Elements of digital media in vocabulary remote-learning achievement

Yune Andryani Pinem[1], Andi Dian Rahmawan[2]
[1]Department of Transportation Management, STTKD-School of Aerospace Technology, Yogyakarta, Indonesia
[2]Department of English Education, University of PGRI, Yogyakarta, Indonesia

Article Info	ABSTRACT
	The urge of finding the most suitable method of remote teaching in a pandemic situation has become the center of recent studies. Equipped with instructional scaffolding, the absence of a teacher as a mentor in an asynchronous online class could be replaced by more interesting media for students' self-study. This study was to look at games, songs, and a movie as media to enhance students' achievement in English vocabulary. Further, elements in each media were observed along with students' perceptions to explain the affected area in detail. This descriptive quantitative study used paired samples t-test toward students' post-test scores of a control group (n=100) and an experimental group (n=100) in vocabulary. Students' perception of taking media as learning tools in experimental class was measured in a questionnaire to explain the results. Results showed that the significantly experimental group outperformed in the final score. Trend on students' perception in an experimental group toward these teaching media involved shared and specific features in media design, psychological and pedagogic elements. Further, it turned out that some primary and subsidiary features in games exceeded two other media (songs and movies) in vice versa generating some recommendations for future improvement.

Corresponding Author:

Yune Andryani Pinem
Department of Transportation Management, STTKD-School of Aerospace Technology
Parangtritis Street KM. 4.5, Bantul, Special Region of Yogyakarta, Indonesia
Email: j.andryani@gmail.com

1. INTRODUCTION

The emergency remote learning during the ongoing COVID-19 pandemic penetrates into smart learning environments (SLEs) which provide room for students to perceive learning using technology. Various platforms are adopted to support e-learning as alternatives to substitute conventional face-to-face modes of education. However, adjusting teaching-learning to an online platform that fosters self-regulated learning (SRL) results in distress [1], anxiety [2], and burnout [3]. Thus, it is essential to continuously observe and plan strategies to design SLEs which are motivational and enjoyable [4], [5].

Connected to technology, teachers are able to facilitate learning activities with information, communication, and technology (ICT) based media. If teachers select significantly proven media, learning objectives can be obtained in easier and psychologically less destructive ways. In less monitoring learning circumstances of online classes, selected media should be compiled with guidance and instruction to reassure SRL. Thus, this study is conducted to look at three media types of games, songs and lyrics, and a movie as alternative learning media for students to accomplish English vocabulary enlargement.

Media (Latin)–the plural form of medium–is one of the channels to convey a certain purpose whether to deliver or gain information. Learning media is everything that can be used by teachers or students as a process to accomplish a level of learning achievement. When it comes to Edgar Dale's cone of experience, people learning activities determine their learning process and outcome. Thus, depending on class sessions to be conducted merely, lecturing is barely possible when the utmost learning outcome is highly anticipated as in "Kampus Merdeka" program by the Ministry of Education and Culture [6]. Reading activities categorized as Rudi Bretz's visual media on the Dale's pyramid's tip is considered as the component that least contributes – 10% only – to the whole learning outcome. Therefore, combining several components of learning activities is expected to create a bigger impact on learning outcomes.

However, according to some of the recent surveys, media selection to connect the content and objective of learning to the learning media is still problematic among teachers. What is considered computer-based teaching and learning is merely a transfer from printed to digital media with a similar appearance and minimal interaction. Thus, their media preference is generated to the presentation platform such as PowerPoint only. Low teachers' competence and poor education facilities in ICT are some reasons behind this circumstance [7]–[9].

Shifting learning media from Bretz's taxonomy of audio, visual, and/or motion only and its' derivation (audiovisual motion, silent audiovisual, semi motion audio, visual motion, silent visual, semi motion, audio, and print) to technology-based learning is the desired approach of Education 4.0. Integrating technology-based multimedia into any language teaching and learning activities has the potential to transform ways of learning as it has been proven effective in many recent studies. Running ICT-based applications can foster interest since it is fun, interactive involving multi senses [10] mostly for early, primary, secondary education and also at a certain level for university students [11]–[13], teachers [14], and applicative for job seekers [15]. Technology-enhanced learning environments afforded students opportunities to use and learn the language in meaningful interactions with other students, texts, and teachers through immediate and sustained access to multimodal content [16], [17].

A massive move in education occurs in migrating conventional face-to-face classroom design to digital online environments to cope with the pandemic situation. In a remote learning environment, ensuring the effectiveness of online learning can be done by developing the students' SRL skills. Such skills, regardless of their' ineffectiveness due to procrastination on six sub-constructs of self-regulated online learning in lockdown situations [18] are still considered one ultimate focus in future education [19]. The SRL framework of Zimmerman which most prominently circulates in educational psychology indicates the proactive seeker type of students to define the character of its learners. Metacognitive, motivational, and/or behavioral strategies are a key feature of most definitions of self-regulated learners along with self-regulated feedback, and interdependent motivational processes [20]. Learners who are considered the biggest agent in the SRL are given a great level of control over their online class environments. The concept of autonomy in SRL describes students' efforts to meet the challenge of learning a second or foreign language using content-based language instruction (CBI), content and language integrated learning (CLIL), and the understanding by design (UbD) instructional model [21]. Applying explanatory factor analysis in a study generates that SRL has an influence on satisfaction and academic performance in several useful dimensions of environments such as environment structuring, computer self-efficacy, social dimension, and metacognitive strategies [22].

Opportunities that technology affords to improve learners in SRL can be expanded by educators. Utilizing technology embedded in massive open online courses (MOOC), SRL has been successful to support learner and course completion in various circumstances [23]–[25]. On the other hand, facilitating students with technology to foster their SRL must be done by carefully selecting the appropriate medium and adjusting it to pedagogical purposes [26]. The structural equation model in a recent study, online SRL, predicts students' intention to participate in flipped classroom (FC) learning as they perceive the quality of the usefulness of this learning activity compared to a physical classroom such as in a vocabulary class.

Regardless of the importance of vocabulary in pursuing a language proficiency, fewer learners' knowledge of learning techniques causes problems in dealing with learning difficulties. Thus, for years many studies test a variety of classroom techniques involving learning aids to develop more powerful and effective vocabulary programs for students with varying conditions. These techniques are divided into four categories of decontextualizing, semi-contextualizing, fully-contextualizing, and adaptable [27].

In more recent studies, e-platforms emerge to support learners' vocabulary growth enabling technology-driven techniques to take place in online tools. However, being advantageous in terms of easy-to-use, effective, and challenging [28]–[31], online-based learning tools can cause additional problems when conducted in a synchronous online classroom. Some online helping tools highlight repetition as the leading aspect to support vocabulary enhancement. Repetition is performed through the interaction with the tool within an amount of time and frequency. Thus, activities and results may vary from one learner to another. Since an online class limits time, learners cannot accomplish learning objectives synchronized with others.

In performing particular vocabulary learning techniques in an online class, teachers may consider workplace learning in integration with an asynchronous online session. By this, learners can perform learning activities using "pockets of time" created by the new Industry 4.0 work system. Eventually, teaching-learning activity is done within the asynchronous timeslots promoting increased automation, monitoring and control, and autonomous systems [32].

2. RESEARCH METHOD

For this research, two groups of freshmen (n=200) from one of the private vocational schools in Yogyakarta, Indonesia is divided equally into the control group (CG) and the experimental group (EG). In this school, the English subject in the half first semester is purposely designed for vocabulary enrichment. Since state or big private universities are well accredited, their student's input is considered high in quality with a well-established student's admission filtering system. On the other hand, students' input in many other private vocational schools is still low. Thus, it is curriculum-oriented to set uniformity of English in students' vocabulary levels in the first year.

Only students from EG get additional three media as learning tools in six meetings of its vocabulary online class while students from CG get regular classes with online platforms. Each medium has a subject of vocabulary enhancement which is different by-word class (LSoT for nouns, 5-songs and lyrics for adjectives, and a movie for verbs). After 6-meeting of drilling, both groups are given a similar set of vocabulary tests designed by a 10-year experienced teacher. According to the type of learning medium, the test is not only formulated to measure students' level of vocabulary size after experiencing a training but also additional key features provided by each medium. Later, the final score collected from the post-test is analyzed using paired samples t-test.

All key features from each media (game, songs, and movies) including media design, psychological, and pedagogical factors are formulated into a set of statements in a questionnaire. Using a 5-point Likert scale from strongly agree to strongly disagree, each statement is weighed by students from EG (n=100) to represent their perspective about this additional media as learning tools. The score collected from this questionnaire is later discussed to portray trends. An additional column in the form of an open question is provided to ask students' suggestions for the media.

Based on Brown's vocabulary assessment technique – picture-cued identification [33], one online game for vocabulary recognition is chosen. Little shop of treasure (LSoT) is a web-based hidden object game that drills students to identify and match wordlist to its referencing picture [34], [35]. This game conveys learning material of semantic functions related to words, terms, signs, or symbols [36]. There were 5 out of 9 themes (diner, garden, farmer house, sporting goods, and music store) which consist of 360 words or 71 words per theme are selected for students to learn. One of the themes is diner as presented in Figure 1, consisting of vocabularies commonly found in a diner.

Figure 1. Little shop of treasure: Diner

Alike other digital games, LSoT is designed to provide key features such as practical instructional design, ease of use and access, high-qualified graphics with interesting sound, and challenges with the time limit and range of difficulty level [37], [38]. Components of the virtual world can enhance context that supplies learners with many opportunities for effective vocabulary growth [39]. Instruction at the beginning and throughout the game eases off users in this case learners to play the game independently without the teacher's assistance. Since the game is available online, everyone with an internet connection can access the site easily. If necessary, it is also available offline by subscribing which makes it possible to play for an unlimited duration. Highlighting pictures and glossary as the subject lesson, graphic design is in high definition along with supporting sound to make it audio-visually enjoyable. Challenge is made by adjusting to the time limit and level of the game. When dealing with unfamiliar words anywhere anytime, a mobile dictionary is useful as a helping tool [40]. Since digital game-based learning (DGBL) is techno-based, having this type of dictionary speeds the mission accomplishment.

Prensky's digital game-based learning mostly is related to psychological and pedagogic factors to promote interest in the study for "gamer generations" [41]. In psychology, DGBL is considered motivational, affective, and fun [42]. Once learners are motivated, certain behaviors such as focus and engagement are nurtured throughout the activities [43]. In pedagogic, DGBL offers exposure to the target language, increases engagement, enhances self-learning [44], and spatial skills [34]. Previous studies presented key features in using digital games as teaching-learning media. Those key features represent indicators categorized into media design, psychology, and pedagogic. Key features as indicators in digital games as media are seen in Table 1.

Table 1. Elements in digital games

| Media design | Key features | |
	Psychology	Pedagogic
Ease-of-use and access	Affective	Target language exposure
High-quality audio-visual	Fun	Instructional strategy for self-learning
Practical instruction	Focus	Spatial skill training in vocabulary booster
Challenging with time limit and difficulty level	Engaging	Dictionary utilizing
Unlimited duration, frequency, and source to play		

Source: [34], [37]–[44]

Vocabulary is found as an intersection component between reading and listening comprehension [45]. Furthermore, integrating two or more skills in one teaching-learning activity has been proven empirically significant in enhancing students' performance. Combining visual and sound media, songs and lyrics gives the student oral communication skills training which integrates listening, speaking, and pronunciation as reciprocally interdependent oral language processes [46], [47]. In this case, since listening is strongly correlated to speaking [48] while enjoying listening to a song, learners can simultaneously practice their pronunciation to be native-like and speaking fluency of spoken text by singing along [49]. Integrated activity can be done in word-sound matching through reading the lyrics and memorizing-understanding by having word recognition utilizing a dictionary [50]. Using lyric lines is categorized as extensive reading [51] and involves the process of finding and familiarizing with new words and their meaning using a dictionary. Among kindergarteners with and without specific language impairment (SLI), reading while comprehending words in an e-book with a dictionary contributes well to new word learning [52].

By selecting popular songs to listen to, teachers can assign vocabulary learning accordingly to the lesson objective. By giving freedom to students to choose an online platform or more as helping tools, learning activities can be adjusted to what is the most suitable environment for them. Considering the short duration of a song on average, students can play the song in a loop without a time limit. Repeated vocabulary load especially in chorus sections makes it lighter than the rest of the song. Catchy rhythm and melody along with meaningful lyrics are memorable making it enjoyable, fun, and easier for lower-level English as a foreign language (EFL) students to learn [53]. Previous studies present key features in using songs and lyrics as teaching-learning media. Those key features represent indicators categorized into media design, psychology, and pedagogic. Key features as indicators in songs and lyrics as media are seen in Table 2.

Table 2. Elements in songs and lyrics

Key features		
Media design	Psychology	Pedagogic
Flexible, easy access and unlimited choice in platform	Affective environment	Learning objective
Unlimited duration and frequency	Fun and enjoyable	Native like sound duplicating
Light vocabulary in chorus	Engaging and catchy	Speaking fluency
Melodic and meaningful	Focus	Extensive lyrics reading
High quality in audio		Dictionary utilization

Source: [46], [47], [49]–[53]

Utilizing audio-visual input has become one of the preferences in vocabulary learning since it is attractive and enjoyable [54]. Increased level of interest which is stimulated by a teacher-designed movie as learning media largely improves students' ability such as in speaking skills including functional vocabularies, pronunciation, native accent, and even slang words [55]. Using the movie, learners can also imitate correct diction and pronunciation to avoid misunderstanding in communication using a foreign language [56]. In another case, different types of subtitling in three French videos as learning environments give a variant of result in students' scores on recognition and meaning recall tests [57].

Champoux recommends applying a movie in the learning process since the movie promotes viewers' response to well-acted and well-directed film material in dramatic scenes linked to reality. Consequently, it is psychologically engaging and fun for learners to learn about particular concepts and cultures [58]. On a daily basis, every type of video is provided online as on YouTube or other vlogs (video blogs). Learners can simply be connected to unlimited sources easily using a smartphone or computer without the extra expense of purchasing. Watching this media is also flexible in time and has no limit on how many times a learner can watch it. If necessary, new foreign words can be consulted in the dictionary while matching them to the contextual references from the video [59]. For this study, a 43 minutes cyber-bullying theme is chosen from "CSI-Cyber Season 1 Episode 7 URL, Interrupted" [60].

Previous studies presented the key features in a movie that are applicative to be implemented in media-assisted vocabulary learning. Key features are classified to elements of a movie in media design, psychology and pedagogic. Key features as indicators in movie as media are presented in Table 3.

Table 3. Elements in movie

Key features		
Media design	Psychology	Pedagogic
Techno-friendly	Affective portray of reality	Functional/communicative vocabulary
Well-directed scene	Fun and enjoyable	Native pronunciation
Unlimited online sources	Focus	Accent
Flexible in time and frequency of watching	Engaging and impressing	Slang
Provided with subtitle		Dictionary use
High-quality audio-visual		Culture

Source: [54]–[59]

3. RESULTS AND DISCUSSION

3.1. Characteristics of the respondents

The control group and experimental group consist of regular students (n=200) from one of the private vocational schools in Yogyakarta who take English I (vocabulary and grammar) in their first semester. These students are divided into four classes (A – D) consisting of 25 students per class. Class A and B are assigned to the controlled group while Class C and D are assigned to the experimental group. Some social backgrounds are described as: i) Since they enroll at the same time, there is no difference in level by year between groups; ii) At the university level, freshmen also vary in age according to the age they registered. The age range of respondents is between 17 (the youngest) to 21 years old (the oldest). All of the oldest freshmen state that they take breaks between high school and university enrolment for various personal reasons; iii) Male respondents dominate both groups by a difference of fewer than 20 persons (CG=57; EG=53); iv) Indonesian status as the first language varies between respondents since many of them have ethnic language as their mother tongue. For this category of the respondent, Indonesian is considered the second language learned at school.

3.2. Vocabulary achievement in regular and media-assisted class

After receiving a similar period of vocabulary training, a series of assessments mainly to measure vocabulary improvement is done for the control group and experimental group which are different in treatment. Students from each class receive the same question and are scored. Supplementary assignments are

designed to assess pronunciation, listening, speaking, and personal value toward social problems. To look at how both classes differ in the post-test, a paired-samples t-test is used and analyzed.

With p-value equal to .092 which is not less than alpha equals to .05 for JB normality test, the data set matches normal distribution because null hypothesis is failed to reject. Therefore, the data set is qualified to be conducted in paired samples t-test. The result of the t-test is shown in Table 4.

Table 4. Result of the t-test

	EG Post-test	CG Post-test
Mean	87.200	75.257
Variance	48.694	53.550
Observations	100	100
Pearson correlation	0.059	
Hypothesized mean difference	0	
df	99	
t Stat	7.205	
P(T<=t) one-tail	.00	
t Critical one-tail	1.691	
P(T<=t) two-tail	.00	
t Critical two-tail	2.032	

There is 11.943 points difference between the post-test mean of EG and CG. With a bigger point of variance in CG, students in EG are closer to uniformity on the final score. Consulting two-tail t-crit to t-table with alpha=.05 and df=99, result turns out to be 2.032>.975. Since the absolute value is greater than t-table, the null hypothesis is rejected which means there is a statistically significant difference between the mean post-test of EG and CG.

3.3. Perception of elements in media

Features provided in elements from each learning media depict similarities and differences. Some features belong to all media of games, songs and lyrics, and a movie, but some other features belong to certain media only. Similarity and difference can be found in all elements including media design, psychological, and pedagogic factors.

3.3.1. Features in media design

To support unsynchronized online learning, media design for games, songs and lyrics, and movie share the same features of ease of use and access. Nowadays, kids spend time interacting with online media and technology longer than their time at school which makes them technology literate [61]. Considering respondents in EG (freshmen 17-21 years old) of this study who are familiar with technology, simple instruction or link sharing to the media access is easy to follow. Another feature shared by all media is the duration and frequency to play them. Joining an unsynchronized online course gives freedom of time to a self-study which can be time-limited in the regular course. Applying games, songs and lyrics, and a movie as learning sources, students have unlimited extra time and frequency. The next feature which can be found in all media is the unlimited similar source. It is not difficult to change the media with other games, songs, or a movie from the internet as a vast source if the substitution shares similar characteristics or themes. The last similarity is shared slightly differently since it involves audio-visual features in games and a movie but audio only in songs. Even though songs and lyrics can be found in the form of a music video, matching targeted words in lyrics to music videos is not always possible to do.

Specific features belong to only certain learning media making different designs one another. Practical instruction to accomplish a mission in digital games along with time and level challenges are attached to games and not available in the other two. Repeatedly easy words in the chorus can be found in songs and lyrics along with touching words and pleasing melody. In a movie, vocabulary learning can be done while observing scenes and subtitles as context. The students' perspective on features in media design is shown in Table 5.

Except for the feature of unlimited similar sources for games, students' perception toward other shared and specific features in design results in mean score above 4 (agree) out of 5 on Likert scales in all media. This finding is in accordance with previous studies which recommend media as learning tools for its design. It is proven that shared and specific features on media design in games, songs and lyrics, and movie are compatible to use in vocabulary learning class. Ease of use and access in songs and lyrics, the highest mean score, is the prominent features in media design according to students.

Table 5. Students' perspective on features in media design

Features of media design	Students' perception (Mean)			Students' perception (%)		
	Games	Songs	Movie	Games	Songs	Movie
Shared features						
Ease of use and access (Techno-friendly)	4.29	4.58	4.48	17.08	17.30	17.18
Unlimited duration and frequency to play	4.18	4.48	4.19	16.63	16.93	16.07
Unlimited similar online sources	3.98	4.48	4.42	15.86	16.93	16.93
High-quality audio/audio-visual	4.13	4.23	4.48	16.44	15.96	17.18
Specific features						
Practical instruction	4.10	-	-	16.31	-	-
Challenging with the time limit and difficulty level	4.44	-	-	17.66	-	-
Light vocabulary in the chorus	-	4.35	-	-	16.44	-
Melodic and meaningful	-	4.35	-	-	16.44	-
Well-directed scene	-	-	4.39	-	-	16.81
Provided with the subtitle	-	-	4.45	-	-	17.06

Among all features in design, students consider three media shared features of ease of use and access, which consistently helps in giving main benefits to their vocabulary learning using games (17.08%), songs and lyrics (17.30%), and movie (17.18%). The percentage of students' perception of this feature is the highest for songs and lyrics and the lowest for games. According to some students' comments in the suggestion column, a game requires a longer time to play to gain the highest result when compared to a song and a movie. In addition, some students also complain about internet access coverage in remote areas and technical difficulty accessing the game offline without subscriptions which are considered costly. These problems are proven to be demotivating in a technology-driven task for students [62]. As a result, online sources of similar games (15.86%) are the lowest percentage according to the students. Meanwhile, a movie also takes more time than a song. Thus, even though it is only shown in a few comments (song=3; movie=4) when it comes to the audience's preference, an uninteresting song is more bearable than an uninteresting movie.

Specific features also dominate students' perspective in media design such as time limit challenge and difficulty level (17.66%) in games and subtitles in the movie (17.06%). Contrariwise, these special features (light catchy words and melodic meaningful lyrics) are slightly less favorable than shared features in songs and lyrics. Some students (n=3) in the comment prefer different genres of songs to be used as a learning tool.

3.3.2. Features in psychology

Psychological factors in learning can be related to learners' affective factors such as motivation and anxiety [1], [63]. In an SLR scheme during pandemics that is penetrated into SLEs, environmental motivations are low and external motivations are dominated by reward for flying color scores and fear of academic year loss [62]. Utilizing media as learning tools can boost motivation that leads to strong SLR behaviors such as focus and engaging learning [43]. Unlimited form of SLEs creates opportunities for learners to choose the most suitable method to make affective and fun learning activities.

Students agree that dominating features in psychology is the focus in games with the highest mean score closing to 5 on Likert scales. Regardless of its mean score which is the lowest, engaging as features in Games is only slightly below 4 out of 5. It is proven that students are driven by all features in psychology factors to accomplish vocabulary class using these media. The evaluation of psychology factors is shown in Table 6.

Table 6. Students' perspective on features in psychology

Features of psychology factors	Students' perception (Mean)			Students' perception (%)		
	Games	Songs	Movie	Games	Songs	Movie
Affective	4.13	4.23	4.23	24.20	24.62	24.39
Fun	4.42	4.45	4.35	25.90	25.94	25.14
Focus	4.58	4.26	4.39	26.84	24.81	25.33
Engaging	3.94	4.23	4.35	23.06	24.62	25.14

In this study, each media gives a varying degree in improving students' psychological capital. The key feature of fun dominates in all media: games (25.90%), songs (25.94%), and the movie (25.14%). Nevertheless, besides being fun, students majorly agree that concentration plays the highest role of psychological factors in the learning process using games (26.84%) and the movie (25.33%). Regardless of the objective of this learning tool to enrich vocabulary size, students (n=5) posted some comments about the

hidden object games technique which is considered challenging. It is a focus required since they mention how difficult it is to find small hidden objects. In the movie, this feature peaks students' perception signifying another related feature which is the plot reflecting reality in form of well-directed scenes. Interest in movie plots is motivated by a personal preference in a movie's genre which can be engaging (25.14%). To comprehend the story in a movie requires concentration to watch.

3.3.3. Features in pedagogy

Sharing the same learning objective which is to enhance students' vocabulary in nouns, adjectives, and verbs, this feature can be found in all media (games, songs and lyrics, and the movie). Closely related to this objective is the use of a dictionary to find meaning both online (web or app-based) or printed version. The additional shared feature is found in songs and a movie since they are delivered with audio-visual design. Attached to this design, songs and a movie are available to introduce and assess pronunciation skills. In addition to that, a special shared feature between games and the movie is characterized by target language or cultural exposure which puts context in each media. Since both media are aimed to improve students' vocabulary accomplishment in English, habits or manner of English language country are attached naturally to the media. In games, tools or things normally used in western countries may have no resemblance to other languages. Likewise, the living style pictured in a movie can be also considered unfamiliar to people from other countries. In this case, this special feature is potential for cross-cultural understanding (CCU) subject learning.

Games, songs, and a movie also highlight different additional specific features. Games are provided with technology-driven instructions on how to accomplish the mission independently. Without a teacher to guide, games as media is capable of functioning as a full-time supervisor. Vocabulary learning using games as a tool can be done independently by simply following these instructions.

Applying songs as learning media, specific features in pedagogy integrate listening and speaking skills to the learning objective to experience native pronunciation. Pronunciation can be regarded as the dual-operationalized agent of speaking and listening assessment for L2 [49]. Thus, it is possible to deliberately give speaking practice and assessment. Since vocabulary assessment's technique in word recognition can be done by listening to a song along with reading the song's lyrics line [64], the next pedagogic feature in songs and lyrics comprises extensive reading skills.

Introducing western culture in a movie involves spoken language functioning in simulated natural acts. Scriptwriting reflecting social reality among the western community is directed thoughtfully closer to the real western community. Related to the language, unavoidable accented English appears according to the social background of the story. It can be in the form of received pronunciation (RP) in British or General American (GA) and other possible accents [65], [66]. When it comes to American English, spoken language materializes in slang (an informal language variation) as a form of natural conversation. Both features (accent and slang) become additional characteristics in movies and are possible to explore more as subject learning and assessing purpose.

Considering mean scores on all features in pedagogy factors as shown in Table 7, reinforcing vocabulary enhancement using media is supported by students. It is proven to intensify learning objectives in a vocabulary class using all media with mean scores above 4 out of 5 on Likert scales. Utilizing games as vocabulary learning media is strongly supported by students since it gives mean score slightly below 5 from students' perspective. Regardless of its mean score which is categorized as enough (3.97), the movie as media to refurbish native pronunciation as a feature is the lowest among other features.

Table 7. Students' perspective on features in pedagogy

Features of pedagogy factors	Students' perception (Mean)			Students' perception (%)		
	Games	Songs	Movie	Games	Songs	Movie
Shared features						
Learning objective	4.58	4.45	4.42	25.87	20.72	17.30
Dictionary use	4.52	4.39	4.39	25.50	20.42	17.17
Native pronunciation	-	4.19	3.97	-	19.52	15.53
Target language/Culture exposure	4.35	-	4.39	24.59	-	17.17
Specific features						
Instructional strategy for self-learning	4.26	-	-	24.04	-	-
Speaking fluency	-	4.19	-	-	19.52	-
Extensive lyrics reading	-	4.10	-	-	19.07	-
Accent	-	-	4.35	-	-	17.05
Slang	-	-	4.03	-	-	15.78

In accordance with the main purpose of these learning media which is to boost vocabulary size, students' perspective on features in pedagogic factors is dominated by objective learning. All media (games=25.87%, songs=20.72%, and movie=17.30%) are considered successful in enlarging students' vocabulary with new words in nouns, adjectives, and verbs. Compared to dull vocabulary learning, a significant difference has been proven among students' final scores in EG which is supplied with media treatment. Classes with LSoT are also significantly progressing from pre-test to post-test [35]. Further, students from EG comment that the media makes learning and memorizing new words easier. Emphasizing games' design which provides the highest number of target words compared to songs and a movie, students agree that the learning objective is highly achieved by employing games as a learning tool.

In some studies, the dictionary gives a significant on toward vocabulary acquisition [67], [68]. In this study, students' perspective places dictionary utilization (games=25.50%, songs=20.42%, and movie=17.17%) in the second to give benefit in achievement. Aside from the main activity, students agree that dictionary consulting side-by-side joins the media running for word learning. In addition to that, students comment that an online dictionary is the most preferable for being simple and practical.

Specific features in pedagogy emerge as a result of language integrated learning between vocabulary, listening, reading, speaking, and cross-cultural understanding. Hence, each medium has special characteristics making it different from others. However, regardless of their side benefits, these additional learnings are not prominent according to students' perception since the main objective of learning is to aim for vocabulary enhancement.

Some problems to solve for future consideration occur related to these features are summarized into five topics. First, music and phonology are proven to have similarities and correlations [69]. However, duplicating English sounds in a song can be challenging if the student has no/less musicality or interest in singing. In the movie, students listen and practice seven times in the mean (the most 29 times n=1, the least 1 times n=1) actress's line to duplicate her pronunciation and intonation in approximately exact time. Many students still consider this activity difficult yet fun to do. Therefore, they are willing to do it knowing that its result (pronunciation: song=19.52%; movie=15.53%) may not be perfect.

Second, learning English as part of the culture cannot be separated from western style, habits, and identity. Western cultural identity in shared features (games=24.59%; movie=17.17%) comes in the form of tools and things scattered in LSoT themes (diner, garden, farmer house, sporting goods, and music store). In the movie, students point out some words to describe the directed acting as convincing, hard work, teamwork, fast deciding, quick response, solution-oriented, bullying, and online addiction. Referring to the theme provided by the movie, those words are all relevant. A particular theme from a chosen movie can deliver targeted culture for the student to learn.

Third, even though instruction supports DGBL as in Acquah and Katz [37], for beginner learners, it is a double strike since instruction in LSoT is in English. This can be as challenging as the core mission, making students' perspective on this in games (24.04%) is the lowest. Clarifying the instruction is time-consuming. Therefore, the teacher must take this into careful consideration.

Forth, extensive lyric reading in songs as media is also considered less prominent to give benefits. Bearing in mind the previous finding that an online dictionary is helpful to understand new words, light vocabulary in chorus features in song design also determines students' perception. Most students agree that words in lyrics are relatively easy to understand.

Fifth, the last two specific features that appeared in the movie have the least percentage of students' perspectives (accent=17.05%; slang=15.78%). Some students are interested in mastering RP in English British inspired by some popular British movies. Meanwhile, accented English appeared in EFL classrooms which is influenced by non-native teachers or adult models [70], [71] and determined by learners' domain results in non-standard accents. Nevertheless, the purpose of learning pronunciation is to have acceptable communication in this English case using RP or GA. Non-standard accents are decent to simply know yet not necessary to learn. On the other hand, as one of the language varieties, slang is segmented into a specific community to keep its secrecy [72]. Looking at its description, it is commonly acknowledged that not many people may generally identify it. Generally, scripted acts alone are inadequate to be applied as a source for this language unless it is thematically meant to be (a movie about a profession or particular slang community). Eventually, in an integrated learning, learning and assessing slang using movies serve as a beneficial supplement.

4. CONCLUSION

Technology-based learning appears as an impulsive transition that strikes face-to-face teaching-learning activities transforming them into online learning platforms due to pandemic situations. Observing and planning strategies to design the most suitable class activities to grow learners' vocabulary levels

continue to be done by utilizing learning media. Digital games, song and lyrics, and movie as learning media offer features involving media design, psychology, and pedagogy factors.

Significantly, the result shows that after experiencing different learning environments in the same period of training, the experimental group outstands the control group in post-test for having these media. Learners in experimental group are able to undergo learning activities that are easy, challenging (by time and level of difficulty), subtitle supported, fun, and focus-required to do. Shared and specific features emerge in pedagogy factors in integrated learning processes enlarging learning objectives. However, primary or subsidiary features on these processes depict some features to be more successful than others with recommendations for future works.

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BIOGRAPHIES OF AUTHORS

Yune Andryani Pinem 🆔 📇 SC ⬡ is currently a lecturer at the Department of Transport Management, STTKD-School of Aerospace Technology, Yogyakarta. She graduated from English literature majoring in teaching, STBA-LIA Yogyakarta. She had her master in Linguistic majoring in phonology from the University of Gadjah Mada Yogyakarta. Her main research directions are phonology; teaching-learning techniques using media; healthy literacy. Relating to her research area, she has written and published 14 articles in prestigious journals and proceeding of the international conference. She can be contacted at email: j.andryani@gmail.com.

Andi Dian Rahmawan 🆔 📇 SC ⬡ is currently a lecturer at the Department of English Education, University of PGRI, Yogyakarta. He graduated from English literature, University of Sebelas Maret, Solo. He had his master in Linguistic majoring in morphology from the University of Gadjah Mada, Yogyakarta. He can be contacted at: ad.rahmawan@gmail.com.