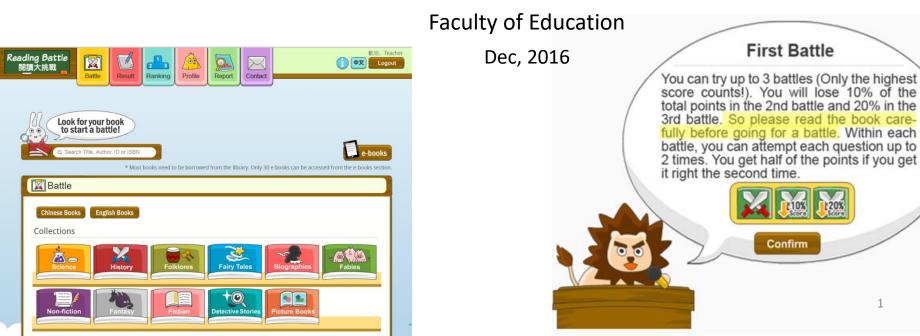# Developing reading and writing abilities effectively and efficiently with Reading Battle
《閱讀大挑戰》 如何有效地助孩童培養閱讀興趣和提升寫作能力

equiz.cite.hku.hk

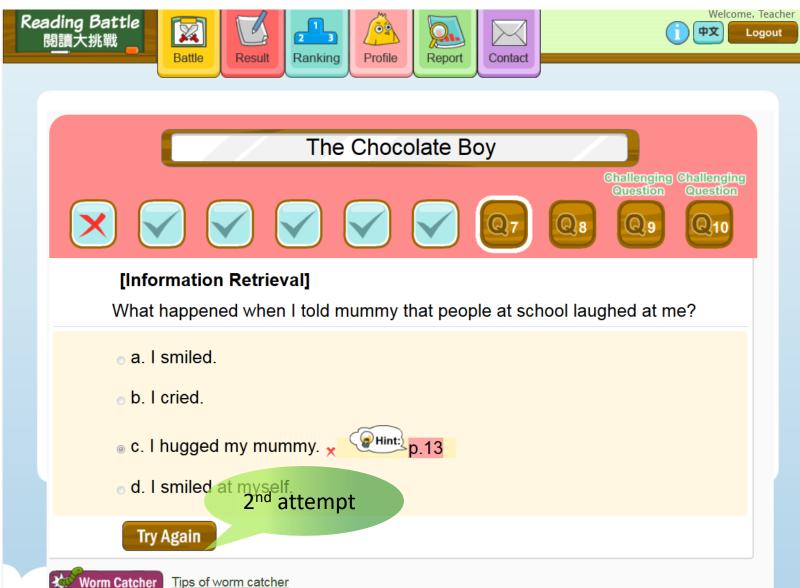Dr Samuel Kai Wah Chu

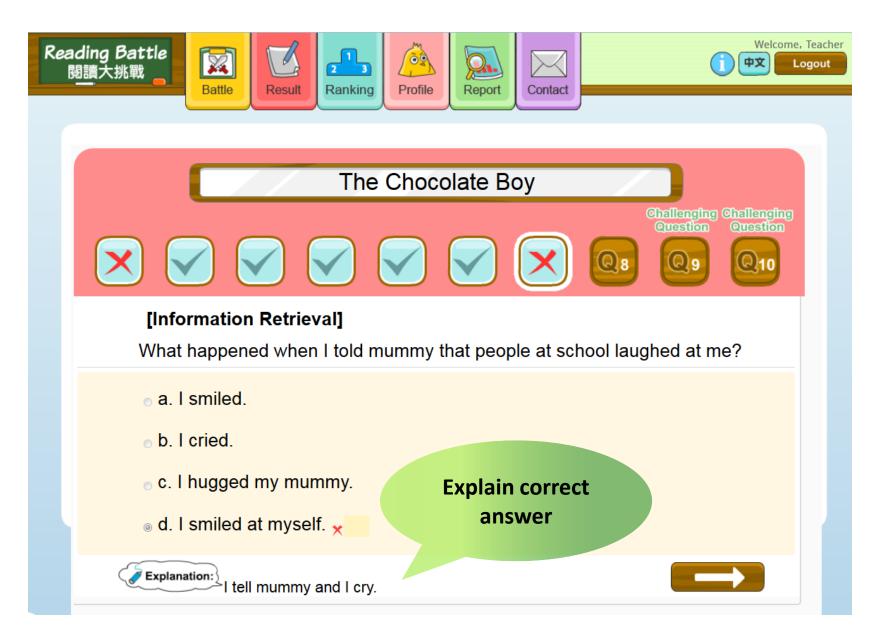Division of Information and Technology Studies,

Faculty of Education

Dec, 2016

First Battle

You can try up to 3 battles (Only the highest score counts!). You will lose 10% of the total points in the 2nd battle and 20% in the 3rd battle. So please read the book carefully before going for a battle. Within each battle, you can attempt each question up to 2 times. You get half of the points if you get it right the second time.

1

System Demo

Scaffolding support – Provides a hint when answer incorrectly

Provides immediate feedback

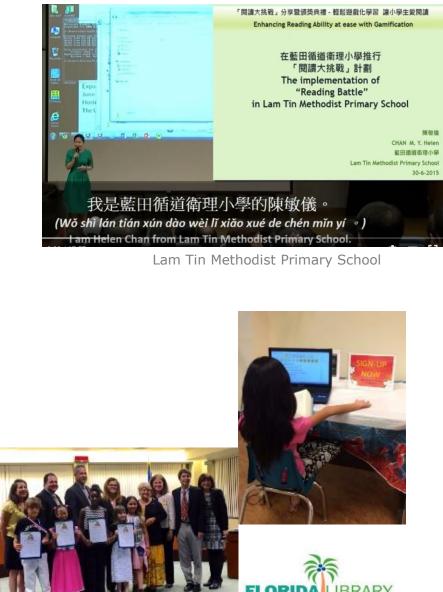# 50 schools/ libraries in total

Hong Kong (6 of 32 primary schools)

1. Ho Lap Primary School (sponsored by Sik Sik Yuen)
2. Toi Shan Association Primary School
3. Xianggang Putonghua Yanxishe Primary School of Science & Creativity
1. Chinese Y.M.C.A. Primary School
2. Lam Tin Methodist Primary School
3. King's College Old Boys' Association Primary School No. 2

Hong Kong (2 of 11 kindergartens)

1. Tang Bik Wan Memorial Kindergarten
2. Tin Ka Ping Kindergarten

Taiwan (2 primary schools)

Keelung Municipal Ren-Ai Primary School

Taipei Municipal Wanxing Elementary School

The US (1 kindergarten, 2 public libraries)

Bright Horizons

North Miami Beach Public Library (summer program)

Mainland China (2 primary schools)

Zhonghua Road Primary School

Lam Tin Methodist Primary School

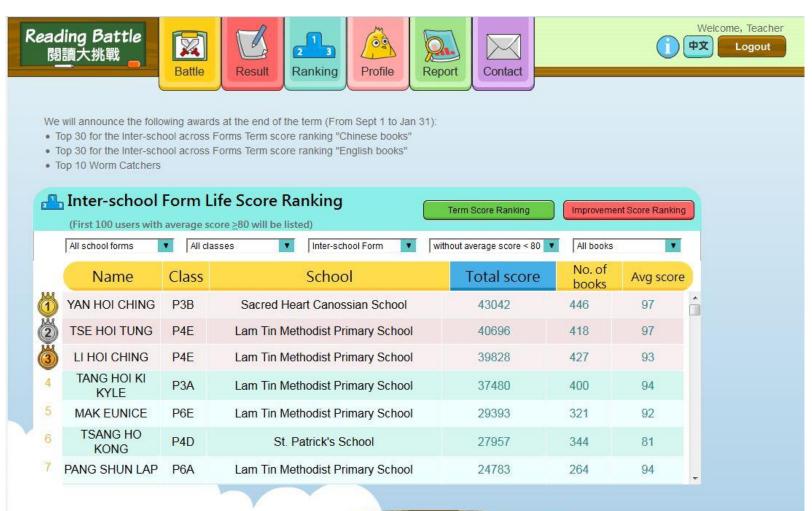Photos courtesy of: Florida Library Association 'Prevent the Summer Slide' Program Hernandez, E., Chu, S. & Hong, H. (2015)

Life score ranking

Q4: Did you improve academically in the past year? (If yes, in which area? Reading, writing, Chinese, English, General Studies, etc.)

Q5: Is your academic improvement owed to the use of Reading Battle or other methods?

7

Table 3 Aspects of students' academic improvements and the reasons behind

Domain	Sub-domain	Items	Students (n=37)
Aspects of students' academic improvements and the reasons behind — Academic improvements	Aspects of improvements	Chinese-Reading	14 (38%)
		Chinese-Writing	17 (46%)
		Chinese-Vocabulary	6 (16%)
		English-Reading	12 (32%)
		English-Writing	12 (32%)
		English-Vocabulary	4 (11%)
		General studies	4 (11%)
	Reasons for improvements	Using Reading Battle	16 (43%)
		Other methods	4 (11%)
		Both	11 (30%)
		Total	31 (84%)

Note: 34 out of 37 (92%) students thought they had academic improvements during the last year and 31 out of 37 (84%) students gave the reasons for their improvements. For the aspects of improvements, one student could have improvements in more than one aspect, thus the total percentage of this part could sum up to more than 100%.

Students' feedback on their academic improvement as well as its reasons

- "My Chinese reading improved a lot. Normally I get grades around C and B range but now it's always A."

- "The results of my Chinese exam has increased from 80 something to 90 something marks. It helps my reading because it trains me to read a large amount of books in a short period of time."

- "My English and General studies have improved. I got 10 marks approximately. But now, I get around 90 marks."

- "I reckon my improvement in academic studies is due to the fact that I use Reading Battle. Books in the Reading Battle are harder, so usually I would not be interested in reading them. But the moment when I saw the ranking list, I realize that if I could complete the harder tasks with all correct answers, the average scoring increases, which then motivates me to read more of them."

- "My academic improvement is owned to the use of Reading Battle rather than other methods, because it showed the level for each book that let me know which book is suitable for me."
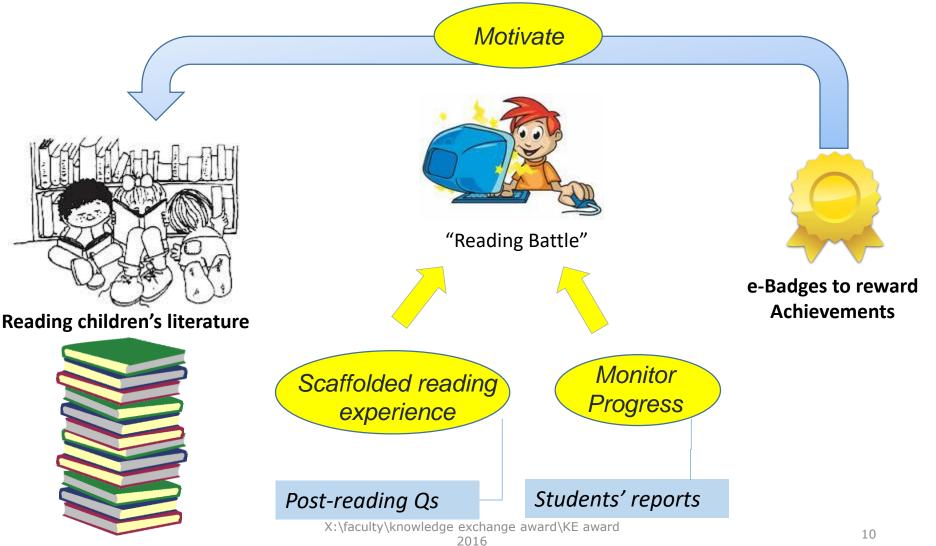
Impacts Achieved: Hong Kong primary schools - 3

Effect of RB on English Assessment (2013-2014 Term 2) between academically strong and weak groups							
English mixed grouping		E.Reading_T2A3	E.Dictation_T2A3	E.Listening_T2A3	E.Speaking_T2A3	E.Writing_T2A3	E.FullMark_T2A3
AC(Strong) & RB(strong)	Mean	90.33	29.78	17.89	19.33	29.11	186.44
	N	9.00	9.00	9.00	9.00	9.00	9.00
	SD	6.80	0.67	1.69	0.71	1.17	9.00
AC(Strong) & RB(weak)	Mean	87.90	29.30	17.30	18.70	28.40	181.60
	N	10.00	10.00	10.00	10.00	10.00	10.00
	SD	10.58	1.06	2.79	2.11	1.65	13.87
AC(weak) & RB(weak)	Mean	66.06	18.41	12.35	13.24	26.35	136.41
	N	17.00	17.00	17.00	17.00	17.00	17.00
	SD	15.05	8.75	4.00	4.87	2.80	28.37
AC(weak) & RB(strong)	Mean	76.67	24.67	13.67	17.33	28.67	161.00
	N	3.00	3.00	3.00	3.00	3.00	3.00
	SD	5.51	8.39	3.79	2.31	1.53	18.00
Total	Mean	78.08	24.31	15.00	16.36	27.69	161.44
	N	39.00	39.00	39.00	39.00	39.00	39.00
	SD	16.09	8.09	4.07	4.40	2.42	30.88

Underpinning Research – innovativeness - 3

In Reading Battle, every child can be a WINNER!

Motivate-Scaffold-Monitor(Wu et al., 2014)

Motivate

"Reading Battle"

Reading children's literature

Scaffolded reading experience

Monitor Progress

e-Badges to reward Achievements

Post-reading Qs

Students' reports

The Impact of Incorporating Gamification in Reading to Students with Autism Spectrum Disorder: A Local Exemplar

Source: Lam Tin Methodist Primary School
http://www.ltmps.edu.hk/it-school/php/webcms/public/
index.php3?refid=700&mode=published&nocache1409025140

Helen Chan
Lam Tin Methodist Primary School
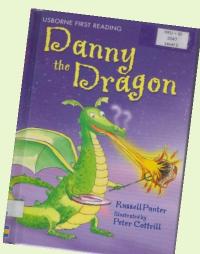**Dec. 10, 2016**

Hall 3DE, Hong Kong Convention and Exhibition Centre

Implementation Stages

"Not One Less"

USBORNE FIRST READING

HKU · ID
2047
Level 2

Danny the Dragon

Russell Punter

Illustrated by
Peter Cottrill

資訊素養 Y 世代：活動速遞

閱讀大挑戰 Reading Battle (小三、小四)

iCloud

本校參加了香港大學的優質教育基金計劃：
「透過雲端兒童文學讀後測驗車服務加強學生的中、
英文閱讀理解能力」，計劃旨在透過精選兒童文
學、有趣的網上互動遊戲和富挑戰性的不同比賽安
排（包括 本校隊 及 國際隊 ），以提升學生中、英文
閱讀理解能力，使學生在不同學科學習上有所增益。

港大教育學系副教授朱敬華博士率領研究團隊
在2014年2月13日(四)親臨學校，向中、英、常老師介紹計劃及
雲端互動學習設計，在教師專業成長上增益不淺。此計劃為期兩
年，學生可利用電腦或不同平板電腦進行網上學習遊戲「閱讀大挑戰」，
學生家中電腦如有瀏覽器Google Chrome、Firefox 或 Safari，
瀏覽效果最為理想。

明報專欄作家主持學生及家長講座

學校邀請明報專欄作家
譚麗霞女士(Ms Lisa Tam)
於2014年4月2日(三)下午2:30~3:30
主持講座：「從閱讀中學習寫作」。
譚麗霞女士為明報《教得樂》
及《Smarties PowerEnglish》專欄作家，
亦是多本書籍的作者，如想先睹為快，
請馬上到書局或圖書館搜尋譚麗霞女士以下著作。

譚麗霞女士(Ms Lisa Tam)最新訂價資料

P.7

Major findings

Top Ten Best Websites

2013-2014	2014-2015	2015-2016
7th	3rd	2nd

The uprising of boy achievers
Positive impact on students with ASD

Autism Spectrum Disorders (ASD)

USA, UK and Malaysia

Image source: https://www.exitcompanion.com.au/how-to-increase-the-value-of-your-business-by-71/

USA	UK	Malaysia
1:88	1:100	1:625

Fig. 1   Children with ASD in USA, UK and Malaysia.

Hong Kong

 ᵡ

Source: http://www.asie360.com/prenoms/prenoms/l13-pays-tibetains.html

Source: https://it.dreamstime.com/stock-footage-il-segno-femminile-gira-video44015238

90 :10000	Primary Schools	Secondary Schools	Tertiary Education Level
	2840	1310	11

Fig. 2. Children with Autism in 2002

Fig. 3 The number of students with ASD attending Hong Kong public sector ordinary schools in the 2012/13 academic year.

High Functioning Children on Autism Spectrum

Gifted@ASD

Twice Exceptional

Asperger

- ▶ Positive experiences
- ▶ Optimum experiences

Improvements on Children with ASD

Academic Performance

Reading Comprehension Abilities

Reading Interest
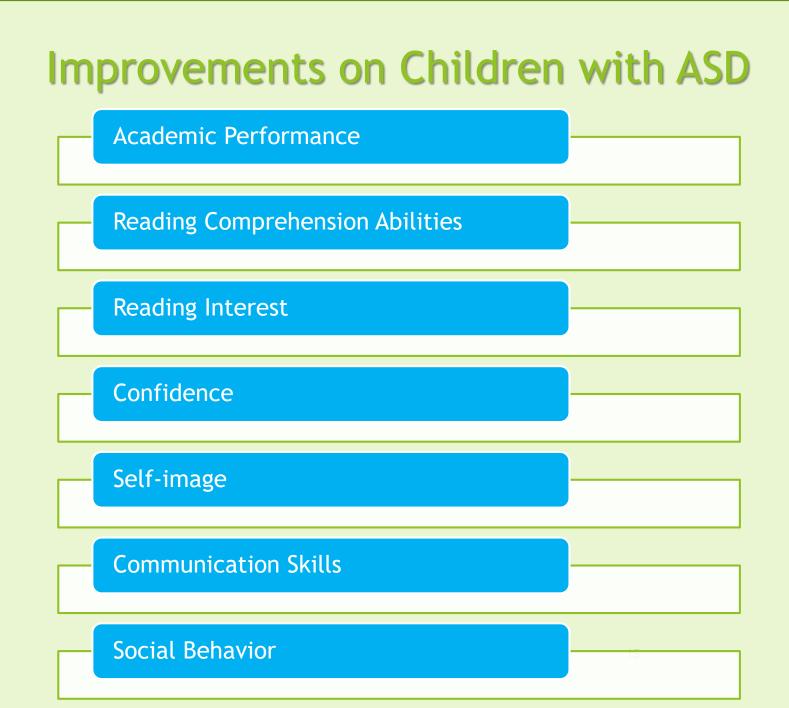
Confidence

Self-image

Communication Skills

Social Behavior

Case Studies

Image source: http://www.publichealth.lacounty.gov/mch/cah/Childhood%20Obesity%20Prevention.htm

The First Success Story

Image source: http://bigdoor.com/gamification/

The Second Success Story

Image Source: http://cliparts.co/cartoon-friendship

The Third Success Story
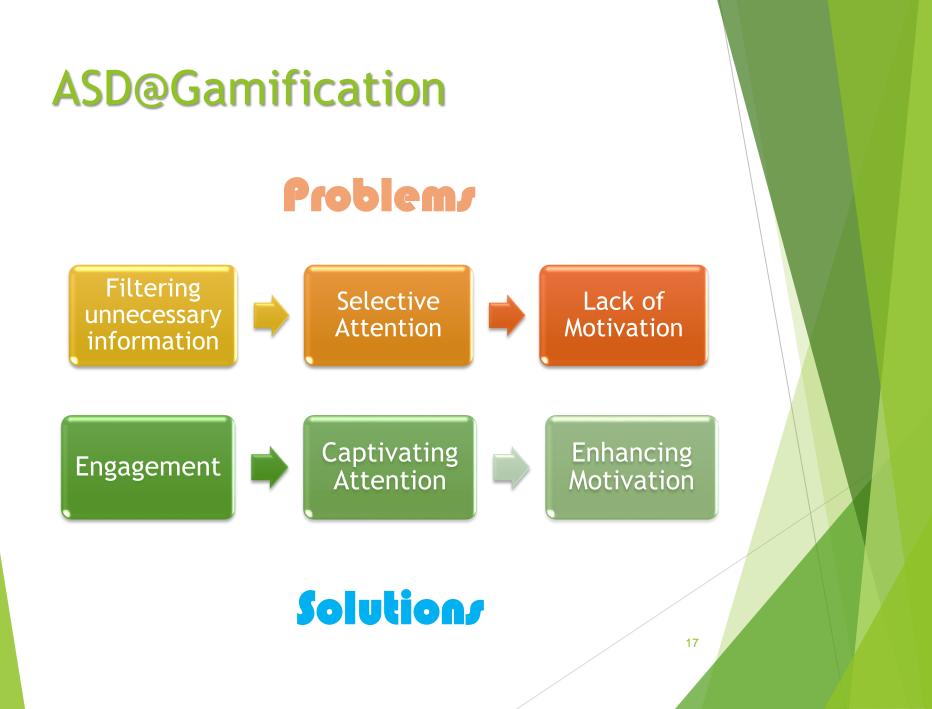
16

Image Source: http://www.thereadingstudio.com.au/

ASD@Gamification

Problems

Filtering unnecessary information	→	Selective Attention	→	Lack of Motivation

Engagement	→	Captivating Attention	→	Enhancing Motivation

Solutions

REWARD   LEARNING   GOAL

A Look into the Future

GAMIFICATION

ACHIEVEMENT   CHALLENGE   SKILL   USER ENGAGEMENT

References

1. American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders : DSM-5.* Arlington, VA : American Psychiatric Association.
2. Cai, Y., Chia, N.K.H., Thalmann, D., Kee, N.K.N., Zheng, J. and Thalmann, N.M. (2013). Design and development of a virtual dolphinarium for children with autism. *IEEE Transactions On Neural Systems And Rehabilitation Engineering,* 21(2), 208-217.
2. Centers For Disease Control And Disorder (2012*), Prevalence of Autism Spectrum Disorders — Autism and Developmental Disabilities Monitoring Network,* 14 Sites, United States, 2008 *Surveillance Summaries,* March 30, 2012 / 61(SS03);1-19, Retrieved Apr 11, 1016 from http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm?s_cid=6103a1_w
3. Chan, M.Y.H., Chu, S.K.W., Mok, S.W.S., Tam, F. (2015). Fostering interest in reading and strengthening reading comprehension ability of primary school students using a children's literature e-quiz bank on the cloud. Paper presented at the Quality Education Fund Project Seminar: Learning through Gamification: Cultivating a Love of Reading in Primary Students, The University of Hong Kong, Hong Kong, June 30, 2015.
4. Chu, S., Chow, K., Tse, S.K. & Kuhlthau, C.C., (2008). Grade Four Students' Development of Research Skills through Inquiry-based Learning Projects. *School Libraries Worldwide.* 14(1):10-37.
5. Chu, S.K.W., Chan, H., Wong, J., Tavernier. M., Wintermeyer, A., Shen, Z., Zhen, Z., Wang, Q.Y., Wang, X.M. & Wu. W. (2015)."Reading Battle" as a Tool to Improve Primary Student's Reading Habits. *Paper presented at the CITE Research Symposium 2015, The University of Hong Kong, Hong Kong.*
6. Chu, S. K. W., Tavares, N., Chu, D., Yee, H. S., Chow, K., Siu, F., & Wong, M. (2012). *Developing upper primary students' 21st century skills: Inquiry learning through collaborative teaching and Web 2.0 technologies.* Hong Kong: Centre for Information Technology in Education, Faculty of Education, The University of Hong Kong.
7. Creswell, J. W. (2007). *Qualitative inquiry and research design: choosing among five approaches.* Thousand Oaks, CA: Sage Publication.

8 . David Simmons (2014). A Review of Serious Games for Children with Autism Spectrum Disorders (ASD). In Minhua Ma, Manuel Fradinho Oliveira, Jannicke Baalsrud Hauge (eds.), *Serious games development and applications : 5th international conference, SGDA 2014, Bremen, Germany, October 9-10, 2014 : proceedings*. New York : Springer.

9. Denning, Christopher B. (2013). "Supporting students with Autism Spectrum Disorders in Inclusive Settings: Rethinking Instruction and Design", *Electronic Journal for Inclusive Education, 3* (1).

10. Department of Health/Child Assessment Services (n.b.). *Autism Spectrum Disorders*. Retrieved Oct. 23, 2016 from http://www.dhcas.gov.hk/english/health_pro/files/SeriesII_ASD_Eng_Text.pdf

11. Deterding, S., Sicart, M., nacke, L., O'Hara, K. & Dixon, D. (2011). Gamification: using game design elements in non-game contexts. In *Proceedings of CHI 2011 Workshop Gamification: use game design elements in non-game context*, Vancouver, 2-5.

12. Fullan, M. & Hargreaves, A. (1996). *What's worth fighting for in your school*. Milton Keynes: Open University Press.

13. Ern, Anna (2014). *The use of gamification and serious games with interventions for children with autism spectrum disorder: a systematic review*. University of Twente.

14. Hiniker, A., Daniels, J.W. & Williamson, H. (2013). Go Go Games: therapeutic video games for children with autism spectrum disorders. *IDC*, 463-466.

15. HKSAR Government (2013). *Legislative Council Panel on Education. Subcommittee on Integrated Education. Services provided to Students with Austism Spectrum Disorders, Speech and Language Impairment and Emotional and Behavioural Difficulties* (LC Paper No. CB(4)677/12-13(01)). Retreived Apr 14, 2016 from http://www.legco.gov.hk/yr12-13/english/panels/ed/ed_ie/papers/ed_ie0527cb4-677-1-e.pdf

16. Krashen, Stephen D. (2004). *The power of reading: insights from the research*. Westport, Conn. : Libraries Unlimited ; Portsmouth, NH : Heinemann.

17. Lokhorst, Sarah (2014). *The use of gamification in interventions for children with Autism: a systematic review* . University of Twente.

18. NHS (2016). *Autism spectrum disorder (ASD)*. Retrieved Apr 11, 2016 from http://www.nhs.uk/conditions/autistic-spectrum-disorder/pages/Introduction.aspx

19. Noor, H., Sharhbodin, F., Pee, N.C. (2012). Serious game for Autism children: review of literature. *World Academy of Science, Engineering and Technology* 64, 648-652.

20. The University of Iowa (2008), *The Packet of Information for professionals: The Giftedness with Autism*. Retrieved Nov 10, 2016 from http://www2.education.uiowa.edu/belinblank/pdfs/pip.pdf

21. Wu, W.W.Y., Chu, S.K.W., Chan, H., Wong, J., Tse, S.K., Tavares, & Mok, S.W.S. (2014). Strengthening students' reading comprehension ability (both Chinese and English) through developing children's literature e-quiz bank on the cloud. Paper presented at *19th International Education & Technology Conference*, Hong Kong.

The End

校本調查結果
School Survey Results

1. 94%二至四年級學生認為「閱讀大挑戰」能提升閱讀理解能力。

   94% of the participants recognized that Reading Battle could improve their reading comprehension

2. 83%二至四年級學生認為在本年度下學期的閱讀理解功課或評估分數有進步。

   83% of the participants believed that their reading comprehension homework/assessment scores in the second semester of this school year 2014-2015 were improved.

3. 94%二至四年級學生認為「閱讀大挑戰」的兒童圖書有趣。

   94% of the participants agreed that Reading Battle had interesting children literature collections.

4. 84%二至四年級學生認為「閱讀大挑戰」能提升閱讀興趣。

   94% of the participants thought that Reading Battle could enhance their interest in reading.