

大學生研發電子遊戲 無薪助SEN學習 University Students Develop Game with No Pay to Help Students with SEN

Card Adventure - Ashley Lam & Ruby Poon

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若說人生是一場遊戲，對讀寫障礙小朋友來說，讀書可能是關卡中的「大魔王」。兩位大學生林曉晴（Ashley）和潘嘉穎（Ruby）為幫助讀寫障礙學生克服困難，申請社創基金計劃Good Seed資助，研發幫助讀寫障礙學童學習語文的電子遊戲「卡牌大冒險」，讓學生從闖關中得到成功感，重新愛上學習。九個月的計劃實踐期，她們已接觸了約一百五十位學生，看見同學在學習中重拾快樂，讓她們覺得一切都是「more than money」。

If life is a game, studying is probably the 'boss battle' for children with dyslexia. To help students with dyslexia overcome this obstacle, two university students, Ashley and Ruby, applied for subsidy from Good Seed, supported by the SIE Fund, to develop "Card Adventure". "Card Adventure" is a digital game that helps dyslexic students learn languages. By giving students a sense of achievement as they complete each level, the game helps them find their lost love of studying. In the nine-month pilot period, the creators have already approached about 150 students. After seeing children find happiness in learning once again, they think the reward is "more than money".

好友患讀寫十八年方知 成項目導火線

「最難幫助的，不是小朋友本身的能力，而是他的心靈。」說起SEN(特殊教育需要)學生，Ashley頗有心得。前年她在香港理工大學設計學系畢業，修讀互動媒體，而她的畢業作品透過研發卡牌大冒險的雛形，以AR遊戲訓練幫助讀寫障礙的課題，並夥於港大修畢中文教育的Ruby，發展出「卡牌大冒險」的不同系列。

遊戲設計意念源於Ashley摯友的經歷。「考DSE(Hong Kong Diploma of Secondary Education)時，她告訴我發現自己有讀寫障礙。不過我不知道讀寫障礙是怎樣一回事，只是同窗五年經常看見她有些簡單至小學生也會的字，她也會寫錯。」，好友面對困難Ashley卻無從入手，「所以我十分痛恨自己的無能為力，希望自己能幫助其他面對同樣困難的學生。」

這次經驗觸發他們幫助讀寫障礙的決心，Ashley和Ruby申請社創基金Good Seed的資助，獲款十萬元，推出15套網上學習教材，共有30名SEN學童率先試用，「卡牌大冒險」計劃才得以實踐。

代入小朋友的困難是關鍵

「卡牌大冒險」是一個Augmented Reality(AR)遊戲應用程式，配合課程和數據分析平台，當小朋友使用該應用程式，便可以進入遊戲世界，通過拆字、拆部首等遊戲闖關，提升他們對文字的認識和興趣。Ruby說：「可能我們平常看字會一次看幾行，但一個有讀寫障礙的小朋友會好像看一座山般，看完第一行看第三行，然後又跳回第二行。」

「最困難是學生還小，講不出他們的困難，他不會跟你說自己看完第一行便跳到第四行，他只會說看得不舒服，或者不喜歡看、頭好暈。」Ruby指，由於她們本身沒有讀寫障礙，了解學生並非易事，因此觀察小朋友的表現就十分重要，同時要代入小朋友的心情和能力，然後思考如何令他們開心學習，重拾自信與學習動機。

同學之間可能會做出具攻擊性的言行，對讀寫障礙小朋友造成極大傷害。她們為了讓小朋友克服心理障礙，特意在遊戲中設計卡通角色陪伴小朋友成長，在魔法世界解任務過關，賦予學生一種能力與責任，告訴他們其實自己也能夠學習。

Ruby說，小朋友的反應印證她們的方向並沒有錯，每一個人皆是獨特的，各自都需要不同的學習方法。「不可能叫魚和猴子鬥快爬上一棵樹，因為魚永遠不能爬樹，正如你不會叫猴子游泳。」

A Friend Suffering from Dyslexia for Eighteen Years Become the Project's Fuse

“It is harder to open a child’s heart than to develop their ability.” Ashley is instrumental when it comes to students with SEN (Special Education Needs). Year before last, she graduated from the School of Design of the Hong Kong Polytechnic University, majoring in interactive media. Her graduation works was developing the prototype of “Card Adventure” and using AR games to help with the dyslexia. Together with Ruby, a Chinese language education student at the University of Hong Kong, they evolved different collections of “Card Adventure”.

The game was inspired by the experience of a close friend of Ashley’s. “When we were taking the DSE, she told me she found out that she had dyslexia. I had no idea what dyslexia was. Being her classmate for five years, all I saw was that she usually writes some characters wrong, even very simple ones that schoolchildren would know.” Friend was in trouble but Ashley didn’t know how to help her, “so I felt an inability to do anything and I hope I can help other students who face the same difficulties.”

Her friend’s condition inspired her to help dyslexia. Ashley and Ruby applied for a subsidy from Good Seed, which is supported by the SIE Fund. With the \$100,000 they were granted, they developed 15 sets of online learning materials with 30 SEN children as pilot users, kick-starting the project of “Card Adventure” to help children suffering from dyslexia.

Stepping into the Children's Shoes is Key

“Card Adventure” is an AR games application software with a designed curriculum and data analysis platform. Children enter the world of the game in the app, splitting characters and radicals to complete levels. It is meant to raise their interest and increase their knowledge in words. Ruby said, “We may read a couple of lines at a time, but a child with dyslexia reads words as if they are looking at a mountain. They would skip to the third line after finishing the first, and then jump back to the second.”

“The hardest part is that the students are too young to be able to express their difficulties. They won’t tell you they’ve jump to the fourth line after the first. They will just say they’re not feeling well when they are reading, or that they are dizzy and don’t like reading.” Ruby pointed out that as she and Ashley do not have dyslexia themselves, it is not easy to understand the students. It is, therefore, particularly important to observe the children’s behaviours, put themselves in the children’s shoes, imagine what the children feel and what the children can do, and reflect on how to make the children study happily, regain their self-confidence and motivation on learning.

大數據助學童個別化學習

她們現正收集同學的學習數據，以分析他們的長處和弱點，為其制定相應課程，「例如十題入面答錯七題，或者答對八題，我們再可以結合他們的家庭和學校背景，去做一個大數據分析。」

目前計劃取得階段性成功，她們以每班六至八人的小班形式，到超過十間學校及機構，接觸了超過一百位學生。同時她們也舉辦了一些遊戲體驗日，兩次試堂一共接觸到百五位學生。

課堂成效相當良好，看見讀寫障礙學生能夠快樂學習，讓她們高興不已。Ashley接觸過一位有智力障礙和讀寫障礙的學生，被同學指著頭說她蠢，令她厭惡學習。「後來看見她有能力，我們會按住她的進度去做，再將進度差不多的小朋友編成一組，她就更加會覺得可以融入，她能跟上那個進度。」

「有個小朋友就有讀寫障礙和自閉症，玩團體遊戲佢都不太投入，但每次他玩這個遊戲(卡牌大冒險)時，就好像這遊戲進入了他的世界，每次完成了題目之後就會做Superman的動作。」小朋友一舉手一投足，皆成為Ashley和Ruby的前進動力，因為令學生產生學習興趣和動力，提升學習效果正正就是她們的教學宗旨。

助人為本 發揮社企精神

年少創業，幫助學習障礙兒童，全憑無私教育理念。創業家在投資前或多先考慮收益，然而莫說「卡牌大冒險」沒有豐厚盈利，特別是疫情下，要支撐一個人的生活也有困難，「現在主要有我倆，還有另一位做數據，三個人當每人每月出一萬元，那一個月就要三萬，現在就做不到。但我們的Priority不在這裡，共識是把收入投放到課程中。」Ashley認為，如果計劃能幫其它人、有價值，而自己又有熱誠去做，得到的是「more than money」，她也相信，「如果有多些像Good Seed這樣的基金，相信會有更加多人受惠。」

Ruby說：「當社會陷入時代的低谷中，社企更加有責任和使命去幫助貧苦大眾。有不少社企也會自己出錢造口罩，讓更多人認識社企，將這個概念帶給更多人。」這是最好的時代，也是最壞的時代，人性光輝在黑暗中拼命的閃爍。

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Offensive behaviours from fellow students cause great distress to children with dyslexia. To help them overcome psychological obstacles, Ruby and Ashley designed cartoon characters as companions in the game. Completing missions in a magical world seems to grant the students some kind of ability and responsibility, showing them that they are also able to learn properly.

Ruby said that the children's reaction proved that they were on the right track. They were even more convinced that everyone is unique and needs to learn in different ways. "You can't ask a fish to have a tree climbing race with a monkey, because the fish will never be able to climb a tree, just as you won't ask a monkey to swim in a pool."

Big Data Aids Individualized Learning

Ruby and Ashley are now collecting students' learning data to analyse their strengths and weaknesses in order to tailor a curriculum for them. "Say, they get seven out of ten questions wrong, or they get eight right. We can then take into consideration their family and school backgrounds for big data analysis."

Their project has achieved initial success. They have reached over a hundred students in more than ten schools and institutions, in the form of small classes of six to eight. They have also organised game experience days and approached a total of 150 students in two trials.





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The class is seeing great results. Ruby and Ashley are thrilled to see students with dyslexia learn happily. Ashley once met an intellectually challenged student with dyslexia who hated learning because her fellow students had pointed at her head while calling her stupid. "Later, we catered for her ability and progressed at a pace she was comfortable with. We then grouped children with similar progress together. She became more confident that she would fit in as she could handle the pace."

"We met a child with dyslexia and autism who was not engaged in any group games. Every time he played 'Card Adventure', however, he became very engaged. He would do a Superman pose every time he completed a question." The children's reactions are the motivations for Ashley and Ruby because it is their mission to motivate students to learn better.

Doing Good is the Spirit of Social Enterprise

Driven by a selfless vision, the two young entrepreneurs are determined to help children with learning disabilities. Most entrepreneurs have their eyes set on profits before they invest. "Card Adventure", however, is not particularly profitable, especially during the pandemic. It is difficult to support the livelihood of one person at the moment. "Besides us two, there is another team member who works on the data. If each of us gets \$10,000 a month, that's \$30,000 each month. We can't afford that at the moment. Anyway, that's

not our priority. Our consensus is to invest the revenue back into the curriculum." Ashley thinks that if she works passionately for a meaningful cause that can help others, what she gets is "more than money". She also believes that if there are more foundations like Good Seed, more people will benefit.

"It is the responsibility and mission of social enterprises to help the poor, more so in such a hard time," Ruby said. "A lot of social enterprises manufacture face masks with their own money. Perhaps more people will get to know what social enterprises are." This is the best of times, this is the worst of times, and in the darkness, humanity shines brightly and ceaselessly.

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