Connecting the Dots: Acquiring Language via Game-Related Tasks in Online Games

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Abstract

This paper attempts to systematically review past studies to explore the types of online game-related tasks and how they influence the language performance of language learners in online games. The primary search was conducted using the following databases: Web of Science, ScienceDirect, Taylor & Francis Online, JSTOR Archive, and SAGE Journals. The inclusion criteria consisted of research articles published between 2015 to 2021, full text must be available, and research articles that are written in the English language and must be published in selected peer-reviewed scholarly journals. Several factors for game-related tasks that are embedded in online games were found to contribute to learners' language acquisition in digital game-based learning. These factors include a) competition among peers in online games promotes motivation and active participation in language learning, b) collaborative discussion in online games enhances learner's willingness to communicate in the preferred target language, c) the versatile elements of the online game environment promote learning via task completion, and d) learners are empowered to decide and plan learning outcomes based on their language capabilities. The results from this review could potentially provide the necessary exposition on how game-related tasks in online games are implemented. It also highlights the utility of online games as a valuable linguistic tool to effectively improve learners' language learning.

Keywords: digital game-based learning; computer-assisted language learning; online games; game-related task; language learning

Introduction

Computer-Assisted Language Learning (CALL) is widely known as a form of teaching and learning method, whereby learners acquire a target language through the aid of computers. CALL can be specifically beneficial in amplifying learners' language learning experience by utilising the functions of computers (Miftachudin, 2012) during teaching and learning sessions. Mutlu and Eröz Tuğa (2013) also noted that the efficiency of CALL lies in its flexibility to conform to various learning theories or instructional

strategies using different software programs to prompt significant development in language teaching and learning.

The world of language learning in both real world and foreign language syllabuses has been revolutionised with the integration of CALL (Davies et al., 2014). With the current circumstances that involve the global COVID-19 pandemic, the number of classes being conducted online has significantly increased in two years.

Simultaneously, CALL is also important as a computer-supported collaborative learning tool during the COVID-19 pandemic (Barrett et al., 2020). Online collaboration provides opportunities for learners to virtually come together and complete language tasks (i.e., completing interactive projects, discussing assignments with peers, written tasks, etc.) using different software applications (Yim & Warschauer, 2017). Furthermore, CALL also benefits learners to effectively acquire the target language through spoken and written online interactions, particularly in social media. Apart from social media, online video games such as Massively Multiplayer Online Role-Playing Games (MMORPGs) afford discussions among players. The frequent discussions involving elaboration and clarification among high-level learners and low-level learners could help low-level learners improve their communicative skills (Liu et al., 2017).

Digital Game-Based Learning (DGBL)

In the context of CALL, DGBL has increasingly gained attention from language researchers, educators, as well as learners (Zou et al., 2019). Based on Prensky (2003), DGBL is a learning approach that possesses five distinct characteristics namely, a) goals (learners need to achieve learning outcomes), b) interaction (peer-to-peer communication and discussion), c) feedback (video games provide responses when interacted), d) problem-solving (activities incorporated in video games), and e) storytelling (storyline embedded in video games). Additionally, recent studies (Bytheway, 2015; Azman & Dollsaid, 2018; Chang et al., 2018; Pitarch, 2018; Breien & Wasson, 2020; Yang & Chen, 2020; Zou et al., 2021) have also investigated the relationship between video games and language learning. Simultaneously, past researchers (i,.e. Chang et al., 2018; Pitarch, 2018; Breien & Wasson, 2020; Yang & Chen, 2020; Zou et al., 2021) have also explored how DGBL could influence learners' motivation through game engagements and peer interactions.

Sadera et al. (2014) explain the growing popularity of gaming among young learners, and how digital gaming offers educational benefits that have been proven to effectively help learners to acquire their target languages. Based on findings from Wu et al.'s study (2014), DGBL was applicable when serious digital games were produced in attempts to educate young players on general subjects (i.e., mathematics, science, etc.) particularly to acquire knowledge that is useful to real-world applications through the integration of traditional learning objectives with attributes of fun gameplay mechanics and immersive digital environments. Therefore, it is worth pointing out that findings from past studies on DGBL (Ali, 2018; Golonka et al., 2012; Peterson, 2016; Stansfield & Hainey, 2011) suggest that digital gaming provides learners with a stronger motivational pull to learn a language than traditional learning methods as it encourages them to collaborate in autonomous, student-centred learning sessions and effectively motivate them to acquire language through an authentic and immersive digital environment with multimedia features.

The Potential of DGBL in Language Development

DGBL has the potential to provide means of aiding learners in their language development. Past studies have revealed the potential of DGBL in the aspects of online collaboration and communicative competence among learners. For instance, based on a study by Golonka et al. (2012), DGBL is seen as an effective means of promoting collaboration among peers in an autonomous, student-centred learning environment as it enables learners to be more independent in learning target languages according to their own pace and learning styles. The crucial difference between DGBL and traditional classroom learning is that this approach may significantly reduce learning stress as learners are not required to follow rigid, one-dimensional syllabuses or adhere to conventional classroom-based learning outcomes.

Online collaboration in language learning also promotes teamwork among learners by allowing them to come together and complete language tasks through discussions among peers. Tasks such as interactive projects and written assignments that rely on online mediums such as Google Docs and Canva have helped learners to communicate and complete these tasks without the need for face-to-face communication (Barrett et al., 2020). Whereas Bahari and Gholami (2022) also suggested that collaborative interactive activities could potentially aid in learners' learning experience and help avoid boredom and slow pace of teaching. Therefore, learners are not required to be physically present to complete language tasks, and these tasks can pave the way for learners to actively engage in peer-to-peer discussions, as well as collaboratively find solutions in an online environment.

Additionally, researchers such as Stoycheff et al. (2017) highlight how learners' communicative competence could be improved through online collaboration with their peers. For instance, online peer-to-peer conversations could reduce a learner's social pressure and anxiety due to the absence of physical communication (i.e., eye contact, facial expressions, non-verbal cues).

The Use of Game-related Tasks in Online Games

This review focuses on the types and functions of task-based teaching and learning (TBLT), which are utilised in online games. By referring to recent literature published within the past five years, it was found that most studies primarily focused on learners' language performance that constitutes speaking and writing proficiencies, vocabulary acquisition (Ng et al., 2021; Bytheway, 2015), as well as a second language/foreign language communicative competence (Azman & Dollsaid, 2018). It is worth noting that the past studies did not focus on the aspect of TBLT, and this has led to the lack of literature on the potential of TBLT in innovating language teaching approaches particularly in second language acquisition (Ahmadian, 2016). Due to the flexibility of its application, TBLT has been investigated in terms of learners' language performance in digital games. Specifically, game-related tasks were examined by past researchers as a means of analysing learners' language learning performance and language acquisition. Rasti-Behbahani and Shahbazi (2020) explore the use of game-related tasks on vocabulary acquisition and the results revealed that game-related tasks are pertinent in enhancing learners' ability to acquire new words and strengthen the associations between word meanings to develop form-meanings efficiently.

Simultaneously, Ahmadian (2016) explains the significance of task-based learning in aiding learners to acquire linguistic knowledge by completing tasks that are presented through different types of activities in classroom teaching and learning sessions. Task-based learning is crucial in enabling learners to use language practically to achieve real-world outcomes (Ahmadian, 2016). However, due to the nature of the DGBL approach and the application of technology in language learning, this study attempts to analyse the different types of task-based learning embedded in digital games (henceforth, known as game-related tasks) and explore their functions including language acquisition among learners.

Problem Statement

In the current era, technology plays a crucial role in the education field as it emphasises the advancement of teaching and learning (Hussin, 2018). According to an analysis conducted by Martin et al. (2018), the increasing progression of educational technologies has been found to impact the field of higher education due to the expansion of social interests. Hussin (2018) further states that learners who were born between 18 to 23 years old (Generation Z) are more likely to develop different learning styles, which could further lead to an array of learning outcomes as well as learning performance.

Therefore, there has been a surge of studies conducted in relation to Computer-Assisted Language Learning (CALL) and DGBL that specifically focused on learners' language acquisition and performance in the past five years (Hwang & Wang, 2016; Zhang & Wang, 2017; Azman & Dollsaid, 2018; Hashim et al., 2019; Rasti-Behbahani & Shahbazi, 2020; and Li, 2021). Nonetheless, past research mainly aimed toward the outcomes of language learning performance in DGBL (Dixon et al., 2022). The types and functions of tasks embedded in DGBL were not thoroughly explored and this has consequently led to the lack of substantial literature on the relationships between these functions and their impacts on learner's performance. According to Ali (2018), it is essential to investigate the features of the CALL approach from the participants' point of view that result in improved language learning, such as grammar learning. Hence, there is a need to further explore how the different tasks embedded in DGBL influence the learners' language acquisition.

Research Objective and Research Question

This systematic review aims to explore the types of online game-related tasks and how they influence the language performance of language learners in online games. Specifically, this study attempts to answer the formulated research question: how do different game-related tasks influence the language performance of language learners?

Data Collection Methods

This systematic review adopts a qualitative research design based on secondary data. The framework used in this study is based on Koutsos et al. (2019) who proposed six steps in conducting a systematic review. The steps include (1) scoping, (2) planning,

(3) identification, (4) screening, (5) eligibility/assessment, and (6) presentation of the results.
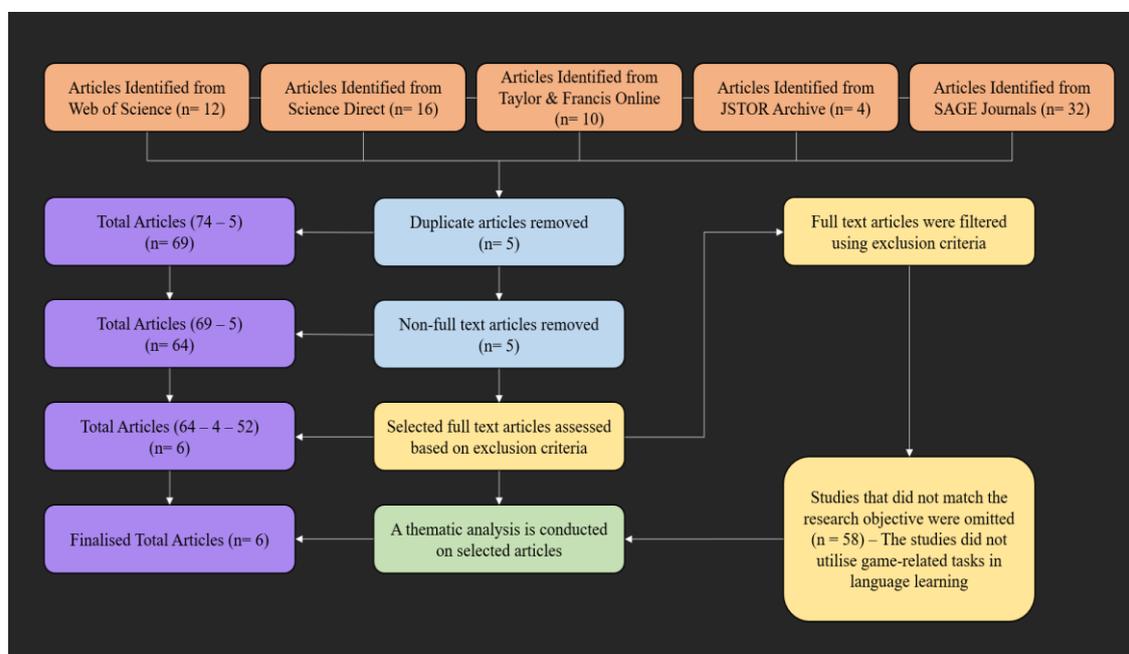
In the first step, scoping, articles were selected from five electronic search databases of peer-reviewed scholarly journals, namely, a) Web of Science, b) Science Direct, c) Taylor & Francis Online, d) JSTOR Archive, and e) SAGE Journals. These databases were selected because of the quality of their journal articles and the high impact factors. Moreover, the journal articles found in these databases have undergone rigorous peer-reviewed processes, which uphold the objectivity and impartiality of these articles.

After choosing the search databases, we planned the use of keywords, time frame and inclusion criteria. The keywords used were "Digital Game-Based Learning OR DGBL" AND "Computer-Assisted Language Learning OR CALL" AND "online game". These keywords were used to filter the selection of articles for this review. The search was conducted between June 2021 and October 2021. The searches were conducted using individual keywords in each respective database to help researchers locate relevant peer-reviewed articles that are related to the focus of this review. Additionally, the researchers also combined all three keywords when searching for articles in each database to expand the coverage of relevant research articles that relate to the focus of this review.

To establish the relevancy of journal articles selected for the study, a set of inclusion criteria was adopted. The selected articles must be fully produced in English and published in selected peer-reviewed scholarly journals. Simultaneously, the empirical data must be published between the years 2015 and 2021.

Figure 1
Flowchart on the Process of Selecting Articles for the Systematic Review

With reference to Figure 1, a total of 74 articles were identified from five electronic search databases of peer-reviewed journal articles, namely: a) Web of Science (n= 12), ScienceDirect (n= 16), Taylor & Francis Online (n= 10), JSTOR Archive (n= 4), as well as SAGE Journals (n= 32).

During the screening process, the first step was to remove five duplicate articles that were identified in the peer-reviewed journals. The omission of these articles was crucial to avoid any data errors during the qualitative analysis. The next step was to remove non-full text articles from the study. A total of five articles were omitted from the remaining articles identified in the study. To further specify the scope of the review, the remaining 64 articles were filtered using exclusion criteria, whereby the articles with content that did not relate to game-related tasks were excluded. This was to ensure that the scope of the selected articles emphasises looking at the functions of game-related tasks in language learning via online games.

Additionally, the articles that did not include five keywords of the study: a) DGBL, b) CALL, c) language learning, d) task-based learning, and e) online games, were removed from the study. The rationale for including articles with the five keywords was to maintain the relevancy of the data presented in the review. The keywords also aided in narrowing down the scope of the study to align with the research objective of this systematic review. Consequently, six articles were selected for the study as they included relevant keywords and were specifically related to the research objective of the study.

Data Analysis

After assessing the suitability of all the articles, a thematic analysis of the articles was conducted to determine the factors of the use of game-related tasks in online games that contribute to the language performance of language learners. According to Braun and Clarke (2006), thematic analysis is a method of identifying, analysing, as well as classifying data according to their respective themes, as it aids in the organisation of findings in a research study. Additionally, thematic analysis is categorised as a qualitative approach, with it being able to exist on its own and utilised with different theoretical frameworks (Braun & Clarke, 2006).

The Process of Identifying Factors of the Use of Game-Related Tasks in Online Games

To illustrate how the present study traces the factors linked to the application of game-related tasks, an example of identifying one factor is shown below:

Step 1: The peer-reviewed research article was selected and filtered through the exclusion criteria stated in Figure 1. The article was then uploaded to the researcher's *Mendeley* cloud library to facilitate the process of identifying the factors. The researcher then utilised the search function in *Mendeley* to detect terms that were related to game-related tasks. Among the terminologies gathered include "competition", "competitive", "motivate", "linguistic goal", and "self-directed". Subsequently, upon further reading the relevant content related to these terminologies as found in the selected articles, the categorisation of content into different groups of ideas was carried out. Finally, based on the grouping of the ideas, the main factors in the use of game-related tasks in online games that contribute to language acquisition in DGBL were then identified.

Figure 2
Utilising the Search Function to Identify Game-Related Task Terms
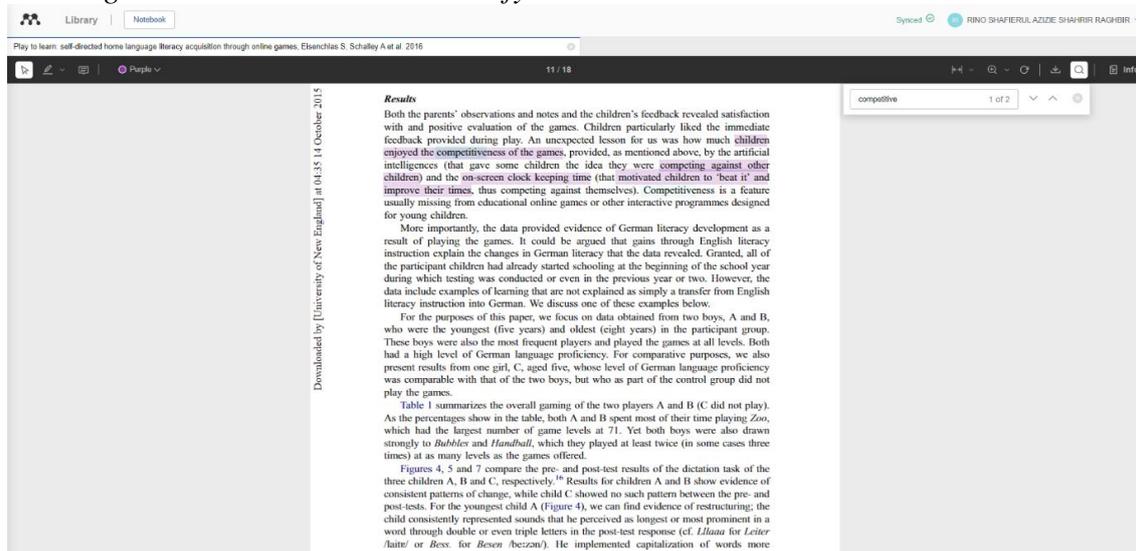
Step 2: The researcher mostly focused on analysing the *Results* section of the selected articles to identify the game-related tasks used in online games, as shown in Table 1. In this case, the online games in the articles focused on *Bubbles, Zoo,* and *Handball* and how the tasks impacted learners' self-directed language learning. The games provided interactive drag-and-drop game functions and utilised on-screen clock keeping time for learners to play and challenge themselves to complete activities within a period of time.

Figure 3
*Findings Highlighted in the Study for Future Reference*

Step 3: The researcher noted down the findings of the study in the [Result] section of the notebook feature provided by the online reference manager software, *Mendeley*. The researcher then analysed and paraphrased the contents in the [Result] section to identify the factors of the use of game-related tasks analysed in the studies within the [Factors] section. Lastly, the researcher categorised the research articles according to the functions of game-related tasks found in the study. The categories provided in Table 1 were derived from the terminologies created by the researcher as illustrated in Figure 2.

Figure 4

Using the Notebook Function in Mendeley to Identify the Major Features or Reasons that Affect the Learner's Game-Related Tasks
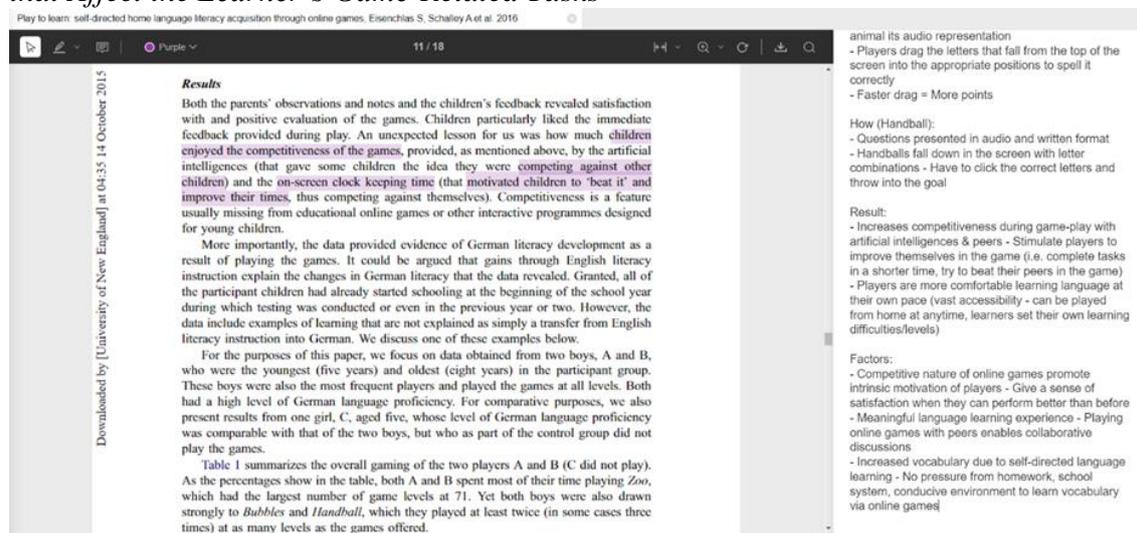
Step 4: With reference to Figure 3, the factors were identified and summarised into point forms and tabulated in the table presented in Table 1. The factors presented in the research article were then discussed. Table 1 shows the mapping of the types of online games and their functions in different studies.

Table 1

Mapping of Types of Online Games and Functions of Game-Related Tasks

Research Articles	Types of Online Game	Functions of Game-Related Task	Online Games
Rui Li (2021)	Vocabulary Learning App	- Pictorial Presentation - Online peer competition - Set own language goals	Baicizhan (百词斩)
Hazita Azman & Nurul Farhana Dollsaid (2018)	Massively Multiplayer Online Role-Playing Game (MMORPG)	- Collaborative discussion - Non-playable character (NPC) interaction	World of Warcraft
Donald Vosburg (2017)	Massively Multiplayer Online Role-Playing Game (MMORPG)	Interactive online digital game environment	World of Warcraft

Amanda Müller, Jeong-Bae Son, Kazunori Nozawa, & Reza Dashtestani (2018)	Web-Based Educational Game	- Collaborative discussion - Idioms applicable in real-life situations	Idiomatico
Susana Eisenchlas, Andrea Schalley, & Gordon Moyes (2015)	Online Cloze Game	- Interactive drag-and-drop cloze game - Online peer competition - Set own language goals	- Bubbles - Zoo - Handball
Camino Bueono-Alastuey & Katalin Nemeth (2020)	Online Flashcards	- Collaborative discussion - Online sharing interactive flashcards	Quizlet

*Source of information: https://elearningindustry.com/need-know-educational-software

Findings & Discussion

Factors of the Use of Game-Related Tasks in Online Games that Contribute to Language Acquisition in DGBL

Based on the data tabulated as shown in Table 1, the researchers have identified four factors of the use of game-related tasks embedded in online games that contributed to learners' language acquisition in DGBL. The factors were a) competition among peers in online games that promoted motivation and active participation in language learning, b) enhancement of learners' willingness to communicate (WTC) in the target language through collaborative discussions in online games, c) versatile elements of the online game environment that facilitated learning via task completion, and d) learners' empowerment towards deciding and planning their learning outcomes based on their language capabilities.

Competition Among Peers in Online Games Promote Motivation and Active Participation in Language Learning

The first factor identified in the systematic review aims at one of the major functions of game-related tasks embedded in online games which is the sense of competition whereby learners are encouraged to compete with their peers by completing in-game activities and earn points based on their scores. Li (2021) in his study explores game-based vocabulary learning in an application called *Baicizhan* (百词斩). *Baicizhan* enables learners to add friends as well as offer competitive learning progress to support

active participation among peers through interactions and promote healthy online competition (Li et al., 2019). Additionally, the pictorial presentation of the English vocabulary and achievement system in *Baicizhan* had led to learners' increased intrinsic motivation to participate in online activities and compete with peers to complete the achievements presented in the game. Consequently, learners who acquired the achievements in *Baicizhan* achieved their vocabulary learning outcomes through the completion of online activities (Li, 2021). The positive effect of *Baicizhan* on college learners' vocabulary achievement, motivation and self-confidence was found to be significant and with moderate impact. Even though the game-based vocabulary application was found to be advantageous, the author also postulated the effects of learners' age, working memory and learning styles.

A study by Eisenchlas et al. (2015) explores children's' self-directed language learning using online cloze games such as Bubbles, Zoo, and Handball. According to the study, the three games possess competitive features that require learners to complete each level within a time limit, and learners can compete with artificial intelligence with increased difficulty in each level. The players' scores for the three games were recorded and learners could share and compare their scores with peers. The findings have shown that learners enjoyed the three games, as the competitive features such as artificial intelligence provided by the games allowed them to produce ideas and strategies that could be utilised when competing against their peers (Eisenchlas et al., 2015). In addition, Eisenchlas et al. (2015) revealed that the on-clock feature embedded in all three games motivated learners to keep improving on the time taken to complete activities of different difficulty levels to collect more points and outperform their peers. These features are advantageous as they nurture their intrinsic motivation and provide a sense of satisfaction when they can outperform their peers. Since this study only involved 3 participants, the real impact of the competitive feature on young children could not be determined.

Collaborative Discussion in Online Games and Learner's Willingness to Communicate

The second factor identified in this review is the role of online collaborative discussions in helping learners to complete game-related tasks. Online games, especially massively multiplayer online role-playing games (MMORPGs), are known for their highly interactive features where players can communicate with each other via push-to-talk applications and in-game text chat (Azman & Dollsaid, 2018). Past studies (Berns et al., 2013; Hong et al., 2016; Zhang et al., 2017) have pointed out the significance of virtual environments embedded in online games for language learning as it promotes motivation and active participation among game players, which further can lead to an enhanced experience in vocabulary acquisition and communicative competence.

This systematic review has identified a research article that centralises the effects of an MMORPG, *World of Warcraft*, on learners' willingness to communicate and real-time language production. The article was written by Azman and Dollsaid (2018), with a specific focus on analysing players' real-time online communication with other players and non-playable characters (NPCs) during game-play sessions. The interactive virtual environment of the game provides a conducive language learning environment, where learners can communicate with other players in the online community via dialogue exchanges. Azman and Dollsaid (2018) further reinstate that the support provided during game-play sessions by other players in the gaming community has helped learners to

strengthen their friendship with each other and that has created a comfort zone where learners were more comfortable interacting in their target languages. In addition, the nature of like-mindedness reflected by the online gaming community; convening with players who not only share similar interests but are also willing to guide each other, has aided learners to communicate better as well as achieve mutual understanding with one another to ensure a successful and immersive game-play experience (Azman & Dollsaid, 2018). Therefore, the support provided by the gaming community in *World of Warcraft* has enabled players to significantly improve their willingness to communicate and effectively converse with their peers with ease to strategise and complete game quests.

A study by Müller et al. (2018) explores English idiom learning via a web-based educational game titled *Idiomatico* among Irani and Japanese English as a Foreign Language (EFL) learners. In the study, Müller et al. (2018) explain that the concept of gamification is useful for learners to learn their target languages, particularly in English idioms, as the game *Idiomatico* presents topics of idioms that are relevant and applicable in real-life situations. The game also offers a platform for learners to have online discussions on different topics of English idioms with their peers and teachers. EFL learners, especially Irani students, were also reported to have more collaborative discussions among their peers during game-play sessions and would seek clarification on the meanings of English idioms from their teacher (Müller et al., 2018), which has led to a positive impact on their post-test scores after completing their game-play session. This indicates that the user-friendly and engaging web-based educational games have helped learners to have quality discussions and enabled faster knowledge exchange among their peers, which further fortify the usefulness of gamification for effective collaborative learning.

The significance of online collaborative discussion in online games has also been researched by Bueno-Alastuey and Nemeth (2020) by exploring vocabulary retention using student-generated Quizlet flashcards. The finding indicates that learners were more prone to independent language learning as they were able to actively discuss with their peers online using visual aids such as pictures, colour-coded flashcards, and sound effects. Bueno-Alastuey and Nemeth (2020) stated that Quizlet enriches collaboration among learners to create different sets of online vocabulary flashcards that are accessible by their peers. The finding resonates with Burston's (2014) view, in which he reinstated that technology could be utilised as a platform to support and create learner-centred collaborative environments. Therefore, DGBL motivates learners to utilise technology-based visual aids to collaboratively discuss and learn the target language with their peers through exchanging Quizlet flashcards generated by learners themselves. Overall, the benefits of collaborative discussions in DGBL are found to be promising.

The Versatility Elements of the Online Game Environment Promote Learning via Task Completion

The third factor identified in the study is the versatile elements of the online game environment that promote learning via task completion. A study by Zheng et al. (2015) reiterates MMORPG as a platform that positively impacts learners' vocabulary retention and negotiations of word meanings during gameplay. Moreover, online games with built-in interactive features could reduce foreign language anxiety, provide multilevel

feedback, as well as translation opportunities to online game players when they are interacting in different languages (Wattana, 2013; Reinders & Wattana, 2015).

In terms of game-related tasks, this review has identified a research article by Vosburg (2017) that focuses on the benefits of interactive virtual environments for real-time language learning during gameplay sessions in *World of Warcraft*. The findings have shown that learners were able to produce an adequate level of German proficiency by interacting with objects in the game. Learners were also guided by native German speakers who served as language guides to assist them during language learning in gameplay sessions (Vosburg, 2017). This indicates that an interactive virtual environment embedded in an online game could promote effective real-time language production among learners as in the case of this study, they were able to learn the target language by making meaning from the words labelled on virtual objects presented in *World of Warcraft*.

Another similar case of how an interactive online game environment impacts the language learning experience can be seen in the study by Eisenchlas et al. (2016), where learners were involved in three different cloze-based online games that promoted self-directed language learning. To elaborate on the gaming mechanics, Eisenchlas et al. (2016) stated that the drag-and-drop mechanic that was embedded in *Zoo,* in which players were required to drag letters that popped up randomly on the screen and to fill in the blanks and spell the words correctly. The drag-and-drop mechanic required learners to drag and drop the words as quickly as possible to score higher points in the game. The finding has highlighted that this mechanic was efficient in stimulating learners to complete tasks in a shorter period, which has led to increased memory retention of linguistic aspects of the German language. Incidentally, these learners were found to be repeatedly trying to improve their performance in terms of the duration of activity completion on the same levels or tasks. Therefore, the identified versatile elements of the online game environment include interactive features, unlimited attempts, translation opportunities, immediate and multilevel feedback, as well as the opportunity to interact with objects and engage in self-directed learning.

### *Learners are Empowered to Decide and Plan Learning Outcomes based on their Language Capabilities*

The last factor that contributes to language development in digital game-based learning relates to learners' ability to decide and plan their learning outcomes in online games that are based on their language capabilities. Dörnyei and Ryan (2015) explain that vocabulary learning motivation is considered an impetus to vocabulary learning, which directly influences learners' vocabulary acquisition. There are numerous approaches to increase learners' intrinsic motivation to learn vocabulary, particularly in online games such as *Baicizhan* (Li, 2021) and Bubbles, Zoo, and Handball (Eisenchlas, et al., 2016) which allow players to choose different levels of difficulty that are suited to their learning capabilities.

A study by Li (2021) explores learners' freedom to set their learning outcomes in Baicizhan. In the study, learners were not tied to specific learning goals set by teachers or educators, and they were not forced to achieve these goals within a set period. Instead, learners had the freedom to learn in *Baicizhan*, as they were able to set up vocabulary learning goals and fully utilised the pictorial presentation of English words during the

game activities (Mayer, 2009). The feature provided by the online game enables learners to repeat the same levels of difficulty to improve their vocabulary proficiency, as well as to decide the pace of their progress in reaching the learning outcomes.

A study by Eisenchlas et al. (2016) has also investigated learners' ability to set up their language learning outcomes in online games such as Bubbles, Zoo, and Handball. The findings of the study revealed that learners opted for self-directed language learning by repeatedly completing cloze activities in online games. It also found that learners were able to set the level of difficulty of the artificial intelligence system embedded in each online gameplay to practise their linguistic knowledge and skills according to their language performance (Eisenchlas et al., 2016). Therefore, learners expressed feeling comfortable learning their target languages at their own pace. In DGBL, the role of the learner agency is important, especially in setting learning goals and achieving learning outcomes. In order to provide an overview of the findings of the review, the factors discussed in the previous sections are summarised in Figure 5:

Figure 5
Summary of Findings
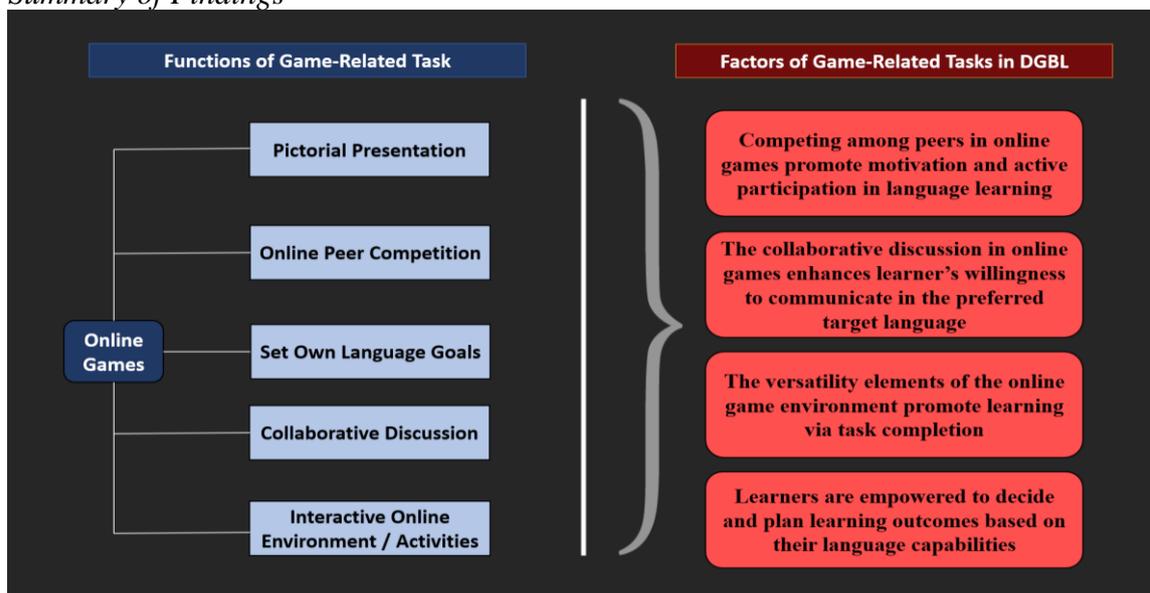
Based on Figure 5, the current systematic review explains how game-related tasks integrated into online games could promote learners' language acquisition in a DGBL environment. The findings of the study have highlighted that the game-related tasks have aided learners to actively engage in language learning as the tasks motivated them to actively participate in collaborative discussions and virtual interactions during game-play sessions. Therefore, this can be a potential opportunity for game-related tasks to be utilised as an informal learning alternative to further improve learners' language performance. In addition, the findings have also illustrated how the different types and functions of game-related tasks embedded in DGBL were incorporated to facilitate and improve learners' language acquisition and subsequently influenced the language performance and proficiency of learners. Specifically, the game-related tasks were utilised by past researchers as an incentive to promote intrinsic motivation and the willingness to communicate among learners that have been found to further aid them to

be more involved in the process of acquiring language and collaborating with peers during game-play sessions.

Implications for Research and/or Practice

The findings of this systematic review highlight the main functions of game-related language tasks in online games. Hopefully, these identified functions will encourage game developers to create more games with these functions and teachers to leverage them in their language lessons. This can reduce boredom in class and encourage language learners to exercise their agency beyond the classroom (Bahari & Gholami, 2022). In line with this, it is important to study the strategies used by learners and the way they exercise their agency to achieve their learning outcomes in DGBL.

Given that most studies have only emphasised learners' language performance, there is a need to investigate the influence of individual differences too. This is in response to Li (2022) who postulated the effects of learners' age, working memory and learning styles. In addition, most studies were also conducted in a relatively short period of time. Longitudinal research would help to provide insights on the use of DGBL in the long run, especially in terms of knowledge retention, digital screen fatigue and other issues.

As the development of online games progresses, so will the affordances and modalities. For instance, the ability to play online games is not only limited to computers, but also involve the use of tablets, mobile phones, augmented reality, and virtual reality. The influence of these different settings on language learning merits attention. Apart from that, it would also be interesting to find out how learners who have digital devices with limited capacity cope with the demands of sophisticated online games which need fast internet speed and high-end graphic cards.

Conclusion

The aforementioned four factors related to game-related tasks embedded in online games contribute to learners' language learning in DGBL. These factors are a) competition among peers in online games that promote motivation and active participation in language learning, b) enhancement of learners' willingness to communicate (WTC) in the target language through collaborative discussions in online games, c) versatile elements of the online game environment that facilitated learning via task completion, and d) learners' empowerment towards deciding and planning their learning outcomes based on their language capabilities.

The limitation of this study being it only focuses on six articles that utilised game-related tasks in online games that promoted learners' language acquisition. There is a possibility to explore how these game-related tasks embedded in online games could contribute to learners' communicative skills, as well as how they can communicative strategies to achieve meaningful communication among peers. Therefore, future studies can explore and delve into the importance of game-related tasks on learners' communicative competence. In addition, this study focuses only on game-related tasks and how it influences language learning, as it does not differentiate nor focus on the age

of the learners. Therefore, future studies could explore how the learner's age influences their DGBL experience. Additionally, the selection of relevant articles for this review was confined to the results yielded by the five databases as mentioned in Figure 1. There may be publications related to the scope of the present review that was not selected. In line with that, future systematic reviews should consider including more databases to expand the scope of review.

In conclusion, with proper supervision, online games could be utilised in an educational context as a supplement to the traditional approaches to language learning, which many are currently deemed to be ineffective and irrelevant, particularly in the current era where most teaching and learning sessions take place in an online environment. Game-related tasks that are embedded in online games are far more engaging as it offers an immersive virtual interactive environment that could potentially promote learners' intrinsic motivation to learn languages with their peers during game-play sessions.

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