

# The Integration of Bilibili in Teaching English Culture Course

Yubo Zhang\*

Received: March 27, 2025. Revised: July 12, 2025. Accepted: July 18, 2025

## Abstract

**Purpose:** This study investigates the effectiveness of Bilibili-integrated blended teaching in English culture course, comparing it with traditional teaching method to evaluate its impact on students' learning performance and perceived learning outcomes. **Research design, data, and methodology:** A quasi-experimental design was used, involving 65 out of 98 second-year English majors from a southwestern Chinese university. Participants were divided into a control group (traditional instruction) and a treatment group (Bilibili-integrated teaching). The primary instrument was a post-test, supplemented by a questionnaire to assess perceived learning in the treatment group. **Results:** The results show that Bilibili-integrated teaching significantly improved student performance in knowledge acquisition, analytical thinking skills, and knowledge application compared to traditional teaching. Effect sizes ranged from moderate to large (Cohen's  $d = 0.533-1.009$ ), with  $p$ -values (0.003, <0.001, 0.030) indicating statistical significance. The treatment group also reported high perceived learning gains (Total mean = 4.82, total standard deviation = 0.436), particularly in conceptual understanding and critical thinking. **Conclusions:** The study supports Cognitive Load Theory of Multimedia Learning and Social Cognitive Theory, highlighting the effectiveness of multimedia learning and social interaction in enhancing cognitive load management and student engagement. The findings suggest that structured Bilibili integration can positively influence English education and class participation.

**Keywords:** Bilibili-integrated teaching, English culture course, learning performance, perceived learning

## 1. Introduction

In recent years, digital technology has become an integral part of society, profoundly influencing technological advancements, economic growth, and social structures. In education, digital tools such as virtual reality (VR) and new media platforms have been widely adopted to enhance teaching efficiency and student engagement (Gopinathan et al., 2022). This integration has transformed the learning process, making it more interactive, dynamic, and engaging (Okoye et al., 2023). Among these tools, new media - often referred to as social media or multimedia - has demonstrated significant effectiveness in teaching and learning (Chong et al., 2022; Perez et al., 2023; Wu, 2024). Studies have highlighted its role in reinforcing English language acquisition and cultural understanding. For instance, Yulian et al. (2022) found that multimedia enhances speaking skills, while Hasan et al. (2020) reported

that new media tools positively affect motivation among tertiary-level English learners. Similarly, video-sharing platforms like YouTube and TikTok have also emerged as valuable educational resources (Berk, 2009; Buzzetto-More, 2012; Jordaan & Jordaan, 2017; Maziriri et al., 2020). Research has demonstrated their effectiveness in English instruction, with studies showing improvements in pronunciation (Purnamasari, 2018), listening skills (Silviyanti, 2014), and speaking abilities (Van & Mai, 2024). However, the potential of Bilibili - China's counterpart to YouTube - remains underexplored, despite its growing recognition for educational use (Chen et al, 2021). Some studies suggested that Bilibili could enhance learning outcomes and reduce negative learning effects (Lin and Chiang 2023; Lin et al., 2024), yet its role in English education for Chinese college students required further investigation.

Bilibili excels in structured, interactive ("danmu" drives engagement), and culturally adaptive English learning,

\*Yubo Zhang, Ph. D. Candidate, Graduate School of Business and Advanced Technology Management, Assumption University of Thailand, Thailand.  
Email: yz\_zhang203@sina.com

© Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

while YouTube/TikTok suit immersion or casual exposure. For Chinese students, Bilibili's hybrid model (education +community) fosters sustained progress. Despite these unique features, research on its application in English education for Chinese college students remains limited. Even fewer studies have explored its integration into English language and literature programs, and almost none have examined its use in Learn About UK & USA - a required course for English major sophomores at Chinese universities. Bilibili's impact on knowledge acquisition, knowledge application, analytical skills, and perceived learning, has not been systematically studied.

Achieving a high level of English proficiency has long been challenging for Chinese college students. Since Learn About UK & USA involves extensive reading and memorization, integrating engaging educational tools is critical to enhance student interest, learning efficiency, and academic performance. Given its vast collection of authentic English videos and interactive features, Bilibili presents a promising solution.

Our study provides empirical evidence on the effectiveness of Bilibili-integrated teaching compared to traditional methods in English culture course at a Chinese university, which shows that Bilibili's educational advantages over traditional teaching methods for English majors by examining its impact on knowledge mastery and application, analytical skills, and overall learning experience using a post-test as the primary measurement tool and a questionnaire as a supplementary tool. Through data analysis, the research offers a comprehensive assessment of Bilibili's great effectiveness as a teaching tool in this specific educational context.

There are two main research questions in the study:

1. What is the difference between the Bilibili-integrated teaching method and the traditional teaching approach in terms of students' learning performance?
2. What are the students' perceived learning outcomes from the integration of Bilibili in the Learn About UK & USA course?

## 2. Literature Review

### 2.1 Information of the Technology

Digital technology refers to the use of digital systems and applications to collect, process, and transmit information in binary form, encompassing computers, the internet, mobile devices, and digital media (Fitzgerald et al., 2013). In education, digital technologies such as Learning Management Systems (LMS), virtual reality, and collaborative tools enhance teaching efficiency and student

engagement, creating more interactive learning experiences (Gopinathan et al., 2022; Okoye et al., 2023).

New media, including social media and digital multimedia, has proven effective in teaching and learning. Its key functions - video-sharing websites and online interactive communities - cater to diverse learning styles, enhance understanding, and encourage collaboration. The ability to create personalized content further engages educators, revolutionizing traditional education and improving outcomes (Chong et al., 2022; Hosen et al., 2021). Furthermore, recent studies have demonstrated that new media, including social media and multimedia, is effective in enhancing English language acquisition and cultural understanding.

Wang and Low (2024) conducted an online survey of 348 Chinese EFL undergraduates, finding that extrinsic motivation had a stronger effect on English reading self-efficacy and performance compared to intrinsic motivation, highlighting social media's potential to improve English learning outcomes in China. Yulian et al. (2022) discussed the growing role of multimedia in language learning, particularly for EFL students in Indonesia.

Currently, video-sharing platforms like YouTube and TikTok have become powerful educational tools, offering diverse content and enabling video creation by both teachers and students. Recently, extensive research has been conducted on integrating video-sharing platforms, especially YouTube, into EFL instruction. Fernández-Carballo (2021) explored Spanish students' attitudes towards using YouTube in English classes, finding positive feedback despite some drawbacks. Studies by Al-Jarf (2022), Hamad et al. (2019), and Juma (2021) further confirmed YouTube's effectiveness in enhancing speaking skills, helping students overcome challenges, improve test scores, and boost self-confidence. Moreover, TikTok helps students overcome challenges such as shyness and presentation anxiety (Muhammad, 2022).

While many studies have explored the role of YouTube and TikTok in EFL learning across the Middle East, Southeast Asia, and East Asia, research on Bilibili's potential for English education among Chinese college students remains limited. Bilibili, often called "B site," is a leading video-sharing platform in China, its functions as a research, presentation, and educational tool, offering a vast array of content suitable for various subjects and learners. Its comment feature encourages students to engage in discussions, enhancing their writing and critical thinking skills. Several studies have explored the role of Bilibili in education. Lin et al. (2024) investigated how Bilibili's "Danmu" feature enhances Chinese undergraduate students' self-directed learning in literature and comprehensive analysis, revealing that it significantly improves engagement by reducing feelings of isolation in online

learning. In English education, Li et al. (2023) found high student satisfaction with a Short Video-Assisted English Teaching Model on Bilibili. The study aims to address this gap by empirically comparing Bilibili-integrated and traditional teaching methods in English language and culture studies.

## 2.2 Theories Relate to the Research Design

Our study incorporated two theoretical frameworks: the Cognitive Theory of Multimedia Learning (CTML), and Social Learning Theory (SLT). Developed by Mayer (2024), CTML asserts that individuals learn more effectively through a combination of words and graphics than through words alone. It explains how multimedia instruction enhances learning by utilizing separate visual and verbal processing channels, which have limited capacity. To achieve meaningful learning, individuals must actively engage in information processing by selecting relevant content, integrating it into structured frameworks, and linking it to prior knowledge. CTML highlights three core principles - dual channels, limited capacity, and active processing - demonstrating how multimedia tools can optimize learning performance.

Expanding on observational learning, Social Cognitive Theory (SCT) investigates the role of social interaction in learning through observation and modeling. Developed in the 1980s, it describes the dynamic interplay among individuals, environment, and behavior, known as triadic reciprocal determinism (Bandura, 2002). Like Social Learning Theory, SCT views individuals as active participants who shape their environment rather than passive recipients of information. It introduces self-efficacy, which influences one's confidence in completing tasks and persistence in overcoming challenges (Bandura, 2012; Negara et al., 2024). SCT also emphasizes self-regulation, enabling individuals to guide their actions through self-reaction, self-reflection, and self-direction (Bandura, 2002).

The implementation of Bilibili uniquely combines CTML's cognitive load management (visual/verbal integration) with SCT's social learning (peer interaction), creating a dual-path learning system that reinforces both comprehension and motivation.

## 2.3 Information of Four Variables

Our study examined four variables - knowledge acquisition, analytical thinking skills, knowledge application, and perceived learning - to assess the effectiveness of the Bilibili-integrated blended teaching method and students' learning experiences. The first three variables evaluated the effectiveness of the blended teaching method, while the fourth variable measured students'

subjective learning experiences.

### 2.3.1 Knowledge Acquisition

Knowledge acquisition is the cognitive process of receiving, understanding, and integrating new information through activities like observing, reading, and practicing, enhancing memory and skills for future learning (Cherukunnath & Singh, 2022).

Studies have increasingly explored the impact of social media and multimedia on students' knowledge acquisition. Sivakumar et al. (2023) found that social media fosters knowledge sharing, motivation, and engagement, enhancing learning performance. Hayman and Smith (2023) identified trends in social media integration within undergraduate education, while Khan et al. (2021) highlighted its role in collaborative learning during COVID-19. Multimedia, including videos, boosts student engagement, confidence, and retention (Saini & Baba, 2023; Chan & Leung, 2016). Additionally, studies on video-based learning, such as Zahn et al. (2014) and Stahl et al. (2006), showed improved knowledge acquisition and positive educational outcomes.

### 2.3.2 Analytical Thinking Skills

Analytical thinking skills involve systematically breaking down complex information into smaller parts to identify relationships, draw conclusions, and solve problems logically. This mental process focuses on dissecting messages into fragments and establishing connections between various data forms, including statements, concepts, discussions, and descriptions (Hidayat et al., 2023).

In EFL education, Samadi et al. (2024) revealed that the flipped classroom approach significantly enhances learners' higher-order thinking by fostering engagement in measuring, analyzing, and creating. Moreover, analytical thinking skills support logical problem-solving, decision-making, and knowledge acquisition from prior learning experiences (Mayarni & Nopiyanti, 2021; Yanti & Prahmana, 2017). Lubis et al. (2021) found that interactive multimedia increases students' analytical thinking skills by nearly 50% compared to traditional methods. With the rise of video-sharing platforms, researchers have investigated YouTube and TikTok's role in education. Wahyuningtyas et al. (2021) found YouTube videos significantly improve elementary students' analytical thinking skills in natural science, surpassing text-based instruction.

### 2.3.3 Knowledge Application

Knowledge application is broadly defined as the ability to utilize both tacit and explicit knowledge acquired in the classroom to effectively solve problems and achieve practical outcomes through creative thinking (Gao et al., 2018; Kothari et al., 2012).

Numerous studies have examined the effectiveness of social media and multimedia as instructional tools in fostering knowledge application. Eller (2012) found that personal learning networks, a type of social media, positively impact students' ability to apply knowledge and skills in personal learning. Similarly, Mwalwanda and Mhlana (2022) explored social media applications in open-distance learning, highlighting the effectiveness of platforms like YouTube and WhatsApp in improving students' practical knowledge application. Specific social media platforms such as YouTube and TikTok have gained recognition for their role in facilitating online knowledge acquisition, sharing, and application. Additionally, Chen (2013) demonstrated that integrating YouTube into EFL education can significantly promote learning autonomy and the ability to apply knowledge effectively.

#### 2.3.4 Perceived Learning

Perceived learning integrates learners' emotions, beliefs, and evaluations, encompassing both objective knowledge acquisition and subjective learning experiences for holistic assessment of learning effectiveness (Turan et al., 2022).

Perceived learning is increasingly utilized in educational research to evaluate teaching strategies, technologies, and interventions, as well as to develop personalized learning experiences that cater to different learners' needs and preferences (Wei et al., 2024). Studies such as Nyirahabimana et al. (2023) highlighted the positive impact of multimedia on perceived learning, noting that students report higher levels of learning when multimedia materials are used. Additionally, research by Kaymak and Horzum (2022) showed that perceived learning is influenced by factors like learner motivation and technical skills, with multimedia content helping overcome online learning barriers. Recent studies also explore the role of social media platforms like YouTube and TikTok in enhancing perceived learning, with findings indicating that these platforms promote engagement, satisfaction, and better learning outcomes (Zhou et al., 2020; Conde-Caballero et al., 2023).

### 3. Research Methods and Materials

#### 3.1 Research Design and Treatment

Our study employed a quantitative approach with a quasi-experiment as the primary method and a supplementary survey. The quasi-experiment involved two groups: a control group (CG) without Bilibili intervention and a treatment group (TG) with Bilibili intervention. Both groups were assessed using the same post-test at the end of the experiment, measuring students' knowledge acquisition, analytical thinking skills, and knowledge application.

Additionally, students in the TG completed a survey through a questionnaire to assess their perceived learning. This study utilized numerical data from both groups for statistical analysis.

The research treatment integrated Bilibili into the teaching process for the TG in the English culture course Learn About UK & USA. The experiment spanned eight weeks, with one session per week, each covering a specific topic. Each session consisted of two lessons: Lesson One followed traditional face-to-face teaching using a paper-based textbook, while Lesson Two incorporated teacher-selected videos from Bilibili. In Lesson Two, students explored a specific topic related to the general theme covered in Lesson One, engaging in video viewing, group discussion, group presentation, and comment writing. Both groups studied the same content; however, in the CG, the teacher delivered the Lesson Two's topic, whereas the TG watched a selected Bilibili video. Additionally, CG students wrote comments in an assignment book, while TG students posted theirs in the video's comment section.

The research may be influenced by some confounding variables: a. TG students might perform better simply because they know they were part of an experimental condition (Hawthorn Effect); b. students' prior familiarity with digital learning platforms, which could affect their engagement and performance independently of the Bilibili-integrated teaching approach utilized. The control of these confounding variables will be left to future studies.

#### 3.2 Population and Sample

The population in the study consisted of all second-year undergraduate students enrolled in the English Department at a university in southwestern China. Based on data from the Office of Student Affairs, a total of 98 students, aged 19 to 21, were distributed across three classes. The gender ratio was approximately 1:2, with 33 male and 65 female students, consistent across all classes. They were admitted through China's National Higher Education Entrance Examination (NHEEE). They all have passed their first-year coursework.

The population exhibited several key characteristics that made it well-suited for this research. First, they demonstrated high motivation and interest in learning English, actively seeking opportunities to enhance their language proficiency and cultural understanding. Their excellent English skills, acquired through rigorous admission requirements and first-year coursework, enabled them to comprehend authentic English videos from Bilibili. Additionally, they had a strong awareness of English culture, developed through their curriculum, and actively engage in immersive learning experiences. Their analytical thinking, application ability, and critical thinking skills, emphasized in their academic training, aligned with the study's focus.



Moreover, they were accustomed to interactive learning, participating in teamwork, public speaking, and extracurricular activities that foster engagement. Their familiarity with digital tools, including video-sharing platforms like Bilibili, ensured smooth integration of technology into their learning process. Lastly, they faced challenges in achieving higher English proficiency and cultural comprehension, making digital interventions particularly relevant for their academic needs.

The sample included 32 students in the CG and 33 in the TG, all of whom were familiar with Bilibili's video and social interaction features, with most possessing individual Bilibili accounts. Two sampling techniques were employed. First, cluster sampling was used, as the population consisted of three pre-grouped classes, allowing for the selection of naturally homogeneous clusters. Second, purposive sampling was applied to ensure comparability, selecting two groups with similar average scores from the previous semester, resulting in class two as the CG and class three as the TG. While purposive sampling ensured baseline comparability (matched test scores), unmeasured between-class differences (e.g., teaching styles, peer interactions) may affect generalizability of findings.

The quasi-experimental study was approved by the Research Ethics Committee of the English Department of the University. All participants' rights, including voluntary participation, anonymity guarantees, and strict data confidentiality measures in accordance with regional data protection regulations. All collected data were encrypted and stored securely, accessible only to the research team.

### 3.3 Research Instruments

This study utilized a performance test and a questionnaire as research instruments. The performance test, conducted after the 8-week quasi-experiment in a classroom setting by a paper-based format, assessed knowledge acquisition, analytical thinking skills, and knowledge application in both groups to answer the first research question: "What is the difference between the Bilibili-integrated teaching method and the traditional teaching approach in terms of students' learning performance?". The performance test utilized a validated rubric to ensure measurement validity: it contained four question types: multiple-choice, fill-in-the-gap, content analysis, and essay writing. The first two are objective with a single correct answer, while the latter two require in-depth responses. The first two types questions were selected from past TEM-8 (Test for English majors, Band VIII) exams by experienced instructors and reviewed by the university's English Department academic committee. TEM-8, conducted by National Advisory Committee for Foreign Language Teaching, evaluates the English proficiency of 4th-year

English majors. Meanwhile, content analysis and essay questions were designed and approved based on a rubric established by the English Department. The objective questions assessed students' knowledge acquisition, while the subjective questions evaluated their analytical thinking skills (content analysis) and ability to apply knowledge (essay writing) (See Table 1).

**Table 1:** Structure of Post-Test and Measured Variables

No	Question Types	Knowledge Acquisition	Analytical Thinking Skills	Knowledge Application	Score
1	Multiple-Choice	✓			30
2	Fill-in-the-Gap	✓			20
3	Content Analysis		✓		30
4	Essay Writing			✓	20
<b>Total</b>					100

In this study, a 5-point Likert-scale questionnaire served as a supplementary research instrument to address the second research question: "What are the students' perceived learning outcomes from integrating Bilibili into the Learn About UK & USA course?" Five English Department experts at the university evaluated the seven questions' validity using a 1-4 scale. Results showed strong content validity: I-CVI (0.80-1.00 per item) and S-CVI (0.97) exceeded thresholds (I-CVI  $\geq 0.78$ , S-CVI  $\geq 0.80$ ). The questions were thus validated as appropriate and required no revision. A pilot study with 33 second-year English majors assessed the reliability. The Cronbach's  $\alpha$  of 0.901 (exceeding the 0.7 threshold) confirmed high reliability, requiring no revisions.

It is designed to evaluate the variable of perceived learning. Administered in the classroom, the questionnaire was completed by the TG after the performance test anonymously, with students given approximately 10 minutes to respond to the seven multiple-choice questions.

## 4. Results and Discussions

### 4.1 Students' Performance in Post-Test

#### 4.1.1 Demographic Information

Our study included 65 second-year English majors, with 32 students in the CG and 33 in the TG. In the CG, 11 students (34.4%) were male, and 21 (65.6%) were female. Age distribution showed that 19 students (59.4%) were 19 years old, 9 (28.1%) were 20, and 4 (12.5%) were 21. Additionally, 17 students (53.1%) were from urban areas, while 15 (46.9%) were from rural areas. The TG comprised

11 male students (33.3%) and 22 female students (66.7%). Among them, 21 students (63.6%) were 19, 7 (21.2%) were 20, and 5 (15.2%) were 21. The urban-rural distribution was similar to the control group, with 17 students (51.5%) from urban areas and 16 (48.5%) from rural areas.

#### 4.1.2 Descriptive Statistics of Three Variables

Table 2 presents the means and standard deviations (SDs) of the three variables for both the TG and the CG.

**Table 2:** Descriptive Statistics of Three Variables

Group	Variable	Mean	SD	CV
Treatment n=33	Knowledge Acquisition	40.1	4.52	11.3%
	Analytical Thinking Skills	24.3	2.35	9.7%
	Knowledge Application	15.2	2.05	13.5%
	<b>Total</b>	<b>79.6</b>	<b>8.76</b>	<b>11.0%</b>
Control n=32	Knowledge Acquisition	36.6	4.53	12.4%
	Analytical Thinking Skills	21.8	2.70	12.4%
	Knowledge Application	14.1	1.76	12.5%
	<b>Total</b>	<b>72.5</b>	<b>8.88</b>	<b>12.2%</b>

From the above, the TG achieves higher mean scores across all three variables: knowledge acquisition ( $M = 40.1$ ), analytical thinking skills ( $M = 24.3$ ), and knowledge application ( $M = 15.2$ ), compared to the CG's mean scores of 36.6, 21.8, and 14.1, respectively. The TG's total mean score ( $M = 79.6$ ) also exceeds that of the CG ( $M = 72.5$ ), suggesting that the Bilibili-integrated teaching method is more effective in enhancing students' learning outcomes. The SD values indicate similar variability in knowledge acquisition (TG: 4.52, CG: 4.53), lower variability in analytical thinking skills for TG (2.35) compared to CG (2.70), and slightly higher variability in knowledge application for TG (2.05) than CG (1.76). The total scores show slightly lower variability in TG ( $SD = 8.76$ ) than CG ( $SD = 8.88$ ). To further assess variability, the coefficient of variation (CV) was calculated. For TG, the CVs for knowledge acquisition, analytical thinking skills, and knowledge application are 11.3%, 9.7%, and 13.5%, respectively, with a total score CV of 11.0%. All are below 15%, indicating low dispersion. The CG's CVs for the same variables are 12.4%, 12.4%, 12.5%, and 12.2%, respectively, also suggesting low variability. Compared to CG, TG exhibits slightly greater variability in knowledge application but lower variability in knowledge acquisition, analytical thinking skills, and total scores. Overall, the learning outcomes across the three variables and total scores demonstrate relative consistency within each group.

#### 4.1.3 Hypotheses Testing

Our study investigated three variables - knowledge acquisition, analytical thinking skills, and knowledge application, each tested with a corresponding null and alternative hypothesis (See Table 3).

**Table 3:** Hypotheses of Three Variables

Hypotheses	Statements
H <sub>01</sub>	There is no difference between the control and the treatment groups in knowledge acquisition.
H <sub>a1</sub>	There is a difference between the control and the treatment groups in knowledge acquisition.
H <sub>02</sub>	There is no difference between the control and the treatment groups in analytical thinking skills.
H <sub>a2</sub>	There is a difference between the control and the treatment groups in analytical thinking skills.
H <sub>03</sub>	There is no difference between the control and the treatment groups in knowledge application.
H <sub>a3</sub>	There is a difference between the control and the treatment groups in knowledge application.

This section compared the means of the two independent groups for these continuous variables. To determine whether there were significant differences between the groups, an independent samples t-test was conducted for each hypothesis. Before performing the t-test, several procedures were followed to ensure that the post-test scores from both groups met the necessary assumptions. First, the dependent variable (scores) was confirmed to be continuous. Second, the independent variable contained two distinct groups (control vs. treatment). Third, the data for the three variables within each group were assessed for normality. At last, the variances of the two groups have been found to be approximately equal, as confirmed by Levene's test for equality of variances. The test results yielded p-values of 0.938 for knowledge acquisition, 0.492 for analytical thinking skills, and 0.335 for knowledge application - all exceeding the 0.05 threshold (Shear et al., 2018). This indicates that the assumption of equal variances holds. Consequently, Student's t-test was deemed appropriate for conducting the independent samples t-test in the subsequent analysis.

Table 4 shows the results of independent samples t-test for the three hypotheses regarding three variables.

**Table 4:** Results of Independent Samples t-test

Variable	Mean Difference	p-value	Effect Size
Knowledge Acquisition	3.47	0.003	Cohen's <i>d</i> 0.766
Analytical Thinking Skills	2.55	<0.001	Cohen's <i>d</i> 1.009
Knowledge Application	1.06	0.030	Cohen's <i>d</i> 0.553

For Hypothesis 1 regarding knowledge acquisition, an independent samples t-test was conducted to assess whether there was a significant difference in knowledge acquisition scores between the CG, which did not use Bilibili, and the TG, which applied Bilibili. The results have shown a mean difference of 3.47, with the TG scoring higher, suggesting that students exposed to the Bilibili-integrated blended teaching method outperformed those in the traditional teaching setting. The  $p$ -value of 0.003, well below the 0.05 threshold (Naenah, 2022), indicates statistical significance, leading to the rejection of the null hypothesis ( $H_0$ ). Furthermore, Cohen's  $d$  value of 0.766 suggests a moderate-to-large effect size, confirming the substantial positive impact of Bilibili integration on students' knowledge acquisition.

For Hypothesis 2 regarding analytical thinking skills, an independent samples t-test was performed to determine whether there was a significant difference in analytical thinking skills scores between the CG, which did not receive Bilibili's intervention, and the TG, which did. The results demonstrate a mean difference of 2.55, indicating that the TG scored 2.55 points higher than the CG. This suggests that students exposed to the Bilibili-integrated blended teaching method demonstrates stronger analytical thinking skills in the post-test compared to those taught through traditional methods. The  $p$ -value of <0.001 is far below the 0.05 threshold, confirming the statistical significance of the results and allowing the rejection of the null hypothesis ( $H_0$ ). Additionally, Cohen's  $d$  value of 1.009 suggests a large effect size, highlighting the strong positive impact of Bilibili integration on students' analytical thinking skills. These findings confirm that the Bilibili-integrated approach is significantly more effective than traditional teaching in fostering critical thinking abilities.

For Hypothesis 3 regarding knowledge application, an independent samples t-test was used to evaluate whether there was a significant difference in the knowledge application scores between the CG, which did not receive Bilibili's intervention, and the TG, which experienced Bilibili's integration. The results show a mean difference of 1.06, meaning the TG's mean score in knowledge application 1.06 points higher than the CG. This suggests that students who experienced the Bilibili-integrated teaching method performed better in applying knowledge compared to those taught through traditional methods. The  $p$ -value of 0.030, which is below the 0.05 threshold, indicates that the result is statistically significant. This allows for the rejection of the null hypothesis ( $H_0$ ), confirming that the observed difference in scores is not due to random chance. The Cohen's  $d$  value of 0.553 suggests a moderate effect size, indicating that Bilibili's integration had a moderate positive influence on students' knowledge application abilities. Overall, these results demonstrate that

Bilibili integration is more effective than traditional teaching approach in improving students' knowledge application.

In conclusion, the data analysis demonstrates that the Bilibili-integrated teaching method have a significant positive impact on students' learning performance, as all three null hypotheses were rejected.

## 4.2 TG Students' Responses in Questionnaire

Table 5 presents the results of the TG students' responses in the questionnaire expressing their overall attitudes toward their perceived learning experience in the 8-week Bilibili-integrated teaching program.

**Table 5:** Descriptive Statistics of Perceived Learning

	Item Statement	Mean	SD	Interpretation
1	I gained a good understanding of the basic knowledge of the subject area.	4.88	0.415	Strongly Agree
2	I developed an ability to communicate clearly about the subject.	4.85	0.442	Strongly Agree
3	I learned to interrelate the important issues in the subject area using the course materials.	4.82	0.392	Strongly Agree
4	I learned a great deal of factual materials about the subject area in this course.	4.79	0.485	Strongly Agree
5	I learned to identify the central issues in the subject area.	4.85	0.442	Strongly Agree
6	I improved my ability to integrate facts and develop generalizations about some content in this subject area from the course materials.	4.76	0.435	Strongly Agree
7	Overall, my level of learning increased in this course.	4.85	0.442	Strongly Agree
<b>Total</b>		<b>4.82</b>	<b>0.436</b>	<b>Strongly Agree</b>

The overall mean score is 4.82, corresponding to the "strongly agree" level on the scale, indicating a very positive perception of the program. Students strongly agreed with statements regarding their learning outcomes, including gaining a solid understanding of the subject's fundamental knowledge ( $M=4.88$ ), developing clear communication skills about the subject ( $M=4.85$ ), and interrelating important issues using course materials ( $M=4.82$ ). They also reported acquiring substantial factual knowledge ( $M=4.79$ ), identifying central issues in the subject area ( $M=4.85$ ), and improving their ability to integrate facts and develop generalizations ( $M=4.76$ ). In addition, students agreed that their overall learning had significantly increased during the course ( $M=4.85$ ). The overall standard deviation (SD) of 0.436, along with the SDs for the individual questions (ranging from 0.392 to 0.485), are all below 0.50, indicating

low variability in the responses. This suggests that the Bilibili-integrated teaching method is consistently effective, and the students in the TG share similar, highly positive perceptions of their learning experience. The small SDs relative to the high mean scores further imply that the majority of students have consistent and positive attitudes toward their perceived learning outcomes.

## 5. Conclusions

### 5.1 Answers to the Research Questions

To address Research Question 1: “What is the difference between the Bilibili-integrated teaching method and the traditional teaching approach in terms of students’ learning performance?”, the data from the study show that students who participated in the Bilibili-integrated teaching method outperformed those who received traditional instruction on the post-test measuring their academic performance.

The results obtained from the post-test align with previous research findings discussed in Part 2. Studies have shown that the integration of new media into teaching methodologies has transformed traditional education, leading to improved educational outcomes (Chong et al., 2022; Perez et al., 2023; Wu, 2024). Video platforms like YouTube and TikTok have revolutionized teaching methods, offering a vast range of instructional content that supports visual and auditory learning, particularly for students raised in the digital age (Iftikhar et al., 2019; Mullen & Wedwick, 2008). Additionally, studies on Bilibili, “China’s YouTube,” reveal that its integration into English education boosts satisfaction, motivation, and learning outcomes (Lin et al., 2024; Zhang et al., 2023).

From the data analysis of Part 4, it is obvious that the post-test results reveal that the TG outperforms the CG in knowledge acquisition, analytical thinking skills, and knowledge application. The findings align with the research discussed in Part 2. Regarding knowledge acquisition, studies by Hayman and Smith (2023), Khan et al. (2021), and Sivakumar et al. (2023) highlighted the positive role of social media in supporting knowledge acquisition, particularly in undergraduate education. For analytical thinking skills, research by Iriani et al. (2020) explored the use of new media as a tool for improving students’ analytical thinking abilities. Regarding knowledge application, Eller (2012), Giunchiglia et al. (2018), and Mwalwanda and Mhlana (2022) emphasized the positive impact of platforms like YouTube and WhatsApp in fostering practical knowledge application through access to diverse resources.

The study addresses several gaps in related research. Firstly, while previous studies have explored the benefits of social media platforms like YouTube and TikTok in

education, few have compared traditional and Bilibili-integrated teaching in an English culture course. This study provides empirical evidence on Bilibili’s effectiveness in enhancing knowledge acquisition, analytical thinking skills, and knowledge application. Secondly, while many studies have examinee social media’s impact in general education, this research focuses on its influence on English majors. Finally, by focusing on a Chinese higher education context, the study offers valuable insights into Bilibili-integrated teaching, contributing to a more global perspective on digital learning effectiveness.

To answer Research Question 2: “What are the students’ perceived learning outcomes from the integration of Bilibili in the Learn About UK & USA course?”, the findings indicate that students view the integration of Bilibili into the teaching of the course as a valuable enhancement to their learning outcomes.

The results from the questionnaire align with the literature reviewed in Part 2, confirming previous research findings. Studies by Horzum et al. (2015), Kaymak and Horzum (2022), and Nyirahabimana et al. (2023) indicated that multimedia integration in education enhances perceived learning by providing diverse interactive learning opportunities and increasing academic motivation. Recent research has also examined perceived learning in the context of social video-sharing platforms like YouTube and TikTok. Studies by Conde-Caballero et al. (2023), and Zhou et al. (2020) found that YouTube fosters user satisfaction and perceived learning, making the experience more engaging and effective than traditional teaching methods.

Based on Part 4’s data analysis, the findings confirmed the consistent effectiveness of the Bilibili-integrated teaching method. Students in the TG shared similar perceptions of their perceived learning. The questionnaire results address key research gaps. While prior studies highlight social media’s educational benefits, few compare traditional teaching with Bilibili-integrated instruction in an English culture course. This study provides empirical evidence of its effectiveness in enhancing perceived learning among undergraduate English majors. It also offers a broader global perspective on social platforms’ role in China, particularly in learning English culture.

### 5.2 Additional Findings and Implication for Practice

Beyond the primary research questions, several additional findings provide a broader understanding of the Bilibili-integrated teaching method. One significant observation was the heightened level of student engagement and motivation in the TG. Many students reported that Bilibili’s interactive and dynamic content made learning more enjoyable and immersive, leading to greater



participation in group discussions, assignments, and class activities. Another unexpected discovery was Bilibili's potential as a platform for peer learning. Students have frequently interacted through video comments, sharing insights and additional resources, fostering a collaborative and active learning environment. Additionally, the digital format allows students to access course materials flexibly, enabling self-paced learning. This feature is particularly beneficial for students with different learning preferences or those needing reinforcement of complex cultural concepts. These findings suggest integrating Bilibili into English culture education enhances engagement, peer collaboration, and self-directed learning, creating a more dynamic and adaptable educational experience.

The study also carries important implications for English education in China. English major students and their instructors can benefit from incorporating Bilibili-integrated strategies, utilizing video content, annotations, and interactive activities to enhance comprehension and critical thinking. Moreover, program directors and policymakers may use these findings to update teaching materials and curricula to integrate digital learning platforms. Ultimately, the systematic adoption of Bilibili in English education could modernize instruction, improve perceived learning, and better prepare students for the digital era.

### 5.3 Conclusion

Overall, the findings suggest that the Bilibili-integrated blended teaching method is significantly more effective than traditional instruction in improving students' knowledge acquisition, analytical thinking skills, knowledge application, and perceived learning. By incorporating multimedia content and interactive engagement strategies, this approach enhances students' comprehension while fostering critical analysis. These results highlight the potential of Bilibili as an innovative pedagogical tool for teaching English culture courses, offering a more dynamic and immersive learning experience that promotes deeper understanding and higher-order thinking skills.

The results of this study may be limited by the relatively small sample size ( $n=65$ ). Future research with larger sample size will be very helpful. Moreover, it is based on 2nd-year undergraduate English majors at a single university, which may limit the generalizability of the research findings. Future studies can be extended to more universities and more majors with larger samples in order to illustrate the generalizability of our findings. Challenge issues (confounding variables) such as Hawthorn effect (TG may improve their behavior responding to being observed, rather than due to any specific experimental intervention) and students' prior familiarity with digital learning platforms (observed learning gains might stem from their pre-existing

skills rather than the Bilibili intervention itself) should be addressed in future studies.

### References

- Al-Jarf, R. (2022). YouTube videos as a resource for self-regulated pronunciation practice in EFL distance learning environments. *Journal of English Language Teaching and Applied Linguistics*, 4(2), 44-52. <http://doi:10.32996/jeltal.2022.4.2.4>
- Bandura, A. (2012). Social Cognitive Theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Ed.), *Handbook of Theories of Social Psychology* (pp. 349-373). SAGE. <https://doi.org/10.4135/9781446249215>
- Bandura, A. (2002). Social foundations of thought and action. In D. F. Marks (Ed.), *The Health Psychology Reader* (pp. 94-106). SAGE.
- Berk, R. A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning*, 5(1), 1-21.
- Buzzetto-More, N. A. (2012). Social networking in undergraduate education. *Interdisciplinary Journal of Information, Knowledge, and Management*, 7, 63-90.
- Chan, W. T., & Leung, C. H. (2016). The use of social media for blended learning in tertiary education. *Universal Journal of Educational Research*, 4(4), 771-778. <http://doi:10.13189/ujer.2016.040414>
- Chen, H., Jin, J., Liu, X., & Zhang, Y. (2021). Analysis of the role of short knowledge videos in bridging the "Knowledge Gap" in school education in the 5G era - Take Bilibili as an example. *Proceedings of 2021 2nd International Conference on Information Science and Education (ICISE-IE)*, 1119-1122. IEEE. <http://doi.org/10.1109/ICISE-IE53922.2021.00253>
- Chen, Y. (2013). The possibility of applying YouTube to motivate learning autonomy. *Journal of International Education Research*, 9(3), 207-216. <http://doi:10.19030/jier.v9i3.7877>
- Cherukunnath, D., & Singh, A. P. (2022). Exploring cognitive processes of knowledge acquisition to upgrade academic practices. *Frontiers in Psychology*, 13, 682628. <http://doi:10.3389/fpsyg.2022.682628>
- Chong, S. W., Lin, T. J., & Chen, Y. (2022). A methodological review of systematic literature reviews in higher education: Heterogeneity and homogeneity. *Educational Research Review*, 35, 100426. <http://doi:10.31219/osf.io/jn84b>
- Conde-Caballero, D., Castillo-Sarmiento, C. A., Ballesteros-Yáñez, I., Rivero-Jiménez, B., & Mariano-Juárez, L. (2023). Microlearning through TikTok in higher education. An evaluation of uses and potentials. *Education and Information Technologies*, 29(2), 2365-2385. <http://doi:10.1007/s10639-023-11904-4>
- Eller, L. S. (2012). *Social media as avenue for personal learning for educators: Personal learning networks encourage application of knowledge and skills* [Doctoral dissertation]. Pepperdine University.
- Fernández-Carballo, M. (2021). University students' attitudes towards the use of YouTube in the EFL classroom. *HOW*, 28(2), 141-158. <http://doi:10.19183/how.28.2.624>

- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013). *Embracing digital technology: a new strategic imperative*. MIT Sloan Management Review.
- Gao, T., Chai, Y., & Liu, Y. (2018). A review of knowledge management about theoretical conception and designing approaches. *International Journal of Crowd Science*, 2(1), 42-51. <http://doi:10.1108/IJCS-08-2017-0023>
- Giunchiglia, F., Zeni, M., Gobbi, E., Bignotti, E., & Bison, I. (2018). Mobile social media usage and academic performance. *Computers in Human Behavior*, 82, 177-185. <http://doi:10.1016/j.chb.2017.12.041>
- Gopinathan, S., Kaur, A. H., Veeraya, S., & Raman, M. (2022). The role of digital collaboration in student engagement towards enhancing student participation during COVID-19. *Sustainability*, 14(11), 6844-6866. <http://doi:10.3390/su14116844>
- Hamad, M., Metwally, A., & Alfuruque, S. (2019). The impact of using YouTube and audio tracks imitation YATI on improving speaking skills of EFL learners. *English Language Teaching*, 12(6), 191-198. <http://doi:10.5539/elt.v12n6p191>
- Hasan, M., Younus, M. A., Ibrahim, F., Islam, M., & Islam, M. (2020). Effects of new media on English language learning motivation at tertiary level. *Advances in Language and Literary Studies*, 11(5), 17-24.
- Hayman, R., & Smith, E. (2023). Social media in undergraduate teaching and learning: A scoping review protocol. *PLoS one*, 18(11), e0291306. <http://doi:10.1371/journal.pone.0291306>
- Hidayat, R., Nugroho, I., Zainuddin, Z., & Ingai, T. (2023). A systematic review of analytical thinking skills in STEM education settings. *Information and Learning Sciences*, 125(4), 565-586. <http://doi:10.1108/ILS-06-2023-0070>
- Horzum, m. b., Demir, Z., & Canan Güngören, O. (2015). Structural equation modeling towards online learning readiness, academic motivations, and perceived learning. *Educational Sciences: Theory and Practice*, 15(3), 759-770. <http://doi:10.12738/estp.2015.3.2410>
- Hosen, M., Ogbeibu, S., Giridharan, B., Cham, T.-H., Lim, W. M., & Paul, J. (2021). Individual motivation and social media influence on student knowledge sharing and learning performance: Evidence from an emerging economy. *Computers & Education*, 172, 104262. <http://doi:10.1016/j.compedu.2021.104262>
- Iftikhar, M., Riaz, S., & Yousaf, Z. (2019). Impact of YouTube tutorials in skill development among university students of Lahore. *Pakistan Journal of Distance & Online Learning*, 4(2), 125-138.
- Iriani, R., Norjanah, I., & Kusasi, M. (2020). The development of electronic publication module integrated with means-ends analysis learning model to improve students' analytical thinking skill in stoichiometry materials. *Advances in Social Science, Education and Humanities Research*, 407, 196-199. <http://doi:10.2991/assehr.k.200219.056>
- Jordaan, M., & Jordaan, D. (2017). Using YouTube as a reflection tool for a service-learning module [Conference Presentation]. *SASEE 2017, Cape Town, South Africa*.
- Juma, M. J. (2021). Developing English pronunciation through animation and You Tube videos. *Arab World English Journal*, 12, 401-414. <http://doi:10.24093/awej/vol12no4.26>
- Kaymak, Z. D., & Horzum, m. b. (2022). Student barriers to online learning as predictors of perceived learning and academic achievement. *Turkish Online Journal of Distance Education*, 23(2), 97-106. <http://doi:10.17718/tojde.1096250>
- Khan, M. N., Ashraf, M. A., Seinen, D., Khan, K. U., & Laar, R. A. (2021). Social media for knowledge acquisition and dissemination: The impact of the COVID-19 pandemic on collaborative learning driven social media adoption. *Front Psychol*, 12, 648253. <http://doi:10.3389/fpsyg.2021.648253>
- Kothari, A., Rudman, D. L., Dobbins, M., Rouse, M., Sibbald, S., & Edwards, N. (2012). The use of tacit and explicit knowledge in public health: a qualitative study. *Implement Sci*, 7(1), 20. <http://doi:10.1186/1748-5908-7-20>
- Li, S., Zhou, X., Li, H., Liao, F., Li, G., & Huang, K. (2023). The effects of short video-assisted teaching model on English language learners' affect: Evidence from the Longitudinal Study. *Open Journal of Social Sciences*, 11(04), 411-421. <http://doi:10.4236/jss.2023.114029>
- Lin, B., Zabit, M. N. B., & Huang, S. (2024). *A study of Chinese danmaku video sites for self-directed learning (CDSDL) from an educational perspective: A case study of Bilibili website*. proceedings of the 3rd International Conference on New Media Development and Modernized Education. <https://doi.org/10.4108/eai.13-10-2023.2341298>
- Lin, C. P., & Chiang, P. H. (2023). Increasing the Vocational Focus of Knowledge Application in Teams: A Perspective of Team Learning and Industry Clusters. *Vocations and Learning*, 16, 121-139. <http://doi:10.1007/s12186-022-09306-7>
- Lubis, A. H., Yusup, F., Dasopang, M. D., & Januariyansah, S. (2021). Effectivity of interactive multimedia with theocentric approach to the analytical thinking skills of elementary school students in science learning. *Premiere Educandum: Jurnal Pendidikan Dasar Dan Pembelajaran*, 11(2), 215-226. <http://doi:10.25273/pe.v11i2.9658>
- Mayarni, M., & Nopiyanti, E. (2021). Critical and analytical thinking skill in ecology learning: A correlational study. *Jurnal Pendidikan Biologi Indonesia*, 7(1), 63-70. <http://doi:10.22219/jpbi.v7i1.13926>
- Mayer, R. E. (2024). The past, present, and future of the cognitive theory of multimedia learning. *Educational Psychology Review*, 36(1), 8. <http://doi:10.1007/s10648-023-09842-1>
- Maziriri, E. T., Gapa, P., & Chuchu, T. (2020). Student perceptions towards the use of YouTube as an educational tool for learning and tutorials. *International Journal of Instruction*, 13(2), 119-138. <http://doi:10.29333/iji.2020.1329a>
- Muhammad, F. (2022). *The effect of implementing TikTok application with project-based learning on student's speaking skills* [Doctoral dissertation]. Tarbiyah and Tadris Faculty.
- Mullen, R., & Wedwick, L. (2008). Avoiding the digital abyss: Getting started in the classroom with YouTube, digital stories, and blogs. *The Clearing House*, 82(2), 66-69. <http://doi:10.3200/TCHS.82.2.66-69>
- Mwalwanda, A., & Mhlana, S. (2022). The use of social media applications for learning and teaching in the open distance learning: user experience. *SN Social Sciences*, 2(11), 239. <http://doi:10.1007/s43545-022-00537-y>

- Naenah, N. N. (2022). Learning styles and attitude toward achievement among English second language students. *Journal of English Language Pedagogy, Literature, and Culture*, 7(2), 179-193. <http://doi:10.35974/acuity.v7i2.2607>
- Negara, H. R. P., Santosa, F. H., & Siagian, M. D. (2024). Overview of student's mathematics reasoning ability based on social cognitive learning and mathematical self-efficacy. *Mathematics Teaching Research Journal*, 16(1), 121-142.
- Nyirahabimana, P., Minani, E., Nduwingoma, M., & Kemeza, I. (2023). Students' perceptions of multimedia usage in teaching and learning quantum physics: Post-assessment. *Journal of Baltic Science Education*, 22(1), 37-56. <http://doi:10.33225/jbse/23.22.37>
- Okoye, K., Hussein, H., Arrona-Palacios, A., Quintero, H. N., Ortega, L. O. P., Sanchez, A. L., Ortiz, E. A., Escamilla, J., & Hosseini, S. (2023). Impact of digital technologies upon teaching and learning in higher education in Latin America: an outlook on the reach, barriers, and bottlenecks. *Education and Information Technologies*, 28(2), 2291-2360. <http://doi:10.1007/s10639-022-11214-1>
- Perez, E., Manca, S., Fernández-Pascual, R., & Mc Guckin, C. (2023). A systematic review of social media as a teaching and learning tool in higher education: A theoretical grounding perspective. *Education and Information Technologies*, 28(9), 1-30. <http://doi:10.1007/s10639-023-11647-2>
- Purnamasari, A. (2018). What EFL learners say about YouTube use to improve pronunciation in a blended learning environment. *JET (Journal of English Teaching)*, 4(3), 205-215.
- Saini, G., & Baba, M. M. (2023). Psychological expedient of multimedia in blended learning and metamemory satisfaction. *The Learning Organization*, 31(1), 68-87. <http://doi:10.1108/TLO-11-2022-0130>
- Samadi, F., Jafarigohar, M., Saeedi, M., Ganji, M., & Khodabandeh, F. (2024). Impact of flipped classroom on EFL learners' self-regulated learning and higher-order thinking skills during the Covid19 pandemic. *Asian-Pacific Journal of Second and Foreign Language Education*, 9(1), 9-24. <http://doi:10.1186/s40862-023-00246-w>
- Shear, B. R., Nordstokke, D. W., & Zumbo, B. D. (2018). A note on using the nonparametric Levene test when population means are unequal. *Practical Assessment, Research & Evaluation*, 23(13), 1-11.
- Silviyanti, T. M. (2014). Looking into EFL students' perceptions in listening by using English movie videos on YouTube. *Studies in English Language and Education*, 1(1), 42-58. <http://doi:10.24815/siele.v1i1.1119>
- Sivakumar, A., Jayasingh, S., & Shaik, S. (2023). Social media influence on students' knowledge sharing and learning: An empirical study. *Education Sciences*, 13(7), 745-760. <http://doi:10.3390/educsci13070745>
- Stahl, E., Finke, M., & Zahn, C. (2006). Knowledge acquisition by hypervideo design: An instructional program for university courses. *Journal of Educational Multimedia and Hypermedia*, 15(3), 285-302. <http://doi:10.23668/psycharchives.734>
- Turan, S., Yaman, M. S., Genc, H. I., Dönmez, A., Hergüner, G., & Yaman, C. (2022). Predictive of perceived learning: Academic motivation and attitudes to mobile learning. *Turkish Online Journal of Educational Technology*, 21(1), 106-113.
- Van, N. T. T., & Mai, T. T. T. (2024). Exploring student's perspectives and practices: Using TikTok in the context of sophomore EFL speaking 4 learning at Van Lang University. *International Journal of TESOL & Education*, 4(2), 160-182. <http://doi:10.54855/ijte.24429>
- Wahyuningtyas, D. A., Sudiyanto, A., & Rintayati, P. (2021). The effect of YouTube video in improving analytical thinking ability in natural science of elementary school students. *AIP Conference Proceedings*, 2330(1). <http://doi:10.1063/5.0043109>
- Wang, Y. N., & Low, H. M. (2024). Effects of motivation on Chinese EFL students to read English text on social media. *Education and Information Technologies*, 29(6), 7465-7486. <http://doi:10.1007/s10639-023-12040-9>
- Wei, X., Saab, N., & Admiraal, W. (2024). What rationale would work? Unfolding the role of learners' attitudes and motivation in predicting learning engagement and perceived learning outcomes in MOOCs. *International Journal of Educational Technology in Higher Education*, 21(1), 5-34. <http://doi:10.1186/s41239-023-00433-2>
- Wu, X.-Y. (2024). Exploring the effects of digital technology on deep learning. *Education and Information Technology*, 29, 425-458. <https://doi.org/10.1007/s10639-023-12307-1>
- Yanti, O. F., & Prahmana, R. C. (2017). Model Problem Based Learning, guided inquiry, Dan Kemampuan Berpikir kritis matematis. *Jurnal Review Pembelajaran Matematika*, 2(2), 120 - 130.
- Yulian, R., Ruhama, U., & Utami, P. (2022). EFL Slow learners' perception in speaking with authentic multimedia assisted language learning. *International Journal of Language Education*, 6(2), 183-195. <http://doi:10.26858/ijole.v6i2.21511>
- Zahn, C., Schaeffeler, N., Giel, K. E., Wessel, D., Thiel, A., Zipfel, S., & Hesse, F. W. (2014). Video clips for YouTube: Collaborative video creation as an educational concept for knowledge acquisition and attitude change related to obesity stigmatization. *Education and Information Technologies*, 19(3), 603-621. <http://doi:10.1007/s10639-013-9277-5>
- Zhang, L.-T., Vázquez-Calvo, B., & Cassany, D. (2023). The emerging phenomenon of L2 vlogging on Bilibili: Characteristics, engagement, and informal language learning. *El Profesional de La Información*, 32(3), 1-17. <http://doi:10.3145/epi.2023.may.01>
- Zhou, Q., Lee, C. S., Sin, S.-C. J., Lin, S., Hu, H., & Fahmi Firdaus Bin Ismail, M. (2020). Understanding the use of YouTube as a learning resource: a social cognitive perspective. *Aslib Journal of Information Management*, 72(3), 339-359. <http://doi:10.1108/AJIM-10-2019-0290>