Research paper

What do secondary teachers think about digital games for learning: Stupid fixation or the future of education?

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ARTICLE INFO

ABSTRACT

Digital games can support learning across many levels and fields of education. This article shares findings from a study of Australian high school English teachers designed with a mixed response questionnaire about using digital games in the classroom. The findings identified polarised teacher perspectives on the role of gaming in formal curriculum, tension in teachers' ideal and enacted use of digital games, and a need for in-practice professional development on digital games. Implications include the need to optimise digital games use for learning in teaching and teacher education, and to address perceptions on the validity of gaming for classroom learning.

1. Introduction

This article draws on mixed methods research conducted across Australia that explored teachers' views on the use of digital games. This is vital because teachers' use of digital games in their classroom has been shown to enhance students' creativity, learning engagement, critical thinking, language development, and problem-solving skills (Adachi & Willoughby, 2013; Beavis et al., 2015; Fan et al., 2020; Hung et al., 2018; Mills & Brown, 2022). As teachers' attitudes to digital games influence whether they are used in the classroom, it is important to explore teachers' views towards digital games. Recent research suggests teachers struggle to implement digital games-based learning (DGBL) into their classrooms for a variety of reasons (eg. resourcing, lack of knowledge and confidence, undervaluing) (Alsuhaymi & Alzebidi, 2019; Kaimara et al., 2021; Øygardslia, 2018; Rüth et al., 2022). A recent systematic review (Nash & Brady, 2022) into the incorporation of games in the English language arts classroom suggests integration of games in the classroom continues to be an emerging area of research; critical games analysis was only visible in a limited number of classroom programs; and teachers did not feel they had the knowledge required to incorporate games into their classrooms.

Digital games are synonymously called video, computer, or electronic games in the literature, while gaming pedagogy is a discourse that has promoted debate and contention in education (Kaimara et al., 2021; von der Heiden et al., 2019). In this article we define digital games to include any game that is 'digitised'; in other words, games that contain multimedia content or combinations of various media elements such as text, hypertext, graphics, images, video, and animation. We draw on Prensky (2007) and recent conceptualisations of digital games-based learning (DGBL), and its potential, to construct our own definition of DGBL (Beavis et al., 2015; Kaimara et al., 2021). We view DGBL as providing a pedagogical space in which cognitive and critical learning can take place utilising tools (digital games) that are engaging and connected to the lifeworlds of a technological generation.

This article draws on Gee's (2015) conceptualisation of ideology, which argues that "humans always have theories and never really make claims without them" and that these theories "ground beliefs and claims to know things" (p. 11). These theories and beliefs are represented in language and illustrate the value teachers have about specific cultural resources, or what Gee calls social goods (Gee, 2011a, p. 118), such as DGBL. Despite a growing body of evidence suggesting that digital games are social goods with significant positive educational benefits for students (e.g. Fan et al., 2020; Marsh & Yamada-Rice, 2018; Mills & Brown, 2022; Scholes et al., 2022, pp. 1–16), and despite the design of professional learning tools to assist teachers (e.g., Beavis et al., 2015; Gee, 2005, 2011b), there continues to be a reluctance to integrate DGBL into classrooms (Alsuhaymi & Alzebidi, 2019; Hayak & Avidov-Ungar, 2020; Kaimara et al., 2021). Given that DGBL, and its educational benefits have been a topic of research for at least two decades (e.g., Beavis, 2004; Gee, 2005), it is important to explore teacher voices to understand if and why tension exists for teachers concerning the uptake of DGBL.

This article reports on findings from a survey of 201 high school

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English teachers from diverse schooling sectors and states across Australia, exploring tensions for teachers when facilitating or considering potential up-take of DGBL. Participants taught the subjects English and Literature, and a small number taught the subject English as an Additional Language. To investigate teachers' views on the role of DGBL in the classroom we asked three interrelated research questions.

1. How do teachers position digital games in education?
2. What are teachers' actual and intended uses of digital games in education?
3. How do teachers gain professional knowledge about digital games?

Understanding teacher perspectives of DGBL is efficacious because increased adoption of games-based learning can be facilitated by changing teacher attitudes (Assaf et al., 2021).

To answer these research questions, we drew on participants' responses to open and closed questions about their positioning of games in curriculum and their associated practices as addressed in a section of a larger questionnaire. We adopted mixed methodology to analyse complex and multilayered perspectives and extend our understanding of teachers' diversity of opinion (De Lisle, 2011). The findings provide insights into how teachers use digital games in the curriculum, and their sources of professional knowledge about these pedagogies.

2. Background literature

2.1. Teacher attitudes towards the role of digital games in learning

Although a growing number of teachers indicate positive attitudes towards adopting digital games in the classroom (Huizenga et al., 2017), many do not use these games in their own teaching practice. Teachers in the USA, for instance, indicate conflicting attitudes about the use of digital games in K-12 education (Dickey, 2015). These teachers saw value in game-based learning; however, they were concerned about blurring lines between fantasy and reality, and the dangers associated with simulation experiences. Other research also highlights these tensions for USA teachers, and issues with the unregulated and unmonitored promotion of educational games (Blumberg, et al., 2019). Discovering similar conflict, Alsuhaymi and Alzebidi (2019) in Saudi Arabia found that despite positive predispositions, teachers perceived that there were barriers to using digital games, such as a lack of facilitating conditions and an absence of games suited to Saudi culture and social norms. This highlights exclusionary cultural representation issues in some games (Chakraborti et al., 2015), and the potential for teachers to use DGBL to critically interrogate cultural hegemony.

According to Hayak and Avidov-Ungar (2020), a teacher's career stage can be a differentiating variable influencing attitudes towards integrating digital games in teaching and learning. In their Israeli study, advanced and late-career teachers perceived more technical and pedagogical barriers to implementing DGBL, while those early in their careers saw pedagogical factors as encouraging the use of digital games. In Greece, pre-service teachers perceived a lack of financial resources and ICT training as barriers to implementation of DGBL (Kaimara et al., 2021). Many of the pre-service teachers also displayed distrust in the pedagogical value of digital games for learning.

2.2. Significance of digital and games-based literacy for teacher education

Recognition that digital literacy—skills and competencies needed to use digital technologies—is fundamental to student success, has been highlighted in Australia in the new Digital Literacy Skills Framework (Department of Education Skills and Employment, 2020). Digital literacy sits alongside the core skills of learning, reading, writing, oral communication, and numeracy. Studies on teachers' beliefs about the value of technology and their capacity to effectively engage with and integrate digital learning, however, is inconsistent (see, for example,

Kervin et al., 2019). Many teachers believe that digital games should not be used as the main instructional activity but should instead be used as a reward for getting work done, or to support students with special needs (Kenny & McDaniel, 2011). There are also concerns raised in literature internationally that some digital games are exclusively recreational and are not fit to challenge or engage students who do not consider them as 'real' schoolwork (Øygardslia, 2018). This raises questions about teachers' selection of games for the classroom (All, et al., 2021), and what elements or design features make a game worth studying (Ishak et al., 2022).

Adding to the complexity is the focus on performativity in Australia and other countries. This movement places a premium on testing, grades, and statistics (Lingard et al., 2013), and may disproportionately influence what educators consider important in literacy (Comber, 2012). With a desire to be internationally competitive on league tables (for example, Progress in International Reading Literacy Study (PIRLS) and Programme for International Student Assessment (PISA)), policymakers' interest in student literacy outcomes are often voiced in terms of efficacy, skill level, and the most efficient teaching methods to secure the best test results (Hardy, 2019). The resultant increasingly prescriptive nature of the curricula has implications for the autonomy of teachers, schools, and school authorities (Hardy, 2015). Such autonomy is further compromised by broader processes whereby weaker educational outcomes on national tests impact teachers' work and may subsequently narrow curriculum to focus on didactic teaching of practice test items (Comber & Nixon, 2009). These factors may act as a contextual bottleneck which reduces teachers' desire to integrate innovative games-based learning into their classrooms.

2.3. Professional learning and participation in digital gaming

Teachers' positive attitudes and self-efficacy concerning the use of digital games in the classroom can be enhanced through professional learning and participation in digital gaming. Esteban-Guitart and Gee (2020) argue that to move the brain out of 'automatic pilot' and into learning mindsets, people need to access learning experiences that evoke "sensations, cognitions, emotions, attentional processes, as well as processes of appreciation and assessment" (p. 6). In the context of DGBL, An and Cao (2017) found that teachers' participation in game design experiences increased their understanding and appreciation of the benefits of digital games for developing students' higher order thinking and 21st century skills and made learning engaging and enjoyable. Other research confirms that teachers' limited game playing experience impacts their abilities to implement DGBL pedagogies (Kaimara et al., 2021). Similarly, an online professional development course on the design of DGBL resulted in teachers feeling more comfortable using DGBL and increased their belief that digital games support students' development of higher order thinking, problem solving, decision making, and collaboration skills (An, 2018).

When teachers are supported to facilitate DGBL, positive changes in teaching practices and student learning are visible. In the Australian context, games-based learning was investigated through the Innovating with Technology Research Trials (Department of Education and Early Childhood Development [DEECD], 2011). While this approach to learning was new for many of the teacher participants, at the conclusion of the trial, they recognised the value of games across a range of learning areas with significant changes in the teacher/student relationship. The majority of teachers believed that using games in teaching and learning had led to a more student-centred environment. These trials reportedly led to increased opportunities for students to take responsibility, while games-based learning strategies fostered inquiry and problem-solving skills, and opportunities for students to work independently in self-paced activities.

2.4. Legitimacy of digital games for curriculum practice and the English curriculum

It is important to preface the discussion of this current study by conceptualising the idea of 'text'. Postmodernism changed the way arts fields conceptualised 'text', and this article refers to digital games as text due to the influence of postmodernism on literacy. Across the western world, text is defined by curriculum authorities, teaching subject associations, educational policy makers, and educators in the arts as anything that can be interpreted for meaning, such as written, spoken, multimodal, digital, and audio genres. As curriculum definitions have viewed 'text' in this way for decades, the expanded understanding of 'text' is recognised in literacy and arts disciplines. [See, for example, definitions by the Australia's Victorian Curriculum Assessment Authority (2021) and a blog published on the USA's National Council of Teachers of English website (Fink, 2014)].

This revised understanding of text is important in two educational theories that have had significant impact internationally on English curriculum and literacies: critical literacies, and multiliteracies. While these theories were the focus of a section of the questionnaire, they are not the focus of this paper, however, participant understanding of these theories contextualised their responses to questions on digital games. Critical literacy theory has the common goal of promoting social justice and equity through challenging and interrogating philosophical, political, and/or ideological assumptions in textual representations of society (Luke, 2012). The theory of multiliteracies reconceptualises the way we engage with texts as consumers, creators, and co-creators, and argues for the need to expand definitions of literacy practices to account for an increase in multiplicity of texts and practices in the context of cultural and linguistic diversity (Cazden et al., 1996). Texts are multimodal in that they can include multiple modes such as audio, linguistic, spatial, visual, and/or gestural (Cope & Kalantzis, 2000; Mills et al., 2022).

From an understanding of digital games as texts, gaming practices include more than simply playing a game itself, involving students in literate cultures of para-textual worlds, such as reading gaming wikis, fan sites, game-related books, and magazines, chatting or messaging in-game, participating in gaming tutorials, creating animations, and gaming videos, to name a few (Beavis, 2022; Gutierrez & Beavis, 2012; Scholes et al., 2021). Significant learning and motivational gains for students have been documented in curriculum initiatives aimed to reduce disconnections between students' experiences, identities, values, learning needs, and patterns of engagement with new media across social spaces (Beavis et al., 2015; Bulfin & North, 2007; Stone et al., 2019). In terms of academic efficacy and digital games, researchers have found that strategy-based gaming promotes self-reported problem-solving skills that indirectly predict academic grades (Adachi & Willoughby, 2013). For example, elementary students who engaged in virtual worlds, such as Quest Atlanta, showed significant learning over time in science and social studies (Mills, 2010).

More recently, researchers have examined the literacy potentials of virtual and augmented reality games in language arts curriculum. Augmented reality platforms offer new ways for students to create and overlay virtual content that is anchored in the real or immediate world (Marsh & Yamada-Rice, 2018). Augmented reality games have been shown to enhance early literacy learning, with clear benefits for focusing learners' attention on unfamiliar words, letters, and vocabulary, while supporting memory (Fan et al., 2020). Likewise, virtual reality applications have been used to support students' creative multimodal designing of texts that are immersive and three-dimensional (Mills & Brown, 2022).

Within the English curriculum, digital games have been conceptualised as legitimate texts for literacy practices. These include reading, writing, critiquing, and interacting with narratives and have many commonalities with school-based literacy practices (Apperley & Walsh, 2012; Lowien, 2022). Many digital games have complex narrative scripts and plots, with clear character development, while game play typically requires the interpretation of cultural contexts and knowledge, and the application of cultural capital specific to the game (Beavis et al., 2015; Gee, 2011b). Digital gaming is a useful context for critiquing texts and textual practices, with many current curriculum and pedagogical models developed and researched (Bacalja, 2018; Beavis, 2022; Chen et al., 2020; Jackson et al., 2022).

However, historically in arts-based subjects, including English curriculum and practice, the use of popular texts has created tension. In English, some critics devalue popular culture, media, and digital texts for their quality and worthiness (Snyder, 2008). These critiques create a hierarchy of texts of 'quality' and a 'canon' of valued texts (Misson & Morgan, 2006), which tends to include classic literature such as Shakespearean texts, as part of a cultural heritage tradition. Theoretical movements, such as postmodernism and critical theories (for example, feminism and critical race theories), challenge these ideals.

3. Method

3.1. Questionnaire design and data collection

The questionnaire aimed to understand how a national sample of Australian high school English teachers valued and viewed the use of critical literacies, multiliteracies, and digital games for English classrooms. As the research investigated how these teachers defined each of these aspects of teaching English, and their interpretation of implementation, it was important not to influence their definitions. Hence, no definitions of concepts were provided to the research participants.

The questionnaire was designed using Qualtrics software (Qualtrics, 2015) and included 46 questions, with some additional follow-on items that were dependent on the participants' response to the main question stem. The questionnaire was reviewed by expert academics in the fields of critical literacies, multiliteracies, and digital games. It was delivered online in 2015, with introductory consent information and was anonymous. No items forced responses and were completed at the discretion of the participants, which explains why items had different response rates. The design aimed to provide a user-friendly format, avoidance of multiple responses, efficient data management, and anonymity of the participants (Hai-Jew, 2019). Time and efficiency were also a consideration in design, as most participants took between 30 and 50 min in aggregate to complete up to 46 items and were able to do so intermittently over multiple sittings. The section on digital games—the focus of this paper—contained 11 questions taking 5–15 min to complete.

The questionnaire included a mixed response design with closed questions enabling comparison and statistical analysis of the teachers' responses, and open-ended questions which contextualised the teachers' responses. For example, one of the closed response questions asked: "Do you think digital games are legitimate texts to use in the classroom? – yes, no, not sure", which was followed by the open-ended question "Explain your response to the above question:". This was an 'action-oriented' questionnaire, hence, it included 'yes/no/not sure' answers to know whether teachers do/intend to include practices/pedagogies on digital games, or not, or lacked awareness (which suggests uncertainty and lack of knowledge about these areas). This was also why it was important to contextualise the yes/no responses with qualitative responses. This mixed response design enabled the use of both quantitative and qualitative analysis tools to gain a deeper understanding of the phenomena (McKim, 2017). For a full copy of all items used in the original Qualtrics survey, see the csv file in our Open Science repository osf.io/9tf28.

The questionnaire was designed to answer three research questions noted in the introduction.

1. How do teachers position digital games in education?
2. What are teachers' actual and intended uses of digital games in education?
3. How do teachers gain professional knowledge about digital games?

The first research question was asked to compare teachers' perspectives on the value of digital games in education. The second research question differentiated between teachers' intended and actual use of digital games for teaching and learning. Finally, the third research question asked how teachers engage in new knowledge about using these games in the classroom.

3.2. Participant sampling and recruitment

Prior to recruiting participants, the project was approved by the Human Research Ethics Committee at the first author's university [201500023E]. A convenience method of distribution for sampling was selected to have national representation of English teachers' views on digital games, consistent with the questionnaire aims (Frey, 2018). The project and link to the questionnaire was advertised through each state and territory's high school English Teachers' Association newsletter, and via their email databases. The instrument included participant consent information and approval. No identifiable data on participants was collected.

The sample consisted of 201 teachers. Most teachers self-identified as female (75%), the largest cohort had been teaching for 20+ years (37%), were currently teaching across multiple secondary year levels (7–12), from a mix of all Australian states and territories except Tasmania, working in metropolitan schools (76%), situated within the public-school sector (53%), and working in co-educational schools (78%). Further demographic information is detailed in Table 1.

The distribution of population in sex, time teaching, location, sector, and type of school represents a mixture of the broader Australian educational demography, which is a female-dominated profession with

Table 1
Key demographics of Participants: Australian English teachers.

Baseline characteristics	Frequency of responses (n)	Percentage of responses (%)[a]	Cumulative percent of responses (%)
Sex	N	%	Total %
Female	151	75.12	75.12
Male	50	24.88	100.00
Time teaching	N	%	Total %
1–2 years	26	12.94	12.94
3–5 years	20	9.95	22.89
6–10 years	28	13.93	36.82
10–15 years	35	17.41	54.23
16–20 years	18	8.96	63.19
>20 years	74	36.82	100.00
State/Territory	N	%	Total %
NSW	30	14.93	14.93
VIC	20	9.95	24.88
QLD	42	20.90	45.78
WA	46	22.89	68.67
SA	47	23.38	92.05
ACT	13	6.47	98.52
NT	3	1.49	100.00
Location	N	%	Total %
Metropolitan	153	76.10	76.10
Regional/remote	48	23.90	100
Sector	N	%	Total %
Catholic	36	17.91	17.91
Independent	58	28.86	46.77
State	107	53.23	100.00
Type of school	N	%	Total %
Co-educational	156	77.61	77.61
Single sex boys	17	8.46	86.07
Single sex girls	28	13.93	100.00
Total	201	100%	100%

[a] While all demographic characteristics in this survey included responses from all 201 teachers, the subsequent survey items were 'opt-in' and teachers could skip to the next item without answering the previous item. This meant that the total number of respondents per item varied across the survey, and results should be interpreted with attrition rates and/or self-report biases in mind. For example, n = 119 fully and n = 82 partially completed the survey items.

more state and co-ed schools located in metropolitan centres (see Australian Bureau of Statistics, 2020). Table 1 lists the states and territories in order of population from most to least. The most densely populated parts of Australia include New South Wales (NSW), Victoria (VIC) and Queensland (QLD). The states of Western Australia (WA) and South Australia (SA) had strong representation in the survey, despite being less densely populated. ACT (Australian Capital Territory) has a quarter of the population of SA and NT (Northern Territory) has the smallest population in Australia, having half the population of the ACT. This is reflected in the number completing the survey from those territories.

3.3. Data analysis tools

The analysis of the results involved a two-step process. First, frequency counts were conducted to identify and compare trends in the teachers' attitudes, self-reported behaviours, and perceptions on digital games in educational settings. Second, we employed qualitative analysis to provide context and depth as mixed methods analysis enables a "deeper, broader understanding of the phenomenon than studies that do not utilise both a quantitative and qualitative approach" (McKim, 2017, p. 203). Our analysis enabled us to compare multi-layered teacher ideologies on digital games. The qualitative component of our analysis aimed to enrich understandings of the trends in the quantitative results by exploring justifications, identifying underlying themes, and juxtaposing positive or negative sentiments. In the qualitative phase we utilised iterative categorisation as our coding process for the open-ended question responses (Neale, 2016).

Initially the data were deductively coded and aligned to each research question drawing on categories from research identified in the literature review on teachers' use of digital games as texts in the classroom (for example, Beavis et al., 2015; Beavis, 2022). We coded the data deductively to understand: i) patterns of language or themes in the teacher's language that positioned digital games/digital games literacy in specific ways, ii) for those who used digital games in their classrooms, how they were used, and iii) sources cited for teachers' professional learning about digital games.

In the coding and analysis processes, a team of researchers applied inductive coding based on issues emerging from the data. For coding consistency, the team used a phenomenographic approach (Åkerlind, 2005) to interpret the responses, and the initial template was adapted with cross checks to ensure agreement was reached across the research team. The team used the sign systems and knowledge building, and politics building analysis tools from Gee's (2011a) work on discourse analysis. The "sign systems and knowledge building tool" (ibid, p. 136) and "politics building tool" (ibid, p.118) work in tandem with each other to explain how the teachers' open-ended responses 'positioned' digital games in the curriculum. Gee defined the sign systems and knowledge building tool as relating to the ways speakers and writers use language to privilege some sign systems and knowledge over others, which in turn privileges some social goods over others. The politics building tool is concerned with the ways language can be used to build (and destroy) social goods. The tables presented below (Tables 2–4) outline the themes for each research question, with examples of the teacher responses for each theme.

3.4. Coding process for qualitative data

3.4.1. Research question 1: how do teachers position digital games in education?

To answer the first research question, we explored responses that represented digital games either positively, negatively, or neutrally, and then applied discourse analysis using Gee's (2011a) theory of politics building and social goods, as explained above. See Table 2 for examples of codes and their descriptors.

Table 2
Themes on teachers' positioning of digital games in education.

Code Name	Code Description	Examples
High negative positioning	Response expresses a highly negative view of video games in education	"I am so over this stupid fixation." "I really hate video games."
High positive positioning	Response expresses a highly positive view of video games in education	"Digital games are the future of education." "If I can facilitate spaces that promote the vibe for best learning and this involves some form of digital game, then I am working towards best practice."
Positive positioning	Response expresses a positive view of video games in education	"They are a text in the same way that advertisements, picture books, films, or novels are texts." "Digital games are one of the many means of creating/ exploring narratives."
Neutral: time, experience, knowledge, technology, teaching support	Response identifies barriers to using digital games in education.	"I know too little about digital games." "Considerable difficulties booking computers." "No room given the requirements and timelines."

Table 3
Coding of teacher response to their uses of digital games in the classroom.

Code Name	Code Description	Examples
Games to improve basic literacy	Response indicates links to 'basics' discourses. The games are used to improve basic literacy.	"Grammar games" "Literacy prompt"
Games to remediate English learners	Response indicates the games are used purely as a tool to engage students who are viewed as low ability or struggling with learning.	"Remediating low ability Year 9 class"
Critical theories	Response indicates links to language commonly seen in critical theories discourses.	"Evaluation of games as valid text" "Literature conceptualisation" "Deconstruction of characters" "Examination of dystopian genre"
Non-specific on matters of pedagogy	Response provides little indication of how the teacher implemented the game/s.	Games use in lower school classes Games used in Year 11

3.4.2. Research question 2: what are teachers' actual and intended uses of digital games in education?

To explore how teachers use or intend to use digital games, we combined responses related to their use and planned use of games as a central teaching focus or as a supplementary text. The use of 'main text' and 'supplementary text' are widely utilised and defined in curriculum documents in Australia, so teachers are familiar with these terms. The coding of qualitative responses for the second research question drew on key paradigms of language and literacy pedagogy that were implicitly or explicitly referenced by the teacher participants (see Table 3). For example, some referenced the use of digital games for practising basic skills. The teaching of English in Australia has been influenced by back-to-basics discourses of literacy, which Cambourne (2006) described as "a 1950's view of reading" (p. 187) because "basics" spelling and grammar is elevated over other dimensions of English literacy learning.

3.4.3. Research question 3: how do teachers gain professional knowledge about digital games?

The qualitative data to answer Research Question 3 included coding

Table 4
Coding of responses to sources of professional knowledge for teachers.

Code Name	Code Description	Example
School Professional Development	Professional learning at their school	"Faculty PD"
English Teaching Association (ETA) conferences/ workshops	Conferences and workshops developed and run by English Teaching Association groups in each jurisdiction or nationally	"Session at ATEA/ALEA" "National Conference" "ETAQ conference"
Authors	Responses listed academic authors on digital games	Repeated authors included Catherine Beavis, James Paul Gee, other authors published in ETA publications
Journals/Newsletters	Journals and newsletters	Mostly published by English Teaching Association
Educational Groups	Online sites or learning communities	"Google for Education"
Higher Education	Completion of higher research degrees in this area	"Masters coursework"
Books	Names of books	"Digital Games: Literacy in Action"

where the teachers sourced their professional knowledge on DGBL (See Table 4).

The analysis of data for Research Question 3 focused on patterns and gaps across the sample in sources of professional knowledge about digital games-based pedagogies in the classroom.

4. Results

4.1. Research question 1: how do teachers position digital games in education?

Our first key area of interest to answer Research Question 1 explored teachers' beliefs about the legitimacy of digital games in the English classroom. This provided an insight into how they positioned digital games as important or otherwise in education. See Table 5 for a summary of the frequency of responses. As detailed in this table, most teachers (58.6%) believe that digital games are legitimate texts to use in English programs, while 27.4% are unsure, and 14% indicated that digital games are not legitimate texts in English programs.

In addition, the data suggested a link between teachers' number of years of teaching experience and the likelihood of showing their support for the use of digital games in the classroom. There was a negative Spearman's rank correlation of -0.12 ($p = .18$) between the number of years teaching (measured across six intervals) and the likelihood of positively affirming the following question: '*Do you think digital games are legitimate texts to use as a part of your English teaching*'. This may suggest that teachers with more experience teaching are less likely to affirm the use of digital games in the English classroom. Given that there was not an equal number of teachers represented across each of the six intervals of experience (per Table 1, row 2), we decided to split the analysis into teachers with 15 or less and teacher with 16 or more years of experience. For the 75 teachers who said 'yes' to '*Do you think digital games are legitimate texts to use as a part of your English teaching*?', they were 33% more likely to have had 15 years or less teaching experience compared to those with 16 or more years teaching experience (see Fig. 1).

Similarly, those who said 'yes' to the question '*Have you used digital games (topic or games) as a main focus in your English program?*' were 260% more likely to have 15 or less years of experience compared to those with 16 or more years of experience. Contrasting this trend, however, we observe those who said 'yes' to the question '*Are you planning to use digital games (topic or games) as a main focus in your English*

Table 5
How teachers position digital games (closed response items only).

Question/Option	Frequency of responses (*n*)	Percentage of responses (%)[a]
Do you think digital games are legitimate texts to use as a part of your English teaching?		
No	18	14.06
Not sure	35	27.34
Yes	75	58.60
Total	128	100%
Do you believe digital games can be used or studied in an English classroom to enhance students' multiliteracies skills?		
No	13	10.17
Not sure	31	24.22
Yes	84	65.63
Total	128	100%
Do you see any links to the use of digital games in subject English in any of the English curriculum documents (i.e., across 7/8–12) in your state/territory?		
No	89	69.53
Yes	39	30.47
Total	128	100%
Can you identify specific statements or sections of the English curriculum document/s that link to the use of digital games?		
Don't have time to find the specific statements or sections, but know they exist	11	28.95
Not sure where, vague recollection of reading something	12	31.58
Yes - Please provide some examples	15	39.47
Total	38	100%

[a] The percentage of total responses represents the percentage of participants who selected that option relative to the total number of respondents for that specific item (not relative to the total sample).

program in the future?' were 13% more likely to have 16 or more years of experience compared to those with 15 or less years of experience - which may indicate that more experienced teachers are not impartial to digital games in the English classroom if based on their intentions rather than their practice.

4.1.1. Open-ended teacher responses on the legitimacy of digital games in English

Responses on the legitimacy of digital games in the English curriculum provoked the most written answers, providing a deeper understanding of the quantitative data, and a justification of why these teachers would or would not include digital games in their teaching. To expand upon the oppositional 'yes' and 'no' responses, this section commences with an exploration of the positive responses in which the language used builds a positive perception of digital games and privileges DGBL as an important social good (Gee, 2011a).

4.1.1.1. Positive teacher responses to legitimacy of digital games in English. The qualitative responses suggested several major themes related to why these teachers argue for the use of digital games. The following response illustrates an example of highly emotive language that we suggest typifies the teacher's alignment within a DGBL advocate discourse:

> I think digital games are the future of education … a medium all students are familiar with, engage in, and enjoy. Students do not read books 'en masse' anymore, yet we as English teachers insist on dragging them kicking and screaming through texts they detest, whilst penalising them for playing the digital games they love. The future is through flipping our classrooms and delivering curriculum through digital games. Personally, I don't think it will happen until the generation that began teaching in the late seventies and early eighties actually retires and leaves education!

Through statements such as the "future of education", "dragging them kicking and screaming," and "penalising them for playing the games they love", this teacher appears to critique traditional cultural heritage discourses that pervade the teaching of English and create a hierarchy of valued texts (devaluing digital games). The response elevates the worth and value of the digital world and DGBL. In the response, the final sentence illustrates frustration with an older generation of teachers and generalises their negative impact on schools' capacity to become future-facing and embrace change. For this teacher, the older generation of teachers seem to be blocking the advocates' opportunities to build the significance of this social good - something imperative for the "future of education". This response also suggests that all students are familiar with, engage with, and enjoy digital games. Overall, the narrative illustrates a passion that some high school English teachers conveyed about using digital games in classrooms of the future, and how restricting classroom activities to traditional narratives misses an opportunity to engage with more contemporary popular media texts.

There were also responses that recognised the complexity of digital games due to their multimodal, intertextual, and networked capacities. For example, the following extract from one teacher represents the multiple dimensions of games:

> Digital games are very much a reflection of socio-cultural values … deliberate attempt to engage their audiences … have a narrative component … are multi-modal … offer new ways of story-telling … influence other literature and film forms … intertextuality rich …
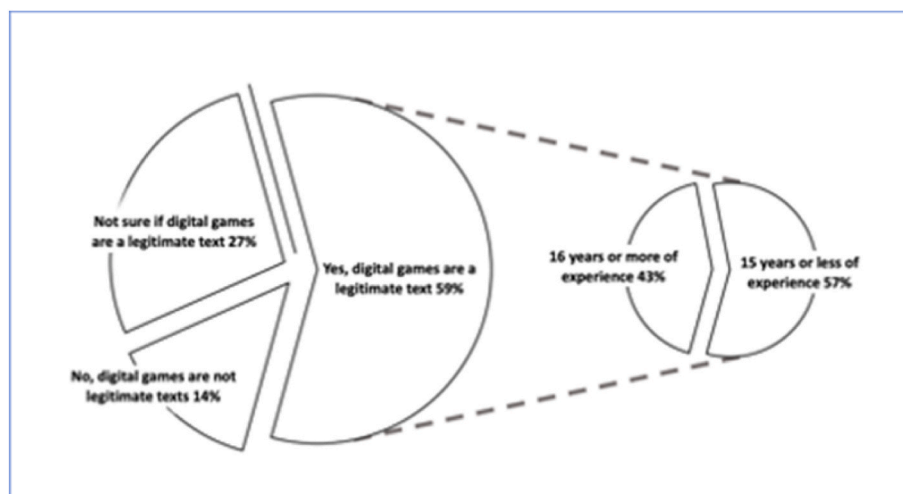

Fig. 1. Pie chart displaying relationship between the belief that digital games are a legitimate text for English teaching and years of experience teaching.

have identifiable genres … reward certain behaviours and condemn others … are value laden … require interrogation, because they invite behaviours from participants quite different from those that we approve of in real life.

The response above highlights the potential to address ideologies and sociocultural impacts and exploring their multimodal and intertextual features with literature and film when integrating digital games into the classroom. In the narrative the participant compares digital games to other commonplace and valued texts, arguing that games have multiple textual features and characteristics that make them valuable for study in the classroom.

The excerpt noted above also emphasises digital games as multimodal texts. Other related responses include statements such as "combination of linguistic, visual, auditory, gestural, or spatial modes" and "opportunity to explore multiliteracy and critical literacies". These references indicate an understanding of multimodal texts, and related theory on multiliteracies, and the ways the use of DGBL aligns with these discourses.

Across the positive responses DGBL is elevated as a social good for inclusion, especially to ensure students are given opportunities to analyse representations of groups and behaviours. For example, one response emphasises games "require some interrogation" to critically analyse some of the "invite[d] behaviours" that may be unacceptable in the "real world". Such trepidation may reflect critical theory and the importance of challenging representations in digital games such as culture, gender, race, and violence, in the classroom. The need for critical interrogation was further evidenced in responses that used concepts from critical theory such as "deconstruct", "player positioning" and "ideologies" which emphasised the importance of critical DGBL in curriculum.

Some teachers identified important nuances of digital game genres, setting them apart from traditional genres. For example, valuing the way digital games have "multiple plot lines", "connectivity between segments", and "immerse students in worlds" as "active rather than passive" users of text. Games were described as networked spaces that, as one participant stated, allow students "to create online identities and collaborate with others". Some mentioned scholars such as Beavis and Gee, explaining how published research has influenced their deeper understandings of games using language from Gee (2018) such as "affinity spaces" and arguing that these digital games spaces "promote the vibe for best learning".

These accounts typify respect for digital gaming as not only valid texts, but as highly valued texts for use in the classroom. Moreover, the latter comment acknowledges the importance of recognising affinity spaces—where online groups belong through intergenerational shared interests. By highlighting the multidimensional complexity of games and the spaces associated with them, these teachers position DGBL as a valued pedagogy.

4.1.1.2. Negative teacher responses to legitimacy of digital games in English. While 58.6% (75 of 128 responses) of participants suggested digital games were legitimate texts, 14.1% (18 of 128 responses) of participants raised concerns about their legitimacy and their comments reflected these sentiments. Many of the comments coded within this theme represent diametrically opposed notions of digital games as the "future of education" and with a deleterious view underscored by a characterisation of DGBL as a "stupid fixation", for example:

I am so over this stupid fixation. Digital games stymie imaginative writing and actually 'flatten' affect in the student's 'voice'. It comes to define their idea of writing and they regurgitate silly game stories that lack any emotional or creative flair. From Year 7 onward it is a downward numbing of imaginative writing ability. English teachers have had the try-hard sell for years—it has never flown so to speak. It's right up there with Twitter as a suggestion for enhancing English

skills. That hasn't taken off either despite the tedious desperates in the profession who insist on trying to make it the next big thing. It's like trying to bring back Boy George or something. It's so '90s. Forget the digital games. It's not the '90s. Yawn.

This quote reflects concern about a perceived detrimental impact on students' abilities to think and write creatively, that such practices may lead students to "lack any emotional or creative flair" and cause "downward numbing of imaginative writing". Similar sentiments were expressed in other responses such as "the impact upon creativity is detrimental, limiting writing to a series of prescriptive shallow steps". Such comments create the impression that using digital games is of little interest to the majority of English teachers, which likely devalues DGBL and lowers its status as a worthy social good. These negative views about gaming texts are at odds with the majority of teachers surveyed who indicated digital games are legitimate texts to use in the classroom. The alignment of digital games with Twitter - which is a recent phenomenon compared to digital games - suggests games are a fad, and they appear frustrated with this technology being pushed into their classrooms.

Other responses indicated frustration with popular culture texts asking: "Why does the English classroom have to replicate popular culture?" which reflects cultural heritage discourses that argue against the use of popular culture texts and view these texts as contributing to the impoverishment of English (Ball et al., 1990). Another response arguing against using games included highly emotive language focusing on the addictive dangers of gaming, leading to them "really hat[ing] video games", unless they are educational games, such as Mathletics:

I really hate video games and I do not think they are healthy for kids … they steal something from children and stop them from maturing properly into well-rounded adults because of their tendency to induce addiction, the effects of which I see in my classroom and in my family. However, games like Language Perfect and Mathletics are really helpful to kids.

The emotionally charged language in this excerpt—of "hate", "steal", and "induce addiction"—evokes metaphorical parallels to the effects of a dangerous drug. This teacher's fears and experience with digital games, used by both "family" and in the "classroom", have strong negative associations with "addiction" and loss of childhood (i.e., steal something from children).

Other teacher responses included concerns about declining standards in literacy, with digital games bearing responsibility for this demise. These included views that there is a direct correlation between digital games and the decrease in literacy standards, and a disconnect between games and English: "What has this got to do with English teaching when some students are barely 'literate' e.g., can't read and write?" These responses set up literacy and gaming in opposition, suggesting the use of DGBL will negatively impact student outcomes, or displace basic literacy skills. Teacher concerns about the detrimental impact of digital games on literacy align with political and media discourses warning of the dangers of gaming (Buckingham & Willett, 2013).

4.1.2. Summary of RQ1 results

The teacher responses that we used to address Research Question 1 illustrated conflicted beliefs regarding the positioning of digital games as legitimate texts for use in the classroom. While most respondents (58.6%) favoured the use of digital games, with some arguing these texts are highly valuable social goods and imperative for inclusion, others (14.1%) presented highly negative views, and a significant number (27.3%) were unable to give a definitive answer. These findings suggest there is no consensus about the value of digital games in classrooms among our sample of English secondary teachers.

4.2. Research question 2: what are teachers' actual and intended uses of digital games in education?

Our second research question explored teachers' behaviours and practices in relation to digital games in the English classroom. We asked four questions related to their self-reported use with two possible choices (e.g., Yes, No), followed by opportunities for open-ended responses that sought an extended written explanation from participants. A summary of the frequency of responses per option (*n*) and relative percentages (%) per item can be seen in Table 6.

Clear preferences emerged in relation to teachers' answers to various questions. For example, when asked '*Have you used digital games (topic or games) as a main focus in your English program?*', 85% of the respondents said 'no' (*n* = 122). When asked '*Are you planning to use digital games (topic or games) as a main focus in your English program in the future?*', 74% of respondents said 'no' (*n* = 90), suggesting a strong reluctance to embrace DGBL as a major classroom focus. Similarly, when asked '*Have you used digital games (topic or games) to supplement other text studies in your English program?*', 67% of respondents said 'no' (*n* = 122), again signifying a reluctance to implement digital games even as supplementary texts in the curriculum.

In contrast to the negative views noted above, there was some evidence to suggest that teachers are willing to "*use digital games (topic or games) to supplement other text studies in your English program in the future*"—with 48% of respondents indicating 'yes' to this question. These results illustrate that there is tension for teachers attempting to create DGBL for their classrooms.

4.2.1. Open-ended responses

From the written responses of participants who were not using games as a main focus (*n* = 104) or supplementary text (*n* = 82), almost a quarter (*n* = 21) suggested that they had limited knowledge of, and limited time to explore, ways to use digital games in their classrooms. For example, teachers admitted, "I know too little about digital games to be able to use them as an effective teaching and learning tool", and "I know from pre-service training that they are valid but due to my age and lack of knowledge I do not use them, nor does my department". Digital games were seen by some teachers as "valid" and they were "interested in facilitating such pedagogies but had not had much opportunity" or "not enough experience" to support their endeavours.

Table 6
Teachers' self-reported use of digital games for learning (closed responses).

Question/Option	Frequency of responses (*n*)	Percentage of responses (%)[a]
Have you used digital games (topic or games) as a main focus in your English program?		
No	104	85.25
Yes – Please provide some examples	18	14.75
Total	122	100%
Are you planning to use digital games (topic or games) as a main focus in your English program in the future?		
No	90	73.77
Yes	32	26.23
Total	122	100%
Have you used digital games (topic or games) to supplement other text studies in your English program?		
No	82	67.21
Yes	40	32.79
Total	122	100%
Are you planning to use digital games (topic or games) to supplement other text studies in your English program in the future?		
No	63	51.64
Yes	59	48.36
Total	122	100%

[a] The percentage of total responses represents the percentage of participants who selected that option relative to the total number of respondents for that specific item (not relative to the total sample).

Responses that indicated teachers' inclusion of digital games were categorised into four pedagogical uses in the classroom, listed in order of response frequency: improving literacy basics; uses that linked to critical theory; remediating 'low' ability students; and non-specific responses including generic comments such as "games use in lower school classes", or the year level.

The statements on basics/literacy referenced the use of educational programs, such as *Literacy Planet* and *Grammatikus*, as tools to improve student engagement and literacy, and formats, such as "quizzes and simple tense, spelling games to reinforce and practise skills". These responses link to a basic skills approach, suggesting that teachers do not see digital games as texts for main instructional activities. An example of the 'low' ability response discussed how they used a unit "Imaginary Worlds with video games as the text … which proved to be quite successful with low ability Year 9 class". This response did not expand on the type/s of games or how they were used.

The responses that linked to critical theories, elevating DGBL to a higher value and complexity, often included the use of concepts such as text deconstruction, ideological critique, and understanding the historical context and audience. For example, one response suggested digital games were used in a Year 7/8 class to enable the "deconstruction of characters from popular games—they then write a monologue in character". This response links to critical literacy theories, such as challenging the assumptions of texts and the power relations in their production and use, particularly the notion of 'deconstruction' and 'transformation' of texts from different perspectives. Another example is a unit that required students to transform texts from one genre to another:

> This task specifically requires students to prompt the transformation of a text (e.g., video game) into a movie. In doing so they must analyse and identify the original text's target audience and ideologies.

This example of pedagogical application includes transmediating or shifting semiotic material across modes and media. It also includes an analysis of the ideological representations in the original text, which was similarly included in other teachers' responses such as "representations of gender, age".

4.2.2. Summary of RQ2 results

In answering Research Question 2, which focused on how teachers use digital games, there was a significant number who highlighted inadequate knowledge to successfully plan or use these texts, several who were using educational games as tools to improve literacy standards and engagement, and a scarce number who clearly articulated creative and critical uses of digital games. While a small majority of the teachers viewed digital games as legitimate texts, the responses on how to use them exposed a gap in knowledge, with difficulties translating theory on digital games into everyday teaching practice. This theory-practice gap presents a disconnect between espoused and enacted DGBL curriculum, raising issues concerning teachers' confidence (and in some cases willingness) to fully harness the potential of DGBL for critical and creative curriculum.

4.3. Research question 3: how do teachers gain professional knowledge about digital games?

To answer the third and final research question, we explored teachers' professional engagement with digital literacies. We looked at responses from four sub-questions that asked teachers their experiences with two (e.g., *Yes, No*) or three possible choices (e.g., *Yes, No - I would prefer not to, No - I can't recall*), followed by opportunities for open-ended responses.

A noteworthy trend arose when teachers were asked '*Have you attended professional development on using digital games in the English*

classroom?'. As detailed in Table 7, 80% of those who responded to this question said 'no' ($n = 97$). In contrast, when asked: 'Have you read articles, books, or chapters about using digital games, or digital games models, in the English/literacy classroom?', 60% said 'yes' ($n = 73$). On its own, the former item may suggest professional development is either scantly available or scarcely interesting to English teachers (or both). Yet its juxtaposition with the latter item highlights the possibility that English teachers may prefer *informal* (e.g., reading books) over *formal channels* (e.g., attending a course) for professional learning. Moreover, 73 participants said they had read articles, books, or chapters, but only 29 provided examples of these publications when prompted to do so. See Table 7 for a summary.

4.3.1. Open-ended responses

The open-ended responses provided information on the sources and types of professional learning these teachers relied on for their understanding of how to use digital games in the classroom. A significant number listed journal or newsletter names—predominantly those that were published by their English Teachers Association (ETA). The second most significant group of responses linked to authors, many of whom were published in ETA publications or recommended by these associations. The third ranked source was conferences and workshops run by their local ETA. Others referred to sources that included school-based professional development, educational groups such as 'Google for Education', readings through higher degree programs, and names of books including those published in partnership with state and national ETAs, however, these were less frequently referenced by teachers.

4.3.2. Summary of RQ3 results

A clear pattern emerged in this data indicating these teachers relied heavily on their English Teachers Associations as a valued and respected source to provide publications, recommendations, and professional learning on digital games for the classroom.

5. Discussion

Addressing the three research questions, our findings suggested that most teachers in our study viewed digital games as legitimate texts,

Table 7
Exploring teachers' professional engagement relating to digital literacies (closed response items only).

Question/Option	Frequency of responses (n)	Percentage of responses (%)[a]
Have you attended professional development on using digital games in the English classroom?		
No	97	79.51
Yes	25	20.49
T	122	100%
Total		
Can you list the professional learning activities?		
No, I would prefer not to	1	4.00
No, can't recall	7	28.00
Yes - Please provide some examples	17	68.00
Total	25	100%
Have you read articles, books, or chapters about using digital games, or digital games models, in the English/literacy classroom?		
No	48	39.67
Yes	73	60.33
Total	121	100%
Can you list some of the publications/models?		
No, I would prefer not to	6	8.22
No, can't recall	38	52.06
Yes	29	39.73
Total	73	100%

[a] The percentage of total responses represents the percentage of participants who selected that option relative to the total number of respondents for that specific item (not relative to the total sample).

however, they were unlikely to endorse digital games as supplementary texts and even less likely to endorse their use as the main texts in the English classroom. Less experienced teachers were more likely to have used gaming texts and some responses indicated frustration with the 'older generation' which reflects existing research on intergenerational cultural change (Vaisey & Lizardo, 2016). Reluctance to integrate digital game texts was more prevalent in responses from more experienced teachers – pointing to a critical target demographic for professional learning. A key message from the findings is that using digital games in the classroom is a contested space with at times dichotomous beliefs about its value for literacy education.

Findings indicate that some teachers passionately disagree with attempts to "build" DGBL as an educational "social good" (Gee, 2011a) by delegitimising their use and expressing strong ideological objections toward their value and legitimacy in classrooms. Not only do some teachers' statements position games as antithetical to social goods, but in some cases, comments indicate perceptions of digital games as detrimental for society, such as the fear that games induce addiction. Research has explored gaming addiction and addiction impacts for children with mental health disorders (Chew, 2022; Dibbell, 2015; Singh, 2019), however, the value of gaming within boundaries for young people's health and wellbeing has also been clearly highlighted (Jones et al., 2014). The concern noted in the teachers' comments identifies an important consideration in terms of healthy practices, not only for English teachers, but all disciplines in which digital games can be used.

The concerns raised by the participants also reflect Øygardslia's (2018) findings on teachers' perceived views on games' lack of rigour to meet curriculum and testing requirements. As argued in this Belgian study, some games provide strong foundations for classroom study while others do not (All et al., 2021). The findings substantiated other research reporting on teacher tensions associated with using DGBL and the barriers that exist in relation to experience, training, resourcing, and confidence (Alsuhaymi & Alzebidi, 2019; Dickey, 2015).

The teachers' responses about using (or in this case mostly not using) digital games in the classroom raises an interesting concern in light of the context in which these teachers work. The *Australian Curriculum: English*, is the mandated curriculum, and it includes student outcomes which require reading, viewing, and producing multimodal texts—with 'multimodal' referenced over 300 times (Australian Curriculum, Assessment and Reporting Authority, 2021). The *Australian Curriculum: English* does not prescribe the use of a narrow range of canonical literature but encourages the use of digital literacy and texts from different cultures and time periods, noting Australia's multicultural population (Mason & Giovanelli, 2017). Even though this is the case, it seems many of these teachers struggled with their confidence in using multimodal texts such as digital games. A lack of confidence and exposure, however, belies the possibility that teachers are likely to position DGBL as a social good worth pursuing in their classrooms.

Of the English teachers who resisted using games, their perspectives often aligned with long-standing debates about text selection in English classrooms (see, for example, Mills, 2005). While preserving historically validated texts and textual practices can have an important place in citizenship and Western education systems, all texts, textual practices, and text selection in the curriculum should be critiqued in terms of their associated cultural assumptions, ideologies, and social formations in the construction of subjectivity and production of dominant cultural positions irrespective of the curriculum area (Luke, 2012). The devaluing of digital games for classroom study and canonisation of traditional texts that was evident in some of the participant's responses reproduces a dominant tradition that is arguably inequitable, since marginalised and culturally diverse groups also have a stake in literacy practice in a multicultural society (Mills, 2005).

The exclusive use of historically valued texts in curriculum does not reflect the diverse range of digitally mediated, popular texts and video game genres that children and adolescents experience beyond the school gate, nor those that are used in society. In addition, such practices limit

opportunities to enhance overall skill development (Scholes et al., 2021, 2022, pp. 1–16) and to teach future-oriented digital skills (Mills & Brown, 2022). They miss opportunities to critically interrogate representations of groups in everyday texts (Beavis et al., 2015) and examine issues of ethics and exploitation in gaming cultures (Dibbell, 2015). Silencing popular culture—such as digital games—misses valuable opportunities to capitalise on children's interests and fails to connect with the practices of youth (Arthur, 2001).

When considering the lack of DGBL used by the sample of teachers, it appears that the professional learning some teachers accessed in our sample has not inspired confidence in using digital games in the classroom. This predicament is not limited to Australian teachers. International inquiry illustrates that many teachers from diverse contexts do not feel sufficiently knowledgeable about games to incorporate them into classroom spaces with important questions pending about how teachers who do not game and may be unfamiliar with such texts might include them (Nash & Brady, 2022).

While some previous research has reported success in improving teachers' perceptions and implementation of gaming pedagogy (An, 2018; An & Cao, 2017; DEECD, 2011), our findings suggest teachers are hesitant about the use of digital games despite engaging in various degrees of professional learning. International research on the impact of professional development in digital games curriculum design suggests these experiences can have significant impact on teachers' perceptions, attitudes, and self-efficacy to enact DGBL (An, 2018).

In addition, there was a discrepancy in the data between the number of teachers who accessed publications on digital games and their implementation of games. One possibility for this discrepancy may be explained by the difficulties teachers face in attempting to translate sourced publications into teaching practice. There is a substantial body of research arguing for the value and legitimacy of digital games for English literacy and other curriculum domains (Beavis, 2022; Chen et al., 2020; Jackson et al., 2022; Mills & Brown, 2022), which illustrates the importance of effective professional learning that assists teachers to implement these approaches. The findings in this paper raise questions about the type of learning that the sample teachers are accessing as it is not providing experiences that engage teachers in the type of deep, long-lasting learning that Esteban-Guitart and Gee (2020) suggest may change mindsets.

6. Limitations

This research presents a 'snapshot' and while not exhaustive, we captured a broad range of demographic characteristics in our sample. We recognise that while there may be similar findings in other contexts, the teachers, their responses, and this analysis represent specific contexts and moments in time. In addition, we did not want to influence the teachers' views on what digital games were or their potential use in classrooms, and hence, a definition of digital games was not included for the participants. However, not sharing a definition may have impacted the comparability of responses.

A final limitation relates to the method used to distribute the questionnaire, which was via the various state and territory English Teachers Associations' databases. This limitation may be evident in the findings concerning participant responses to professional learning as members of these groups have access to resources and professional learning provided by local English Teaching Associations. Views on digital games provided by these associations may have influenced their responses. Finally, the questionnaire did not force responses, hence the participants were able to selectively complete the questionnaire meaning some questions were only partially completed.

7. Conclusion and future direction

This paper set out to understand English teachers' views on the legitimacy of digital games for classroom use, actual use, and professional learning. The findings offered insights into the reasons and motivations behind some teachers' negative ideological views towards DGBL, identifying barriers to DGBL adoption in English classrooms, and uncovered findings about value-centred assumptions that relegate popular culture and digital games to the margins.

The implication for practice is that DGBL remains a polarising and contentious pedagogical issue among English teachers, calling for the development of curriculum policy to be more closely aligned with explicit links to DGBL. Professional development for teachers needs to engage teachers in effective learning on the use of DGBL and construct DGBL as a "good worth having" (Gee, 2011a, p. 118). We recommend professional learning highlights research that attests to the learning benefits and value of DGBL to support the use of games as texts in education. It should provide practical resources and research-based examples that demonstrate the efficacious selection of games for their meaningful support of teaching and assessment. Due to the lack of translation of research into practice evident in the findings, we also recommend designers of DGBL professional learning carefully consider ways to engage teachers and make the learning accessible. Such professional learning should encourage and empower teachers to shift from a 'basic' use of digital games to more critical, creative, and innovative implementation. Finally, we argue for further research that explores the mode, content, and duration of professional learnings, teachers' successful take up of digital gaming texts in their classes, and continued research into the perceptions of teachers who engage in this type of learning.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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