course design, particularly regarding gamification in the design and implementation of self-paced online courses.

Keywords: Self-Access Learning, Online Learning, Language Learning, Gamification, Student Engagement, Motivation

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Introduction

Self-paced learning is a crucial approach for fostering students' intrinsic motivation to delve deep into understanding a given subject. Compared to some subjects, where immediate comprehension of correctness is possible, language learning, on the other hand, necessitates prolonged practice in order to achieve enhanced language proficiency. The self-learning resources are therefore very important to enhance students' learning language outside classroom. However, motivating students to learn through self-access online courses outside the classroom is not an easy task.

The primary mission of the Chinese Language Enhancement Programme (CLEP) in the School of Chinese of the University of Hong Kong (HKU) is to offer comprehensive and practical Chinese language training to students in all faculties at HKU. Currently, CLEP offers mandatory 6-credits Practical Chinese language courses to all HKU undergraduates. To promote the importance of self-paced learning of language, two large-scale online self-access courses, namely, 'Digital CV' (CLEP01) and 'Chinese Idioms For Everyday life'(CLEP02), have been developed under my supervision, with the funding support of the HKU Teaching and Learning Development Grant (TDLEG). The two online courses have been integrated into the HKU online learning resources platform. All HKU students can enroll in these courses voluntarily using their HKU portal login credentials. This study aims to investigate the effectiveness of these two self-paced online language courses offered to all undergraduate students at the University of Hong Kong during the period from September 2023 (official launch of the online courses) to April 2024.

Design of the Two Online Courses

During the course development stage and prior to their online launch, we have conducted interviews with employers, senior executives and human resources consultants across different industries to gain insight about the actual job market environment for the 'Digital CV' course. We have also conducted extensive research on various Chinese idioms dictionaries, books and website as reference to inform the content of the 'Chinese Idioms For Everyday Life' course. Subsequently, we have conducted video production, materials development and game exercise design for both online interactive self-access courseware in about 1 year.

The two online self-access courses are designed using Open EdX as the learning platform, in which all undergraduates of HKU can get access to the online courses by their university portal login voluntarily. Students can conveniently access these resources anytime, anywhere, and at their own pace.

The First Course: 'Digital CV' (CLEP01)

As the generation of digital natives, students are accustomed to immersing themselves in virtual environments for entertaining and socialization on a daily basis. The utilization of digital tools has also become an increasingly prevalent practice in the realm of job hunting. More and more companies will invite candidates to submit digital CVs to showcase their strengths and how they can contribute to the firm.

To make a quick response to the changing market environment and to better equip students to prepare for their coming job searching and interview, an online interactive learning resource

of ‘Digital CV’ (CLEP01) has been developed. Students can learn how to prepare both traditional written CVs and digital CVs for self-introduction or specific interview purposes. To cater for the diverse language needs of students, under my supervision as a CLEP member, this online course has been collaboratively developed with Centre for Applied English Studies (CAES), which offers university English courses, Chinese Language Centre (CLC), which offers university Putonghua courses, Centre of Development and Resources for Students (CEDARS), which facilitate career guidance service for university students, and Teaching and Learning Innovation Centre (TALIC) at the university.

A total of five sessions are structured in the course, with an introduction and four sessions of learning material and online interactive exercises. These exercises are meticulously crafted with varied question types and categories, with the purpose of guiding students to write compelling cover letters and CVs. What sets the course apart is the inclusion of numerous video interviews with employers, senior executives and human resources consultants in various industries. These video interviews provide students with valuable insights into the real market environment, enabling them to better prepare for job applications.

The Second Course: ‘Chinese Idioms For Everyday Life’ (CLEP02)

Chinese idioms have always been an important theme of Chinese language learning. The use of idioms is helpful for high-level language cognitive learning, improving learners' understanding of rhetoric, writing skills, and elevating overall Chinese language proficiency. In the past, students were always required by their secondary teachers to memorize the idiom dictionary verbatim, and the evaluation was often based on a rote recall or recognition response, not a practical application. Whether in language communication or writing, idioms cannot be properly used to effectively present thinking or illustrate mental constructs. In addition, secondary education has concentrated to prepare students for the public examinations, less time is allocated to discuss the use of Chinese idioms or the Chinese culture behind the idioms. Consequently, upon entering university, students often exhibit poor knowledge in this domain. Many of the existing Chinese idiom dictionaries or learning resources predominantly focus on the definition of individual idioms, allusions and meanings of the idiom. In most cases, the provided example sentences often lack relevance to real-world scenarios, making students feel that learning Chinese idioms are merely linguistic constructs and it is difficult to apply idioms in daily life.

To encourage students to learn and apply Chinese idioms in daily life, an online course ‘Chinese Idioms For Everyday Life’ (CLEP02) is developed solely by my team in CLEP. A total of six sessions are structured in the course, with an introduction and five sessions of learning material and online interactive exercises. In each session, there are videos prepared by teachers, illustrating how Chinese Idioms can be applied in everyday situations or delving the explanation of Chinese culture or allusions associated with specific Chinese idioms. The exercises are meticulously crafted with varied question types, with the purpose of evaluating students’ knowledge of Chinese idioms from diverse perspectives. For example, there are exercises including tasks focusing on understanding the cultural context of Chinese idioms, correcting word usage within idiomatic expressions, and applying Chinese idioms in sentences etc.

Gamification Elements of the Two Online Courses

When developing these two online courses, we try to integrate the gamification elements into the design of the exercise to arouse students' interest and further enhance their learning experience. In our course design, the game characteristic refers to the design of exercise. In addition to conventional multiple-choice and fill-in-the-blank exercises, we incorporate interactive elements like 'spot the issue game' and 'crossword puzzles' to add layers of complexity and make the 'game' (exercise) more challenging. For example, one of the 'spot the issue' exercises within the 'Digital CV' (CLEP01) course are designed as playing a game with 5 lives (Picture 1). Students need to spot the issue of a Chinese cover letter containing 15 problems. If students can spot the issue, the colour of the sentence will be changed from black to grey. If students spot the wrong answer, 1 life will be deducted. If all 5 lives are deducted, the 'game' is over. Students can retry the game (exercise) again (Picture 2). To let students have the feeling of playing games, a size-adjusting button, which is commonly found in gaming interfaces, is introduced within the 'spot the issue game', 'fill-in-the-blank' and 'crossword puzzles' exercises.

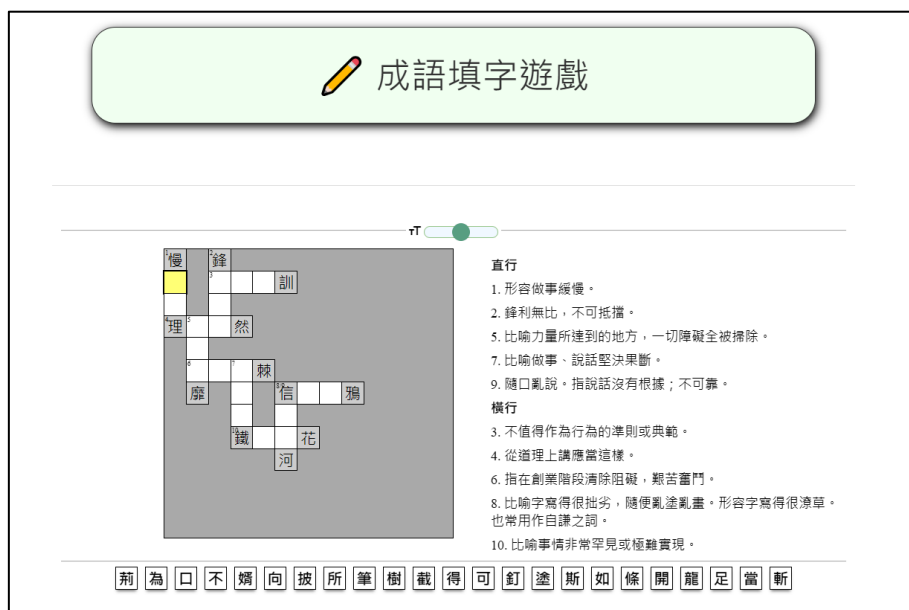


Picture 1: The number of 'life' is displayed at the top left-hand corner, while the size-adjusting button is displayed at the top right-hand corner.



Picture 2: When all 5 lives are deducted, the 'game' is over. Students can retry the game (exercise) again.

In the ‘Chinese Idioms For Everyday life’ (CLEP02) course, gamification element such as crossword puzzles is integrated into some exercises. For example, in Picture 3, students need to complete a crossword puzzle by choosing words from the bottom, aided by the hints provided on the right-hand side. If they fail, the ‘game’ will be over (Picture 4).



Picture 3: The ‘crossword puzzle game’ in the course ‘Chinese Idioms For Everyday Life’ (CLEP02). Students need to complete the crossword puzzle by choosing words from the bottom, aided by the hints provided on the right-hand side.



Picture 4: When students can't get the answer correctly, the ‘game’ is over. Students can retry the game (exercise) again.

The innovative approach, together with the integration of gamification element in these online courses design, distinguished it from standard online resources, making the learning experience more interactive and enjoyable for students.

Data Collection

Upon the initial completion of the two online courses but before their official launch, student helpers are invited to try the exercise and participate in focus group interviews to share their thoughts about the learning materials and the game exercise design, the level of difficulty of some specific questions and the smoothness of the online courseware system. Adjustments to certain questions are made based on the feedback received from the student helpers.

The online courseware was officially launched in September 2023, with enrollment open to all HKU undergraduates on a voluntary basis. Participants are encouraged to navigate to the last page of the course interface to complete an online questionnaire voluntarily after engaging with the courses, thereby fostering further feedback acquisition and refinement opportunities. The questionnaire consisted of 12 questions, including both closed-end multiple-choice questions (Q1, Q2, Q3, Q4, Q6, Q8 and Q10) and open-ended questions (Q5, Q7, Q9, Q11 and Q12), enabling a comprehensive evaluation of various aspects of the online courses, including usability, content relevance, and the overall learning experience. It provides an opportunity for students to express their satisfaction levels, challenges encounter and suggestions.

Effectiveness of the Two Online Coursewares

Large Number of Enrollments

The two self-paced online courseware ‘Digital CV’ (CLEP01) and ‘Chinese Idioms For everyday life’ (CLEP02) were introduced in September 2023. Over the course of 8 months, from September 2023 to April 2024, 489 students voluntarily enrolled in the ‘Digital CV’ (CLEP01) course, while 407 students voluntarily enrolled in the ‘Chinese Idioms For Everyday Life’ (CLEP02). The large number of participants in both courses, despite their voluntary nature, serve as strong evidence that the two online courses can effectively meet students’ need for job searching preparation, as well as the enrichment of Chinese idiomatic knowledge.

Positive Feedback From Participants

Participants of the online courseware are invited to complete an online questionnaire voluntarily. Within the data collection period (from September 2023 to April 2024, 8 months), 302 and 333 online questionnaires were received for the online courses ‘Digital CV’ (CLEP01) and ‘Chinese Idioms For Everyday Life’ (CLEP02) respectively. The feedback from participants is overwhelmingly positive, offering valuable insights into the courses’ impact on job search preparation, Chinese idioms introduction, Chinese language proficiency improvement, learning flexibility and convenience, engagement through gamification, ease of navigation, and overall usefulness.

Questionnaire Result for ‘Digital CV’ (CLEP01)

302 online questionnaires were received for the online courses ‘Digital CV’ (CLEP01). Overall, the students highly praised the course for providing them with an opportunity to learn practical language knowledge in a more flexible and convenient way. Approximately 92% of participants rated the course as useful (Q8), and over 95% indicated that they would recommend it to their peers (Q10). Results also indicated that the course helped them become

more familiarized with the job market (Q1)(91.1%) and get better prepared for job searching (Q2)(87.8%), (Appendix 1).

Questionnaire Result for ‘Chinese Idioms FOR Everyday Life’ (CLEP02)

333 online questionnaires were received for the online courses ‘Chinese Idioms For Everyday Life’ (CLEP02). In general, most students agreed that the course helped them become more familiarized with the Chinese idioms (Q1)(89.5%). Around 91.3% of students rated the course as useful (Q8), and 93.4% students expressed willingness to recommend it to their peers (Q10), (Appendix 2).

The success of these two online self-access interactive courses is evidenced by the data collected. Within 8 months of their launch, the significant enrollment numbers reflect a genuine learning need among students for job search preparation and the application of Chinese idioms. Participants overwhelmingly agreed on the usefulness of the two courses, with praise that the game design is interesting, with most students would recommend the courses to their peers.

Conclusion

Digital technologies play an important role in personalizing the learning process. With the rapid development of science and technology, it is a general trend to introduce technology into teaching and learning. Effective self-access online learning materials have great potential for complementing classroom input and learner uptake. Students' mastery of new technologies has made them accustomed to learning at anytime and anywhere in a way that suits their own learning pace. Teachers from various units (or even different universities) can get together and work for better goals to enhance teaching and learning.

However, there are several challenges in designing online interactive courses. Firstly, the design of the online course on Chinese idioms need to pay attention to learner orientation and academic background, tailoring the learning materials content and activities to meet students' needs and interests.

Secondly, since students can learn the online course at their own learning pace and own learning ability, teachers need to skilfully design the learning materials and exercises of different level of difficulty and strategically organize them with the course structure. In terms of content, course design should focus on contextualization and practicality, allowing students to apply idioms in real contexts.

Finally, adequate focus on assessment and feedback mechanisms is essential to help students track their learning progress and receive effective guidance. To encourage students to enroll in courses, employing gamification element into exercise design is a good method, but this method involves whether there are enough skilled IT technicians to discuss with teacher how to align game design with course content effectively.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

In the writing process, AI tools ChatGPT3.5, ChatGPT4.0 and Grammarly are used to help polish the sentences.

Appendices

Appendix 1: Online questionnaire result for the course ‘Digital CV’ (CLEP01)

Q1. The course has helped me become more familiarized with the job market. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	125	41.39%	=91.1%
4	150	49.67%	
3	18	5.96%	
2	5	1.66%	
1 (not at all)	4	1.32%	
	302	100%	

Q2. The course has helped me get better prepared for the job searching. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	137	45.21%	=87.8%
4	129	42.57%	
3	24	7.92%	
2	9	2.97%	
1 (not at all)	4	1.32%	
	303	100%	

Q3. The course has helped me learn practical language knowledge in a more flexible and convenient way. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	121	40.06%	=87.1%
4	142	47.02%	
3	27	8.94%	
2	6	1.99%	
1 (not at all)	6	1.99%	
	302	100%	

Q4. The gamification part of the course (cover letter and resume exercise in Section 3) is interesting. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	104	34.32%	=88.8%
4	165	54.46%	
3	20	6.60%	
2	8	2.64%	
1 (not at all)	6	1.98%	
	303	100%	

Q5. If you rate 3 or below for the previous question, please explain and suggest ways for improvements.

- Use two languages in the same page please
- More specific explanation and shorter exercise could be provided
- Too hard to find 15 answers with 20 tries, would be better if you could put the not-so-good examples and the better examples on the same page and highlight the mistakes
- Too few lives, need to try from the beginning once game-over experiences, but agree this made learning more fun

Q6. Overall, I find the course system easy to navigate. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	113	37.42%	=91.7%
4	164	54.31%	
3	20	6.62%	
2	3	0.99%	
1 (not at all)	2	0.66%	
	302	100%	

Q7. If you rate 3 or below for the previous question, please explain and suggest ways for improvements.

- The system is not that easy to follow. Can provide some audios to aid
- The videos that I have finished watching do not count as watched

Q8. Overall, I would rate this course useful. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	120	39.87%	=92%
4	157	52.16%	
3	15	4.98%	
2	3	1.00%	
1 (not at all)	6	1.99%	
	301	100%	

Q9. If you rate 3 or below for the previous question, please explain and suggest ways for improvements

- A bit fragmented
- I can just come back anytime to look for details instead of watching everything

Q10. Would you recommend this course to your peers? (Yes, No)

Answer	Count	%
Yes	288	95.7%
No	13	4.3%
	301	100%

Q11. If you choose 'No' for the previous question, please explain why not.

- The course is too long to complete. Nevertheless, it do gives some important knowledge on the language needed in the workplace
- The things I looked at just now are not really hard

Q12. Any other suggestions to help us improve the course?

- The interactive exercises are fun, but the paragraphs are a bit hard to read. Larger spacing may help
- The videos can be put together as one, separating is helpful but also a long video which gather all of them in one single topic
- Some questions are very hard
- There are some parts asking us to try to figure out the mistakes which I think may need some improvements because I found that it is very inconvenient to compare the correct one with the wrong one. They are on two different pages and the explanation to the wrong sentence will only show when we click the right "wrong" sentence
- I suggest adding one more page which highlight all the wrong sentences with all explanation shown all together.
- This course is really perfect
- Perfect and nothing more to improve
- Provide link for downloading notes
- This is interesting
- More examples

Appendix 2: Online questionnaire result for the course ‘Chinese Idioms for Everyday Life’ (CLEP02)

Q1. The course has helped me become more familiarized with the Chinese Idioms. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	146	43.84%	=89.5%
4	152	45.65%	
3	25	7.51%	
2	7	2.10%	
1 (not at all)	3	0.90%	
	333	100%	

Q2. The course has enhanced my Chinese writing skill. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	91	27.33%	=74.5%
4	157	47.15%	
3	58	17.41%	
2	19	5.71%	
1 (not at all)	8	2.40%	
	333	100%	

Q3. The course has helped me learn practical Chinese language knowledge in a more flexible and convenient way. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	120	36.04%	=85.6%
4	165	49.55%	
3	36	10.81%	
2	8	2.40%	
1 (not at all)	4	1.20%	
	333	100%	

Q4. The gamification part of the course (eg crossword puzzle in Section 5) is interesting. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	136	40.84%	=90.7%
4	166	49.85%	
3	19	5.71%	
2	7	2.10%	
1 (not at all)	5	1.50%	
	333	100%	

Q5. If you rate 3 or below for the previous question, please explain and suggest ways for improvements.

- I think should have a session to let us use the idioms to write some sentences
- More hints
- Some questions are so difficult
- For words I do not understand, there are no clues to figure them out at all
- Can reduce some exercise, there is a little bit much
- Adding a delete button is recommended as students might accidentally click into the wrong button and need to refill in all the correct answers again for submission
- Can give more examples on how to apply the Chinese idioms during writing
- Perhaps it is more useful to deliver the meaning and history through videos, animation and pictures

Q6. Overall, I find the course system easy to navigate. (5 very much so; 1: not at all;)

Answer	Count	%	%
5 (very much so)	120	36.15%	=91.9%
4	185	55.72%	
3	22	6.63%	
2	3	0.90%	
1 (not at all)	2	0.60%	
	332	100%	

Q7. If you rate 3 or below for the previous question, please explain and suggest ways for improvements.

- If possible, the page can add a slide about some idioms that have appeared in the questions and with their explanations and origins
- Too many tasks that require me to click "next"
- Maybe more videos and animation

Q8. Overall, I would rate this course useful.

Answer	Count	%	%
5 (very much so)	107	32.13%	=91.3%
4	197	59.16%	
3	18	5.41%	
2	7	2.10%	
1 (not at all)	4	1.20%	
	333	100%	

Q9. If you rate 3 or below for the previous question, please explain and suggest ways for improvements.

- It would be nice to explain the false MC choices as well

Q10. Would you recommend this course to your peers?

Answer	Count	%
Yes	310	93.4%
No	22	6.6%
	332	100%

Q11. If you choose 'No' for the previous question, please explain why not.

- Too many exercises question
- Too hard for me to handle

Q12. Any other suggestions to help us improve the course?

- Include more written examples
- Provide more practice
- Good
- Provide more videos for small tips in learning about Chinese Idioms, e.g. we can guess the combination of words and figure out the complete whole idioms by observing certain patterns in the Idioms
- The course can provide more videos for introducing the important of the using idioms in daily life
- More interactive games like crossword puzzle and fill in the blanks can be used to improve study motivation
- Great course to enrich my understanding of the Chinese idioms, thought can be more interesting by adding more crossword puzzles like those in exercise 4
- More interactive games
- Very good enough
- Perfect
- It is perfect
- Some teaching videos of the idioms may be included before the exercises
- Perfect
- Can add some explanation for the incorrect answers
- Questions might have hints of the correct answer after students click the wrong answer.
- Reduce the word list and focus more on the illustration of the words' history and its application.
- The contents are very good and useful

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