Literacy Educators' Attitudes on Video Games and Learning

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Abstract: This research used a survey design methodology (Dillman, 2011), which is a "nonexperimental research based on questionnaires or interviews" (Johnson & Christensen, 2013, p. 249) to investigate elementary literacy teachers' attitudes on video gaming and learning. 328 teachers from a Midwestern state in the United States completed a 37-item survey, which primarily utilizes five-point Likert scale items to examine their general perceptions of video games, their attitudes on video game-based learning, and their perspectives on utilizing games for literacy teaching and learning. The data were analyzed by examining the distribution and frequency of participant responses as well as overall trends in their perspectives (Iarossi, 2006). Results indicate that the teachers believe children enjoy playing video games, view games as an important aspect of youth culture, and generally believe that video games can promote student motivation, engagement, and learning. However, only 38% of participants either agreed (32.0%) or strongly agreed (4.6%) that they regularly integrated video games into their literacy teaching and approximately a third were skeptical about integrating video games into their literacy teaching (26.8% agreed and 7.3% strongly agreed). Additionally. 57% were interested in learning more about how to effectively integrate video games into their literacy teaching (47.9% agree and 10.1% strongly agreed). This finding makes sense given that only 14% of participants indicated they learned about digital game-based learning during their teacher preparation programs. Ultimately, participants' positive views on learning through video games aligns with existing reviews of research that demonstrate the effectiveness of game-based learning in a variety of content areas (Clark et al., 2016; Thompson & von Gillern, 2020; Wouters & van Oostendorp, 2013). Given that teachers' views largely align with research that demonstrates games can be effective at promoting student learning in a variety of disciplines, professional development is needed to help teachers develop their abilities to effectively integrate video games into their literacy teaching. Further implications and directions for future research are discussed.

Keywords: Video games, literacy, learning, teachers, survey

1. Introduction

Stemming from the work of the New London Group (1996), today's educators recognize the role of digital literacies as part of language arts instruction. Literacy practices continue to expand alongside evolving definitions of literacy, particularly in terms of the multiliteracies that are prevalent in the digital age. In recent years, teachers have evidenced through their pedagogical approaches this expanding view of literacy by including new literacy practices and technologies in the classroom (Kalantzis et al., 2016). Students of the 21st century regularly interact with – both consuming and producing – texts that are multimodal in nature (Serafini, 2015), and teachers recognize the importance of incorporating technology into the classroom and supporting students as they layer meanings across multimodal texts (Abrams & Gerber, 2015). While teachers often include audio and video media in ELA classrooms, the use of video games in classroom settings has been slower to gain traction as an established practice.

Video games can support learning related to a variety of cognitive processes such as inductive reasoning (Greenfeld, 2014) and decision-making (Gros, 2007). Further, video games can be used in classroom contexts to support learning (Clark, Tanner-Smith & Killingsworth, 2016), including within language arts instruction (Beavis, 2012; Gee, 2007; von Gillern et al., 2022). In ELA classrooms, video games can be used to teach varied literacy standards (Marlatt, 2018;

Stufft, 2018; Stufft & von Gillern, 2021) and to promote students' critical thinking and metacognition (von Gillern & Stufft, in press).

Video games are commonplace in the lives of today's youth. Over 90% of children in the US play video games regularly, and the vast majority of US adults (75%) also engage with this medium (NPD Group, 2020). Video games are immensely popular within youth culture, and teachers recognize that the use of video games in the classroom provides a way to engage students (Beavis, Dezuanni & O'Mara, 2017). However, video games have not made their way into mainstream use in classrooms or as a standard part of ELA curricula as of yet.

2. Literature Review

Video games have been described as powerful learning tools that require players to respond to simulated environments, progressively developing new knowledge and skills within game worlds (Gee, 2007; Pelletier, 2009). Engagement with games requires complex thinking and skills, including planning, problem solving, collaboration, adaptive thinking, and technical abilities (Federation of American Scientists, 2006). Squire (2014) identified six practices of gamers that allow for learning in social contexts, including, for example, producing and consuming information, strategic use and critique of digital spaces, and multimodal meaning-making. McClarty et al.'s (2012) review of gaming for educational purposes reaffirmed the role of learning principles within games, highlighting games' particular affordances in relation to engagement, personalized learning, digital skills, and authentic assessment. The question facing researchers today is not whether games can serve as rich sources of learning, but how to leverage the affordances of gaming in school contexts (Beavis et al., 2017).

Research on the use of video games in classroom settings has highlighted a multitude of curricular implementations in literacy instruction, including game analysis (Bacalja, 2018), multimodal composition (McClay et al., 2007), and collaborative problem solving and design work (Gerber et al, 2014). These diverse forms of curricular implementation have been shown to have positive impacts on student learning (Nash, 2022). Across settings, researchers have reported increases in student engagement (Gerber et al., 2014), shifts in students' academic identities (Marlatt, 2018), complex analytical thinking (Beavis et al., 2015), and students engaged in multimodal design thinking and composition (Nash 2021a; Stufft & von Gillern, 2021).

Despite promising findings in the extant research literature, myriad challenges and obstacles remain for incorporating games into classroom spaces (Burn, 2004). Video games have long been stigmatized in K-12 and university settings (Murray, 1997), though this perception has been changing; a recent review of research on games in literacy found that few empirical studies of game-based learning had been conducted prior to 2005, meaning that the research base around which to ground curricular implementation remains nascent in comparison even to other forms of new media, meaning that teachers have fewer curricular resources and less of a research base to justify their decisions about gaming in classrooms (Beavis & O'Mara, 2010). Moreover, implementing video games requires teachers to synthesize between analytical traditions within the discipline of language arts (Skerrett & Warrington, 2018) and an interactive form of media that demands explicit player interactivity (von Gillern, 2016; Beavis et al., 2014). Many games have playtimes that exceed 100 hours, presenting teachers with questions about how often to play games versus to analyze them, a question made more difficult by the deficit attitude towards game-based learning in most schools.

Researchers have posed legitimate questions as to how much knowledge of a new medium is required to teach and teach with it in classroom spaces, posing questions related to educational co-optation of digital literacies and the proper relationship between traditional school-based literacies and those students commonly take up outside of school (Alvermann & Heron, 2001). Given both the promise and the challenges that face teachers and curriculum designers interested in game-based learning, it remains important to consider teachers' perspectives on the use of video games in the classroom. Extant research has shown that teachers' perceptions and conceptualizations of video games play a large role in whether and how students are provided opportunities to engage in these new literacies (Beavis et al., 2017). As Beavis et al. (2014) explain, "teachers' beliefs about what it is (or is not) possible to achieve with digital games in educational contexts will inevitably influence the decisions that they make about how, when, and for what specific purposes they will bring these games into their classrooms" (p. 569).

Thus far, there is only scant research available regarding teachers' views of video game implementation, in part owing to the fact that much of the empirical work surrounding game implementation in literacy classrooms comes from qualitative, ethnographic studies that utilize purposive sampling; this work, though it often includes contextualized descriptions of teachers' views, is not meant to represent the views of a broader teaching public, but rather to highlight the possibilities of game-based learning in specific classroom contexts (Authors, 2022; Beavis et al., 2017).

Studies that have explicitly examined teachers' views have found a mix of caution and excitement related to games (Can & Cagiltay, 2006). Beavis et al. (2014), for example, in a study of Australian teachers' views of gaming, found that many teachers were intrigued by the possibility of introducing engaging texts that allowed for virtual exploration and problem solving. This optimism was common across their study participants; the concerns related to gaming were more diverse and idiosyncratic to individuals, and included a lack of self-efficacy regarding gaming knowledge, a fear of losing control over classroom learning time, and concern for how to manage differential knowledge and experience with games among students. Gerber and Price (2013), in a study of American teachers enrolled in a graduate course, showed that although the teachers were excited about the possibilities of game-based learning, they also worried about (1) the cultural stigma that was attached to gaming being applied to their professional identities as teachers and (2) the logistical hurdles to including games in classroom-based settings. Although there have been several studies of teachers' perceptions of video game-based learning in disciplines such as physical education (Jenny et al., 2013), science education (Marino et al., 2013), and secondary language arts (Chik, 2011), there have been no recent large-scale examination of teachers views of gaming and game-based learning in relation to literacy education, and few studies on this topic in the last decade.

With both technologies and attitudes towards gaming and other new literacies rapidly shifting (Leu et al., 2013), it is imperative that researchers, educators, and curriculum designers develop comprehensive and up-to-date knowledge of teachers' understandings of video games in relation to classroom learning.

3. Methodology

A survey design methodology (Dillman, 2011), which is a "nonexperimental research based on questionnaires or interviews," was utilized for this study (Johnson & Christensen, 2013, p. 249) to answer the following research question: What are elementary literacy teachers' attitudes on video gaming and learning?

The survey was designed by reviewing existing surveys and concepts from the literature that aligned with the research question. Items from Homer et al.'s (2012) Demographics, Attitudes, and Player Activity (DAPA) survey and Noraddin and Kian's (2014) survey on digital games for teaching and learning were included in the present survey. Some items were modified for clarity and to become tailored to the target audience of this study (i.e., literacy teachers). For example, Homer et al.'s study was developed to be given to children, and thus, we modified some items to shift to a format appropriate for the target audience (e.g., the survey item "I spend too much time on video games" was changed to "Children spend too much time on video games"). Furthermore, the researchers created new items aimed to develop an understanding of the research question (e.g., "Integrating digital games into the classroom can promote student motivation" and "Digital games are a form of media worthy of analysis in English language arts classrooms"). A panel of four experts as well as four teachers reviewed the survey questions and provided feedback on the content and clarity of the survey items. This feedback was used to refine the survey's clarity and create additional items aligned with research goals to create a final survey with 37 items that examine their general perceptions of video games, their attitudes on video game-based learning, and their perspectives on utilizing games for literacy teaching and learning. The survey consists primarily of five-point Likert scale items and also includes demographic items.

The survey was distributed to literacy teachers in a Midwestern state in the United States through email distributed via Qualtrics. Over the following two weeks, three reminder emails were sent as well. In total, 328 elementary literacy teachers completed the survey (see participant demographics in Table 1). Any survey that did not have 100% of items completed was excluded from analysis. The data were analyzed by examining the distribution and frequency of participant responses as well as overall trends in their perspectives (Iarossi, 2006).

4. Results

Results (see Table 2) indicate that the teachers believe children enjoy playing digital games (97.6%) and view games as an important aspect of youth culture (72.2%). While teachers note the high levels of enjoyment and relevance for youth culture, they also believe that "children spend too much time playing digital games" (75.6%). Though, they also believe that "it is fine for children to play digital games as long as it doesn't negatively affect their schoolwork" (74.4%). These results indicate that teachers generally recognize the importance of digital games for children; however, they have concerns about children spending too much time playing games.

Table 1: Participant Demographics

Age	
20-30	15.6%
31-40	27.8%
41-50	33.0%
51-60	19.2%
61+	4.6%
Years Teaching Experience	
0-5	25.6%
6-10	16.5%
11-15	11.9%
16-20	15.2%
21-25	18.6%
26+	12.2%
Grade Level Taught	
K-3	30.5%
4-6	25.0%
Specialist / Other	44.5%
Gender	
Female	93.0%
Male	5.8%
Non-Binary / Third Gender	0.3%
Prefer Not to Say	0.9%
District Type	
Rural	48.8%
Suburban	35.7%
Urban	15.5%
Hours of Digital Games Currently Played Per Week	
Zero	35.7%
0.1 to 2.9 Hours	47.0%
3 to 5.9 Hours	12.8%
6 – 8.9 Hours	4.0%
More than 9 Hours	0.6%
Hours of Digital Games Played Per Week when Same Age as Current Students	
Zero	54.3%
0.1 to 2.9 Hours	30.8%
3 to 5.9 Hours	11.0%
6 – 8.9 Hours	3.4%
More than 9 Hours	0.6%

In terms of teachers' attitudes on games and learning, the teachers generally believe that video games can promote student motivation (87.2%), engagement (87.8%), and learning (74.7%). Additionally, most participants believe that playing digital games requires "players to engage in complex thinking and learning processes" (62.2%). Teachers also agreed that "digital game-based learning will be an important teaching tool in the years to come" (78.1%), and "digital games can teach children valuable information they might not learn in school" (67.7%).

In terms of games and literacy instruction and development, slightly over half believed that digital gaming is a digital literacy practice (57.9%), yet the vast majority believed that "teachers can use digital games to enhance student learning in English language arts (82.3%).

However, only 36.6% of participants regularly integrate video games into their literacy teaching and approximately a third were skeptical about integrating video games into their literacy teaching (34.1%). Additionally. 57% were interested in learning more about how to effectively integrate video games into their literacy teaching (47.9% agree and 10.1% strongly agreed). This finding makes sense given that only 14% of participants indicated they learned about digital game-based learning during their teacher preparation program.

Table 2: Survey Results

Survey Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean Score
Q1 - Digital games make children feel good about themselves.	3.7%	7.9%	42.4%	42.7%	3.4%	3.34
Q2 - It is fine for children to play digital games, as long as it doesn't negatively affect their schoolwork.	2.7%	8.8%	14.0%	66.2%	8.2%	3.68
Q3 - Children spend too much time on digital games.	1.2%	6.7%	16.5%	47.9%	27.7%	3.94
Q4 - Playing digital games is a waste of time.	6.7%	61.6%	25.9%	4.6%	1.2%	2.32
Q5 - Spending money on digital games is a waste.	5.5%	53.4%	22.9%	13.7%	4.6%	2.59
Q6 - Most children like to play digital games.	0.3%	0.3%	1.8%	54.6%	43.0%	4.40
Q7 - Digital games help children make friends in school.	7.3%	27.1%	32.6%	31.7%	1.2%	2.92
Q8 - Digital games are an important part of youth culture.	3.0%	10.1%	14.6%	58.2%	14.0%	3.70
Q9 - Using digital games is useful for student learning.	1.8%	7.9%	15.5%	67.1%	7.6%	3.71
Q10 - Using digital games for instructional purposes creates a student-centered learning environment.	4.3%	15.5%	18.6%	54.9%	6.7%	3.44
Q11 - Digital game-based learning will be an important teaching tool in years to come.	2.7%	5.5%	13.7%	60.4%	17.7%	3.85
Q12 - I am doubtful about the benefits of using digital game-based learning.	7.3%	53.0%	15.2%	17.4%	7.0%	2.64
Q13 - Digital games can teach children valuable information they might not learn in school (e.g., about the military, country names, world history).	2.4%	12.8%	17.1%	60.4%	7.3%	3.57
Q14 - Digital games help children learn to be team-players.	7.9%	28.7%	25.0%	32.6%	5.8%	3.00
Q15 - Digital games allow children to experience what it is like to live like someone else.	7.0%	28.7%	32.0%	30.2%	2.1%	2.92
Q16 - Integrating digital games into the classroom can promote student motivation.	1.2%	2.7%	8.8%	70.4%	16.8%	3.99
Survey Item	**Strongly Disagree**	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**	**Mean Score**
Q17 - Integrating digital games into the classroom can promote student engagement.	1.5%	3.7%	7.0%	66.5%	21.3%	4.02

Survey Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean Score
Q18 - Playing digital games requires players to engage in complex thinking and learning processes.	1.8%	9.8%	26.2%	54.6%	7.6%	3.56
Q19 - Digital gaming is a digital literacy practice.	6.1%	12.2%	23.8%	52.4%	5.5%	3.39
Q20 - Teachers can use digital games to enhance student learning in English language arts.	1.8%	4.9%	11.0%	73.2%	9.1%	3.83
Q21 - Digital games are a form of media worthy of analysis in English language arts classrooms.	2.7%	8.5%	20.4%	58.5%	9.8%	3.64
Q22 - It is valuable to provide a space in English language arts classrooms for children to discuss digital games in a similar fashion to how they discuss books, movies, and other forms of media.	4.6%	18.6%	27.1%	44.5%	5.2%	3.27
Q23 - Digital gaming requires players to interpret multiple modes of communication (e.g., visual, written, and oral information).	1.2%	9.8%	13.1%	67.4%	8.5%	3.72
Q24 - Teachers can effectively incorporate activities related to digital games into their English language arts instruction (e.g., having students write game reviews, create how-to guides, etc.).	2.1%	3.4%	9.1%	71.3%	14.0%	3.92
Q25 - I regularly integrate digital games into my English language arts instruction.	15.2%	36.0%	12.2%	32.0%	4.6%	2.75
Q26 - I am skeptical about integrating digital games into my English language arts instruction.	7.3%	40.9%	17.7%	26.8%	7.3%	2.86
Q27 - I am confident in my abilities to effectively integrate digital games into my English language arts instruction.	7.6%	25.3%	22.6%	37.8%	6.7%	3.11
Q28 - I want to learn more about how to effectively integrate digital games into my English language arts instruction.	6.4%	14.3%	21.3%	47.9%	10.1%	3.41
Q36 - I learned about digital game-based learning in my teacher preparation program.	41.8%	38.7%	5.5%	12.5%	1.5%	1.93
Q37 - I am confident in my abilities to effectively integrate educational technologies into my English language arts instruction.	3.4%	17.1%	17.4%	51.5%	10.7%	3.49

5. Discussion

The results can generally be broken into three sections including 1) teachers' general perspectives on video games and children, 2) their views on game-based learning, and 3) their perspectives on utilizing video games in English language arts teaching. In terms of their general perceptions on video games and children, the teachers' attitudes were positive in that they believed video games were an enjoyable and important part of youth culture. While they had concerns about children spending too much time playing video games, the teachers recognized that children enjoy games and it is fine for them to play them as long as it doesn't negatively affect their schoolwork.

Additionally, the teachers' views on game-based learning were positive and they believed that video games can support student motivation, engagement, and learning and that "digital game-based learning will be an important tool in years to come." A notable finding in this group of results is that only 32.3% of teachers felt that "digital games allow children to experience what is like to live like someone else." This is an interesting finding given that many video games require the player to assume the role of a digital avatar, and players need to think and act accordingly.

These avatars often have a backstory and serve as a person for the player to embody and control during gameplay, a process and experience documented in research on game-based learning. For example, in his foundational work, Gee (2007) identified how games promote learning through the principle of identity, in which "learners need to know what the 'rules of the game' are and who plays it. They need to know how to take on the identity...[and] operate by a certain set of values, attitudes, and actions" (p. 32). This idea also relates to Prensky's (2005) video game learning principle of role playing. Thus, given that research indicates that video gaming does allow people to "experience what it is like to live someone else", this could be communicated to teachers in professional development programs, particularly given the affinity literacy teachers have for stories and characters.

While the literacy teachers' attitudes on gaming and children and game-based learning were generally positive, their perspectives on utilizing video games in literacy teaching were more mixed. For example, the teachers agreed that video games can support learning in English language arts classrooms, less than 60% believed that digital gaming is a digital literacy practices, and less than 50% believed it was "valuable to provide a space in English language arts classrooms for children to discuss digital games in a similar fashion to how they discuss books, movies, and other forms of media." Additionally, only 36.6% agreed they "regularly integrate digital games into [their] English language arts instruction. Thus, there is a disconnect between their generally positive perceptions that video games can support student learning, including literacy learning, and their willingness to provide time for such activities in their own classrooms. While the present research did not deeply investigate this disconnect, this phenomenon may be influenced by the fact that over 80% of teachers indicated they did not learn about digital game-based learning in their teacher preparation program.

Additional insights into this disconnect may be gleaned from the literature. For example, one barrier for teachers who do consider the use of video games as part of teaching and learning is the fear of being ostracized by administration, colleagues, and/or parents for including video games in the classroom; additionally, teachers face challenges in terms of funding for and technological support for video game software and hardware in classroom spaces (Gerber & Price, 2013). Also contributing to whether teachers use video games in their classrooms is the extent of prior experience teachers themselves have had with video games. Teachers who do not feel comfortable with video games or those who have limited knowledge of video games and/or limited experience playing video games are less likely to incorporate video games into their teaching (Beavis et al., 2014). Collectively, these lead to a disconnect between the prevalence of video games in the lives of students and the inclusion of video games in classrooms.

The findings build on existing research highlighting contrasting attitudes on the part of teachers in relation to video game-based learning. Although no larger surveys have examined the views of elementary teachers, smaller qualitative studies of teachers' views (Gerber & Price, 2013) and studies focusing on secondary teachers (Beavis et al., 2014) have highlighted the recurrence of positive views of gaming as a literacy practice, but hesitations regarding the incorporation of games in schools. The results in this study suggest that the concerns reported by populations such as secondary language arts teachers' and university graduate students apply in the context of elementary literacy instruction as well, with teachers across contexts and who work with myriad age groups reporting excitement about the possibilities posed by digital games, while also expressing hesitation regarding the implementation of games in school settings.

These results highlight that even when teachers have positive views of gaming or perceive gaming as a form of digital literacy, inclusion in school curricula presents a separate challenge for the progress of video game-based learning curricula. Studies of practicing teachers and teacher candidates learning about digital and multimodal literacies have emphasized the challenges that accompany developing new conceptions of literacy in school contexts beyond the print-based traditions that have historically been dominant in schools and in literacy curricula specifically (Nash et al., 2021). Such concept-building requires paradigm shifts in thinking about the nature and boundaries of the profession in which teachers are engaged and does not necessarily come easily or without extended learning experiences (Kist & Pytash, 2015).

Existing research has highlighted that not only are video games not explicitly supported in school-based literacy curricula, they are often actively discouraged through myriad technological, logistical, and ideological challenges

unique to school settings (Nash, 2022). Thus, the kinds of conceptualization and understanding required to be comfortable considering games for in-class use may be harder to develop in relation to games than other digital and multimodal literacies. Lastly, the concerns of teachers about games in classroom settings reported here may also reflect the increasing dominance of standardized curricula across North America (Parker, 2020) that increasingly removes the ability of educators to act as agentive designers of their own curricula.

This being said, the results of the study, in conversation with existing research, point to powerful possibilities for future incorporations of video games in literacy classrooms. Teachers' views of games as supporting motivation, engagement, and out-of-school literacy and learning align with existing research on gaming (Gee, 2007; Stufft & von Gillern, 2021). Thus, the results presented here show that, despite the lack of easily accessible professional knowledge and resources related to the inclusion of video games in literacy curricula (Nash, 2022), teachers have been able to develop accurate conceptions regarding their potential as learning resources (Pelletier, 2009). The disconnect reported here between teachers' generally positive views of the potential learning applications of gaming and the hesitation related to games in classrooms suggests the need for the development of teacher education regarding gaming in classroom contexts and further research related to the kinds of games-based learning teachers may be considering as they consider their potential for classroom use. In the following section, we turn to further considerations regarding directions for future research and discuss the limitations of the present study.

Future research exploring teachers' perceptions of video games for literacy instruction and future research focused on the use of video games in classroom spaces can build upon limitations of this study. The 328 elementary literacy teacher participants who completed the survey all live and teach in the Midwestern United States. Future research should include the perceptions of teachers in other regions of the United States and also across other countries. It is important for future researchers to investigate the views and experiences of teachers across different geographical areas regarding the use of video games.

While respondents from rural, suburban, and urban schools participated in this study, the majority of participants were from rural or suburban settings, with approximately 15% of respondents from urban settings. Future research should continue to investigate the perceptions and practices of literacy teachers from different school settings, including urban schools. It may be valuable to consider the different resources, support, and training available to teachers in different school settings as relates to technology integration and the use of technology (including video games) in classroom spaces.

The majority of respondents in this study identified as female. Future research should continue to explore the ways that teachers' perceptions of video games relate to individual identities, including gender and race (Russworm & Blackmon, 2020). While this study focused on teachers' perceptions of video games, future research should examine the impact of teachers' own video gameplay experiences/expertise on their use of video games in the classroom. It may be of value to consider ways to provide professional development, support, and/or modeling for in-service teachers regarding the use of video games to teach literacy in order to further explore the relationship between teachers' perceptions of teaching with video games and their own experiences with using video games and receiving support and/or training regarding ways to teach with video games.

6. Conclusion

Research illustrates that video games are effective for promoting learning across various content areas (Clark, Tanner-Smith, & Killingsworth, 2016), and the participants in this study generally believed that video games and game-based learning can be an effective tool for promoting student motivation, engagement, and learning. However, the participants had mixed feelings about using video games in literacy instruction and only 36.6% indicated they regularly use games in their English language arts instruction. Thus, there is a disconnect between the the research on game-based learning, teachers' general opinions on game-based learning, and their willingness and efforts to integrate game-based learning in their English language arts instruction. Given that only 14% of participants indicated they learned about game-based learning in their teacher preparation programs, it is critical that both in-service and preservice teachers learn about game-based learning including its efficacy as demonstrated in research as well as practical activities for implementation in both literacy and other content areas.

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