Effective, But Too Enjoyable? Japanese University Students' Attitudes Towards Digital Game-Based Language Learning

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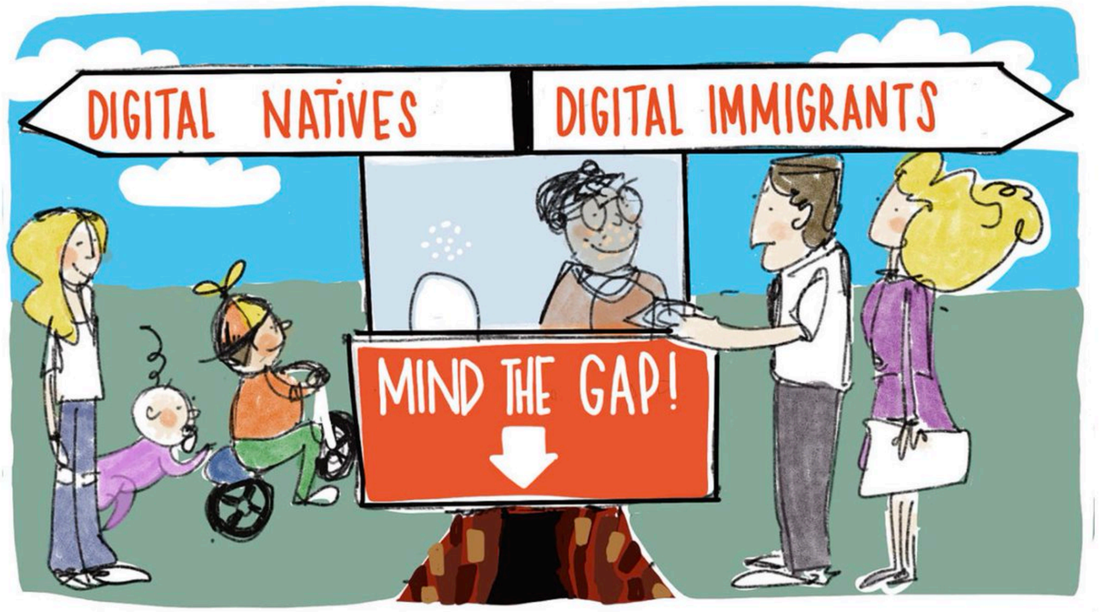
Language Learning with Digital Games

- DGBLL - using digital games as a means of language learning
- An idea that has been around since the early days of CALL
- Rationale for using digital games for language learning:
    1. Playing games can facilitate language acquisition
    2. Good digital games are enjoyable, thus engaging (thus good for learning)
- Substantial body of research now supports point 1 (two meta-analyses: Dixon et al., 2022; Peterson et al., 2020)
- Massive popularity of digital games attest to point 2

What Do Learners Think?

- Growing acceptance among CALL practitioners of (analogue and digital) games for in-class language teaching activities (?)
- Younger generations of “digital natives” (Prensky, 2001)



What Do Learners Think?

- But do learners really want to play games in the classroom?
- Do they think DGBLL can be an effective and efficient approach?
- Could factors such as cultural context or gender influence attitudes?
- Positive learner attitudes towards tasks and curriculum in the language classroom → more positive learning outcomes (Masgoret & Gardner, 2003; Dörnyei, 2009)
- Therefore important to understand (and if necessary try to influence) learner attitudes towards DGBLL

Review of the Literature

1) Attitudes on the use of digital games in formal education

- Mifsud et al. (2013) surveyed 1,163 secondary school learners of English in Malta — 79% of learners stated that digital games were useful as learning tools
- Chen and Yang (2013) reported generally positive attitudes after 35 Taiwanese learners of English played an adventure game over 16 weeks
- Bolliger et al. (2015) surveyed 222 learners of English at a private university in Japan — 73% stated that they would take DGBLL courses

Review of the Literature

2) Effects of individual differences on learner attitudes

- Bonanno and Kommers (2008) surveyed 170 learners in Malta — on average, male learners reported very positive attitudes towards educational potential of games, while females reported less positive to neutral attitudes
- Bourgonjon et al. (2010) surveyed 885 secondary school learners in Belgium — male learners reported slightly more positive attitudes towards game-based learning, but level of gaming experience was found to be a much stronger predictor of attitude
- Bolliger et al. (2015) found no significant correlation between gender and attitudes towards DGBLL among their Japanese university student participants

Review of the Literature

Gaps in the existing literature

- Bolliger et al. (2015) collected their data from one elite private university in Japan – they acknowledge that results might thus not be generalisable to Japanese learners across the socio-economic spectrum
- The potential impact of first-hand in-class DGBLL experience on learner attitudes had not been investigated

Research Questions

1. What attitudes and beliefs do Japanese university students hold towards DGBLL?
2. Does first-hand experience with in-class DGBLL affect learners' attitudes and beliefs towards DGBLL?
3. Are certain non-linguistic characteristics of individual learners good predictors of their attitudes and beliefs towards DGBLL?
4. What do learners perceive to be the main advantages and disadvantages of DGBLL?

Methods (Participants)

- 112 Japanese learners majoring in English Studies at a large public university participated in the study (46 males, 66 females; most at CEFR B2 proficiency level)
- Learners were surveyed on their attitudes and beliefs regarding DGBLL, both before and after intervention
- Intervention consisted of six in-class play sessions using the cooperative puzzle game *Keep Talking and Nobody Explodes* (Hofmeyr, 2021; in press)

Methods (Data Collection)

- Bilingual research instrument consisted of an informed consent form, demographic questions, Likert-scale items on attitudes and beliefs, and a small number of open-ended questions
- Demographic questions collected data on the following individual learner characteristics: year group, gender, age, English proficiency level, IT literacy, digital gaming experience
- A adapted version of the TAM was developed to measure attitudes
- The model measured four constructs: (1) general attitude towards DGBLL, (2) attitudes towards effectiveness, (3) efficiency, and (4) enjoyability of DGBLL (Chronbach's alpha internal consistency score > .80 for all four constructs)
- Respondents were also asked to rate on a six-point Likert scale the extent to which they believed DGBLL could improve nine different aspects of SLA

Methods (Data Analysis)

- **Means** and **standard deviations** were calculated for attitude scores
- **Paired samples t-tests** were carried out on pre- and post-intervention attitude means to measure the effects of intervention
- **Independent-samples t-tests** and **Pearson correlation coefficient** analyses were performed to measure effects of individual difference variables on pre-intervention attitude scores
- A **thematic analysis** approach was used to code and analyse responses to open-ended questions

Findings (RQs 1 and 2: Attitudes to DGBLL)

Variable	Baseline	
	M	*SD*
General attitude towards DGBLL	4.92	0.78
Attitude towards effectiveness	4.73	0.77
Attitude towards efficiency	4.36	0.90
Attitude towards enjoyability	5.17	0.64
Potential to improve listening	4.56	0.83
Potential to improve speaking	3.93	1.11
Potential to improve reading	4.42	0.97
Potential to improve writing	3.54	1.09
Potential to improve vocabulary	4.96	0.82
Potential to improve grammar	3.95	1.06
Potential to improve pronunciation	4.16	1.02
Potential to improve spoken fluency	3.98	1.18
Potential to improve practical communication	4.23	1.16

- Pre-intervention mean attitudes towards DGBLL already positive
- Pre-intervention beliefs regarding potential of digital games to facilitate aspects of SLA generally positive

Participants' attitudes towards aspects of DGBLL before intervention

Note. $N = 112$. Scale ranging from 1 — strong negative attitude to 6 — strong positive attitude.

Findings (RQs 1 and 2: Attitudes to DGBLL)

Variable	Baseline		Post-intervention		*t*(111)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
General attitude towards DGBLL	4.92	0.78	↑4.98	0.73	-0.788	.432	0.773
Attitude towards effectiveness	4.73	0.77	↑5.02	0.83	-3.846	<.001	0.805
Attitude towards efficiency	4.36	0.90	↑4.83	0.90	-6.061	<.001	0.830
Attitude towards enjoyability	5.17	0.64	↑5.37	0.70	-3.205	.002	0.663
Potential to improve listening	4.56	0.83	↓4.43	1.05	1.347	.181	1.052
Potential to improve speaking	3.93	1.11	↑5.00	0.95	-10.117	<.001	1.121
Potential to improve reading	4.42	0.97	↑4.53	1.09	-0.879	.381	1.290
Potential to improve writing	3.54	1.09	↓3.30	1.29	1.692	.093	1.452
Potential to improve vocabulary	4.96	0.82	↓4.70	0.97	2.798	.006	1.013
Potential to improve grammar	3.95	1.06	↓3.57	1.11	3.186	.002	1.246
Potential to improve pronunciation	4.16	1.02	↓4.08	1.08	0.636	.526	1.337
Potential to improve spoken fluency	3.98	1.18	↑4.62	1.11	-4.621	<.001	1.452
Potential to improve practical communication	4.23	1.16	↑5.04	1.10	-6.206	<.001	1.385

*Participants' attitudes towards aspects of DGBLL before **and after** intervention*

Note. $N = 112$. Scale ranging from 1 — strong negative attitude to 6 — strong positive attitude.

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Findings (RQs 1 and 2: Attitudes to DGBLL)

- Significant increase in learners' mean positive attitudes towards the effectiveness, efficiency, and enjoyability of DGBLL after intervention
- Significant increase in learners' belief in the potential of digital games to improve L2 speaking skills, spoken fluency and practical communication
- Significant decrease in learners' belief in the potential of digital games to improve L2 vocabulary and grammar
- Results clearly affected by choice of game (i.e. a cooperative game that elicits spoken communication), but also demonstrates how first-hand in-class experience of DGBLL can shape learners' attitudes towards game-based pedagogy

Findings (RQ 3: Individual Characteristics)

- Correlation tests were only performed between individual learner characteristic variables and **pre-intervention** attitude scores
- No significant correlations were found between the variables of year group, gender, age, and English proficiency, on the one hand, and any of the attitude variables, on the other
- Significant positive correlations were found between the variables of IT literacy and digital gaming experience, and several measures of attitude (correlation degree moderate for enjoyability, small for other attitude variables)

Findings (RQ 4: Perceived Pros and Cons)

	Pre-intervention	%	Post-intervention	%
Perceived advantages of DGBLL	1) enjoyment	61.82	1) enjoyment	73.56
	2) ease and comfort	25.45	2) effectiveness for SLA	11.49
	3) positive effect on motivation	17.27	3) positive effect on motivation	10.34
	4) effectiveness for SLA	11.82	4) ease and comfort	6.90
	5) exposure to practical or authentic language	10.00	5) social dimension	2.30
Perceived disadvantages of DGBLL	1) ineffectiveness for SLA	31.96	1) ineffectiveness for SLA	30.88
	2) limited quality and range of language	18.56	2) limited quality and range of language	13.24
	3) health concerns	14.43	3) opportunity to avoid learning	8.82
	4) learners' negative perceptions of games	7.22	4) health concerns	8.82
	5) opportunity to avoid learning	6.19	5) inefficiency for SLA	7.35

Five most commonly perceived advantages and disadvantages of DGBLL reported by participants before and after intervention

Note. Open-ended questionnaire items were optional and were not completed by all learners. Percentages indicate proportions of complete answers to each questionnaire item related to the advantage or disadvantage stated. Pre-intervention advantages $n = 110$. Post-intervention advantages $n = 87$. Pre-intervention disadvantages $n = 97$. Post-intervention disadvantages $n = 68$.

Findings (RQ 4: Perceived Pros and Cons)

- Participants were asked to describe advantages and disadvantages of DGBLL in open-ended format
- The **enjoyability** of learning with digital games was by far the most frequently cited advantage (pre: *62%, post 74%)
- A substantial number of respondents explicitly mentioned the **positive effects of games on learners' motivation** (pre: 17%, post: 10%)
- **Ease and comfort**, **effectiveness for SLA**, and **exposure to authentic L2** were other advantages mentioned by ten or more learners

*Percentages have been rounded to the nearest whole number.

Findings (RQ 4: Perceived Pros and Cons)

- About a third of learners (pre: 32%, post: 31%) expressed **doubts about the effectiveness** of using digital games for language learning
- Surprising finding, given high average scores on attitudes measures for effectiveness and efficiency variables
- “When the game becomes the main focus, one deviates from the true goal of learning.” (Sense that learning and fun are fundamentally incompatible? Guilt?)
- Other concerns mentioned by ten or more learners include **limited language exposure** in games and **negative effects on physical and mental health**

*Percentages have been rounded to the nearest whole number.

Summary

- Prior to intervention, **learners already held generally positive attitudes and beliefs towards the potential of DGBLL**, supporting findings of earlier studies and strengthening generalisability of Bolliger et al. findings regarding learner attitudes in Japan
- Post-intervention survey results demonstrate that **first-hand in-class experience with DGBLL can impact learner attitudes and beliefs**
- Learners with a **higher degree of IT literacy** and learners with **more digital gaming experience** were more likely to hold positive attitudes and beliefs towards DGBLL, while **gender** was not found to influence attitudes directly, supporting findings by Bourgonjon et al. (2010) and Bolliger et al. (2015)
- Learners' perceptions of the advantages and disadvantages of DGBLL were similar to those reported by Bolliger et al. (2015), with **enjoyment** and **effects on motivation** viewed as the mosts important advantages and with concerns raised about **ineffectiveness** and **possible negative effects on health**

Thank you for your attention!

Any questions or comments are welcome.

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References

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