Original Paper

Application of Knowledge-based Short Videos in University Students' Learning: Examination and Enhancement of Motivation, Goals, Strategies, and Achievements

Baiyan Du[1], Yuege Lai[1*], Jun Cheng[1], & Xiuhua Yi[2]

[1] College of Teacher Education, Quzhou University, Quzhou, 324003, Zhejiang, China

[2] College of Music, Hubei Normal University, Huangshi, 435002, Hubei, China

[*] Corresponding author: Yuege Lai, 32073@qzc.edu.cn

Abstract

In today's world of accessible knowledge education, knowledge-based short videos have become a favored learning tool for many learners. However, the effectiveness of this learning method remains unclear, and research in the field of short video learning is still in its early stages and needs further exploration. This study surveyed 202 university students and conducted case analyses on 4 students to investigate the effects of self-determined motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievements in the context of learning through knowledge-based short videos. The results indicate that students who use short videos for learning demonstrate a moderate level of self-determined motivation, while their goal orientation, self-regulated learning strategies, and cognitive academic achievements require improvement. Senior students exhibited better self-determined motivation and cognitive academic achievements compared to junior students. Additionally, an increase in self-determined motivation, self-regulated learning strategies, and cognitive academic achievements was observed with increased time spent watching short videos. It was found that a moderate viewing time of about 2 hours per day is associated with certain learning benefits, while excessive viewing time may result in the opposite effect. Based on these findings, the study concludes with learning recommendations aimed at optimizing the application of short video learning tools and providing insights for future research in this area.

Keywords

short video learners, self-determined motivation, goal orientation, self-regulated learning strategies, cognitive academic achievement

1. Introduction

With the development of mobile internet and social media, short videos have emerged as a new form of communication, attracting widespread attention. The concept of short videos first appeared in 2011 with the Viddy app, allowing users to create and share short videos on social networks. This feature was later adopted by Instagram (Zou, 2022). In 2018, platforms like TikTok, BiliBili, and YouKu introduced short video content in the Chinese market (Sijia, 2019; Zhao & Ma, 2020; Ki & Kyoung, 2011). Especially after the outbreak of the COVID-19 pandemic in 2019, the modes of information dissemination diversified (Ren, 2023; Zhang, Lucas, & Pedro, 2022). The content of short videos expanded beyond entertainment, advertising, music, animation, and film to include knowledge-based videos (Zou, 2022). Knowledge-based short videos are multimedia content that conveys specific knowledge or information to viewers through short video clips, usually lasting between 1 and 10 minutes (Fei & Koo, 2020; Zou, 2022; Zhao & Ma, 2020). The primary purpose of these videos is to highlight key information and enhance viewers' understanding of a specific field or topic through concise, engaging, and visual content. Viewers can also interact with the video content by commenting, liking, sharing, or joining groups, thus increasing engagement and feedback mechanisms (Wang, 2021). Since the emergence of knowledge-based short videos, some researchers have begun to focus on the learning outcomes associated with this tool. Ren (2023) confirmed that English learners improved their speaking accuracy and fluency by learning through English knowledge-based short videos. Wu (2022) found that dance learners' motivation to learn dance was effectively enhanced after learning through dance content in short videos. These effects were reflected in aspects such as knowledge acquisition, material pursuit, achievement orientation, and engagement. Wang (2023) similarly verified that knowledge-based short videos could increase students' interest in learning chemistry and help them develop the process of processing chemical knowledge information. Meanwhile, some views suggest that learning through short videos poses challenges. For example, the quality of courses in knowledge-based short videos varies. Learners without clear goals may lack in-depth learning behaviors regarding the content, and the focus on single, concentrated knowledge in short videos may lead to a lack of systematic understanding of the knowledge structure. If the video content contains misleading information, it can also affect learners' cognition (Gao, 2023; Siyu, Xinchen, Jingtong, Jiahao, & Zhen, 2020; Peng, Li, Tan, & Wang, 2024). Given these concerns, the learning effectiveness of short videos remains to be further explained.

Some studies have provided recommendations for enhancing learners' academic achievement through knowledge-based short videos. Wang and Zhang (2022) suggested that short videos can be viewed as tools to spark interest in learning a particular field. Learners should purposefully and autonomously choose to watch high-quality knowledge-based short videos and integrate, understand, and apply the knowledge points through independent deep thinking to truly master the knowledge and build a

knowledge system. Wang and Xiang (2022) recommended that learners improve their literacy in using short video media, apply efficient learning methods and strategies, and create a learning atmosphere guided by a rigorous and pragmatic approach. Wang (2021) pointed out that short video learning is closely related to learners' learning conditions, cognitive foundation, resource presentation types, and online interpersonal interactions. Learners demonstrate continuity, cross-contextuality, improvisation, and interaction expectations in their online learning behaviors. Therefore, short video learning should provide appropriate learning support, enhance the expansion of learning resources, and improve the learning experience. Gou, Chen, and Yang (2022), from the perspective of microlearning theory, suggested that instructional content should be divided into interrelated yet independent knowledge units, supporting learners in utilizing fragmented time for learning. They advocated that educational short video design should guide students through cognitive processes such as discovery, conceptualization, decision-making, induction, and evaluation, thereby fostering good learning experiences and motivating students' desire for knowledge and interest through vivid and engaging content narratives to achieve the goal of learning through entertainment and improve learning outcomes.

The aforementioned perspectives and the principles of autonomy and self-determination in self-determined motivation theory (Wang & Zhang, 2022; Wang & Xiang, 2022), learning goals (Wang & Zhang, 2022; Gou, Chen, & Yang, 2022), and self-regulated learning strategies (Wang & Zhang, 2022; Wang & Xiang, 2022; Wang, 2021; Gou, Chen, & Yang, 2022), as well as the viewpoints on enhancing academic achievement (Wang & Zhang, 2022; Wang & Xiang, 2022; Gou, Chen, & Yang, 2022), are potentially related. These factors represent the foundational prerequisites, process control, and outcomes of learning through knowledge-based short videos. By observing the effectiveness of short video learning through this complete path, we can further explain the effectiveness of knowledge-based short video learning. Currently, research on knowledge-based short video learning is still in its early stages, and empirical studies are relatively lacking. Therefore, this study examines the self-determined motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievements in short video learning through surveys and case analysis. The study aims to expand the theoretical foundation in this field and provide practical value in enhancing the learning efficiency of short video learners.

2. Theoretical Background

2.1 Self-Determination Motivation

Self-determination theory is one of the most comprehensive and empirically supported theories of intrinsic motivation in the field of psychology (Akhasbi, Belghini, & Riyami, 2021). Initially, it emerged from the combination and systematization of organic integration theory and Deci's (1975) cognitive evaluation theory, exploring the tendency for internal organization and overall self-regulation,

as well as the integration between the self and others from an organic dialectical perspective. The complementary relationship between these two tendencies is essential for healthy development (Ryan & Deci, 2002). Self-determination motivation aims to distinguish between autonomous intention and controlled intention, focusing on the extent to which individual behavior is self-determined. It is a theory that explains human motivation on a continuum from autonomy to control. On one end of the continuum, behavior is freely chosen by the individual, representing intrinsic motivation, while on the other end, behavior is driven by compulsion or external control, representing extrinsic motivation (Salikhova, Lynch, & Salikhova, 2020; Choi, 2022). Most studies have found that self-determination is associated with positive psychological functioning; when self-determination is strong, it signifies positive individual performance, whereas weak self-determination is associated with motivational negativity (Jeon, 2017; Vallerand, 1997).

Online learners typically possess a certain degree of autonomy, allowing them to study according to their own schedule and pace. If learners have strong self-determination motivation, they are likely to show higher engagement, satisfaction, and learning outcomes in online learning, thereby maintaining consistent and effective learning behavior (Li, 2023). Unlike traditional learning environments, the maintenance of online learning behavior relies more on intrinsic motivation rather than external supervision and constraints. Knowledge-based short video learning falls under the category of online learning, similar to general online video courses in that it involves one-way content delivery while also allowing interaction with other learners or video creators. It covers a wide range of learning resources and content, meeting diverse learning needs. However, short videos are characterized by greater flexibility and convenience, enabling people to learn during fragmented moments of daily life. This feature aligns with the demand for quick information intake in today's "fast-food culture" (Sijia, 2019; Michael, 2010). The content of short videos tends to be concise, focusing on key knowledge points. For learners, insufficient self-determination motivation when using short videos may indicate a reliance on passive knowledge intake, an inability to customize learning paths according to personal needs and interests, poor learning efficiency, and a suboptimal learning experience. Therefore, whether short video learning supports learners' self-determined learning motivation remains to be explained.

2.2 Goal Orientation

The concept of goal orientation developed in the 1980s, based on achievement motivation theory, and is defined as an individual's belief about the purpose of their behavior and the reasons for engaging in it (Ames, 1992; Reeve, 2014). Goal orientation is broadly divided into mastery goal orientation and performance goal orientation. Individuals with mastery goal orientation focus on the learning process itself and adopt strategies to improve their abilities with a positive attitude. Even if they experience failure, they will reflect on the reasons for the failure and analyze the next steps for improvement and direction of effort (Ames, 1992). On the other hand, individuals with performance goal orientation see

learning as a means to an end, achieving normatively defined success through external recognition and evaluation, and it is strongly related to extrinsic motivation (Ames, 1992; Nicholls, 1989). Learners with high performance goals tend to avoid challenging tasks and adopt short-term learning strategies. If they fail to achieve their goals, they may experience negative emotions, while success with minimal effort leads to positive emotions (Meece & Blumenfeld, 1988).

Existing research has explored the relationship between achievement goals, suggesting that performance goal orientation does not always lead to negative outcomes, and individuals who possess both mastery and performance orientations may achieve better results (Barron & Harackiewicz, 2001). In the context of online learning, where freedom and flexibility are emphasized, students are also required to adjust their learning strategies and methods through multiple goal orientations to support their learning behavior (Heilporn, Lakhal, & Bélisle, 2023; Yeh, Kwok, Chien, Sweany, Baek, & McIntosh, 2019; Zhou, Wang, 2019). As a convenient and flexible online learning tool, short videos also require multiple goal orientations to enhance the learning experience and promote learning outcomes. Individuals with low goal desire may be more susceptible to distractions from other short video content or struggle to focus during short video learning, lacking a clear learning plan, and using excessive ineffective learning time. This may lead to low learning efficiency, difficulty in applying acquired knowledge, and further decrease in autonomy and positivity in short video learning (Gao & Xiao, 2022; Gao, 2023; Shan, 2023; Zou, 2022; Cardamone et al., 2023; Ting, Lai, Yong, Subramaniam, & Dollery, 2020).

2.3 Self-Regulated Learning Strategies

Self-regulated learning refers to the ability of learners to control and regulate their learning behavior to achieve their goals, actively engaging in the learning process through metacognitive, motivational, and behavioral strategies (Zimmerman, 1986, 1989). Self-regulated learning emphasizes the control and regulation of oneself during the learning process to achieve academic success, viewing learners as the object of regulation and management, capable of controlling their learning process (Pintrich & De Groot, 1990; Zimmerman & Martinez-Pons, 1986). Some argue that self-regulated learning has a greater impact on academic achievement than instructional effectiveness (Kim, 2018). Different views exist on the definition of self-regulated learning, with Corno and Mandinach (1983) defining it as a series of learning strategies used by learners in acquiring classroom knowledge, or specific cognitive activities undertaken to complete learning tasks. Bandura (1977) described self-regulated learning as the process by which learners become the subject of their learning activities, setting learning goals, diagnosing learning motivations, managing the resources needed for learning, and making decisions and taking action throughout the learning process. Based on these viewpoints, this study integrates the cognitive and motivational aspects of self-regulated learning, considering the individual as the subject of decision-making and action throughout the learning process, capable of judging learning goals and

174

motivations and managing resources accordingly.

Compared to traditional learning, online learning requires learners to independently schedule their study time and progress while managing diverse learning resources and environmental distractions. Individuals using short videos for learning may face similar constraints. Therefore, self-regulation strategies are particularly important in a highly flexible learning environment for filtering resources, maintaining focus, managing self-discipline, and setting personalized learning goals. These processes require constant adjustment of learning methods through self-assessment and reflection (Gao & Xiao, 2022; Anique, Ellen, Jill, & Andries, 2017). For instance, Wang and Zhang (2024) suggest that learners should purposefully select high-quality content, use short videos as auxiliary learning tools, and integrate knowledge points to form a complete knowledge system. Combining short video learning with other forms of learning can achieve an effective process of information intake. Ting, Lai, Yong, Subramaniam, and Dollery (2020) suggest that learners using short videos for learning could benefit from a structured knowledge framework to facilitate deep learning and build systematic knowledge connections. Although existing research offers insights into strategies for optimizing learning effectiveness with short videos, it remains necessary to comprehensively examine and explain self-regulated learning strategies as a factor influencing the effectiveness of short video learning.

2.4 Cognitive Academic Achievement

Academic achievement refers to the degree to which educational goals are met and is often used as an indicator of changes in learners' cognition (Hyo, 2021). In learning contexts, achievement can be measured through exam scores and credits. However, quantifying cognitive gains across multiple subjects can be challenging, making it difficult to objectively assess learners' academic performance. When these issues arise, cognitive academic achievement can be used for measurement instead of actual grades (Hwang, 2017). Additionally, the results of learners' self-assessed cognitive academic achievement are highly correlated with actual learning outcomes, maintaining consistency with traditional measures of academic performance (Chesebro & McCroskey, 2000; Top, 2012; Metcalfe, 2009). Even when similar items are used in self-report questionnaires, internal consistency yields relatively objective results (Hwang, 2018). Therefore, this study uses cognitive academic achievement as a proxy for academic achievement to assess learning effectiveness. As COVID-19 has led to a shift from offline to online teaching, the integration of teaching and media has rapidly developed. Researchers have increasingly focused on how online learning environments can enhance academic achievement, particularly with the inclusion of knowledge-based short videos in educational content, which has changed conventional learning methods (Wang & Zeng, 2022). Although some researchers have demonstrated the significant effects of short videos on academic achievement (Ting, Lai, Yong, Subramaniam, & Dollery, 2020; Ren, 2023; Zou, 2022), they also highlight the need for specific learning process controls and strategies to enhance the effectiveness of short video learning. However,

further research is needed to comprehensively assess the general conditions and universal strategies of academic achievement in knowledge-based short video learning.

3. Research Methods

3.1 Survey Participants and Questionnaire Composition

Table 1. Demographic Characteristics of Survey Participants

Component		Number	Ratio
Gender	Male	90	44.6%
	Female	112	55.4%
Grade Level	Lower Grade (1st and 2nd year)	106	52.5%
	Upper Grade (3rd and 4th year)	96	47.5%
Preferred Length of Knowledge-based	< 5 minutes	79	39.1%
	5-10 minutes	82	40.6%
	> 10 minutes	41	20.3%
Total Daily Viewing Time for Knowledge-based Short Videos	< 1 hour	85	42.1%
	1-2 hours	65	32.2%
	> 2 hours	52	25.7%
Total		202	100%

This study collected questionnaires using the Questionnaire Star app between July and August 2024. Before answering the questionnaire, participants were informed of the study's objectives and target audience. A total of 202 questionnaires were collected and analyzed using SPSS 25.0. The demographic information is presented in Table 1. Among the respondents, 90 were male (44.6%) and 112 were female (55.4%). Regarding academic standing, 106 were lower-grade students (52.5%), and 96 were upper-grade students (47.5%). The preferred length of time for watching knowledge-based short videos was under 5 minutes for 79 respondents (39.1%), 5-10 minutes for 82 respondents (40.6%), and more than 10 minutes for 41 respondents (20.3%). The total daily time spent watching knowledge-based short videos was less than 1 hour for 85 respondents (42.1%), 1-2 hours for 65 respondents (32.2%), and more than 2 hours for 52 respondents (25.7%).

Table 2. Composition of Research Instruments

Component		Number of Items		Cronbach α	
Self-Determination Motivation	Identified Regulation Motivation	6	11	0.828	0.883
	Intrinsic Motivation	5		0.836	
Goal Orientation	Mastery Goal Orientation	5	10	0.942	0.932
	Performance Goal Orientation	5		0.939	
Self-Regulated Learning Strategies	Cognitive Strategies	17	27	0.908	0.895
	Metacognitive Strategies	10		0.835	
Cognitive Academic Achievement		5		0.983	

Additionally, this study examined the reliability of the instruments used for assessing the main variables, as shown in Table 2. All measurement tools utilized a 5-point Likert scale. The self-determination motivation scale, derived from Jeon's (2017) research, was used as the instrument for this study, comprising 11 items, including 2 sub-factors. Identified regulation motivation consisted of 6 items, with a Cronbach's α of 0.828, and intrinsic motivation consisted of 5 items, with a Cronbach's α of 0.836. The content included statements like "Learning is a very interesting thing", "When I study and find something interesting, I become fully engrossed", and "I feel happy when I master knowledge that I didn't know before". The goal orientation scale from Seon's (2011) research was used, with a Cronbach's α of 0.932, including 10 items. Mastery goal orientation consisted of 5 items, with a Cronbach's α of 0.942, and performance goal orientation consisted of 5 items, with a Cronbach's α of 0.939. The content covered statements like "I care about whether I can learn new things", "When studying, I try to learn as much as possible", and "My goal is to learn many new study methods". The self-regulated learning strategies scale from Yang's (2000) research was used, with 27 items in total, including 17 items for cognitive strategies (Cronbach's α of 0.908) and 10 items for metacognitive strategies (Cronbach's α of 0.835). Items included statements like "I try to demonstrate what I've learned", "I try to remember as much as possible", and "After studying, I review what I've learned repeatedly". Cognitive academic achievement was measured using Ji's (2018) scale, which included 5 items, such as "I believe I will learn more through knowledge-based short video courses" and "My understanding of certain subjects has become clearer through short video courses", with a Cronbach's α of 0.983 in this study.

3.2 Case Study Participants and Interview Content Composition

Table 3. Characteristics of Case Study Participants

Participant	Grade	Gender	Number of Interviews
Student A	1st year	Male	4
Student B	2nd year	Female	4
Student C	3rd year	Male	4
Student D	4th year	Female	4

To gain an in-depth understanding of the impact of knowledge-based short video learning on university students' self-determination motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievement, this study conducted four in-depth interviews as shown in Table 3. To ensure the broadness and representativeness of the study participants, four students of different grades and genders were selected from the group who participated in the survey for case study interviews, as shown in Table 3. During the interviews, mobile devices and Word were used to record the content and key points in real-time for subsequent organization. The case study interviews were conducted from July to August 2024, involving 2 male students and 2 female students, each from a different year of study.

The themes and key factors explored in the four interviews were based on the self-determination motivation scale from Jeon (2017), which includes the factors of identified regulation motivation and intrinsic motivation; the goal orientation scale from Seon (2011), which includes the key factors of performance goals and mastery goals; the self-regulated learning strategies scale from Yang (2000), which includes cognitive strategies and metacognitive learning strategies; and the cognitive academic achievement scale from Ji (2018), which includes the key factor of cognitive academic achievement.

The theme of the first interview was self-determination motivation as shown in Table 4. The core questions included "Why did you choose to use knowledge-based short videos for learning?", "What kind of content in knowledge-based short videos interests you the most?", and "How do you feel when you learn new knowledge or solve problems through short videos?", focusing on the key factors of identified regulation motivation and intrinsic motivation. These questions were designed to deeply understand the sources of motivation and points of interest for students when using knowledge-based short videos for learning, and to explore their emotional responses when mastering new knowledge and solving problems, thereby analyzing the impact of short video learning on students' self-determination motivation.

Table 4. Composition of Case Study Interview Content

Participant	Interview Number	Interview Theme	Core Questions	Key Factors Explored
Student A Student B Student C Student D	1st Interview	Self-Determination Motivation	Why did you choose to use knowledge-based short videos for learning? What kind of content in knowledge-based short videos interests you the most? How do you feel when you learn new knowledge or solve problems through short videos? How long do you spend watching short videos daily?	Identified Regulation Motivation; Intrinsic Motivation
	2nd Interview	Goal Orientation	Do you set specific learning goals when watching short videos? How do you evaluate your progress in short video learning? Do you consider others' opinions while learning through short videos?	Performance Goals; Mastery Goals
	3rd Interview	Self-Regulated Learning Strategies	What methods do you use to help remember and understand content while learning through short videos? How do you schedule and manage your short video learning time and plan? How do you monitor and adjust your learning strategies during the learning process?	Cognitive Strategies; Metacognitive Learning Strategies
	4th Interview	Cognitive Academic Achievement	What specific knowledge have you gained through short video learning? In which subjects or areas has your understanding improved through short video learning? How has short video learning contributed to your academic performance?	Cognitive Academic Achievement

The theme of the second interview was goal orientation. The core questions included "Do you set specific learning goals when watching knowledge-based short videos?", "How do you evaluate your progress in short video learning?", and "Do you care about others' opinions when learning through short videos?", focusing on the key factors of performance goals and mastery goals. These questions aimed to understand how students set goals and evaluate themselves during short video learning and how they perceive others' opinions on their learning behavior, thereby analyzing the impact of short video learning on students' goal orientation.

The theme of the third interview was self-regulated learning strategies. The core questions included "What methods do you use to help remember and understand content when using knowledge-based short videos for learning?", "How do you schedule and manage your short video learning time and plan?", and "How do you monitor and adjust your learning strategies during the learning process?", focusing on the key factors of cognitive strategies and metacognitive learning strategies. These questions were designed to explore the specific learning methods and strategies that students use when learning through knowledge-based short videos, including how they plan and manage their study time and how they monitor and adjust their strategies during the learning process to improve learning outcomes.

The theme of the fourth interview was cognitive academic achievement. The core questions included "What specific knowledge have you gained through knowledge-based short video learning?", "In which subjects or areas has your understanding improved through short video learning?", and "How has knowledge-based short video learning contributed to your academic performance?", focusing on the key factor of cognitive academic achievement. These questions were designed to assess the specific knowledge and skills that students have gained through knowledge-based short video learning, and the impact of this learning on their academic performance and subject understanding, to analyze the contribution of short video learning to students' cognitive academic achievement and their self-assessment of learning outcomes.

4. Results

4.1 Basic Information of Survey Participants

Given that the tools used in this study are mature scales from previous research, and to avoid the complexity of measurement analysis caused by examining too many factors, this study followed the approach of Mathieu and Farr (1991) by synthesizing and packaging the sub-factors of self-determined motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievement to examine the overall levels of these factors and the differences across various demographic variables. Descriptive statistics, including mean, standard deviation, kurtosis, and skewness, were used to understand the general situation of self-determined motivation, goal orientation, self-regulated learning

strategies, and cognitive academic achievement, as well as the fulfillment of the conditions for a normal distribution. Self-determined motivation had a mean (M) of 3.07, goal orientation had a mean of 2.63, self-regulated learning strategies had a mean of 2.47, and cognitive academic achievement had a mean of 2.55. The specific data are shown in Table 5, where the kurtosis and skewness of each variable fall within the range of -2 to 2, indicating a normal distribution (Nadarajah, 2011).

Table 5. Descriptive Statistics of Survey Participants by Variable (N=202)

Actor	Mean	Standard Deviation	Kurtosis	Skewness
Self-Determined Motivation	3.07	0.58	1.231	-0.985
Goal Orientation	2.63	0.87	0.853	1.119
Self-Regulated Learning Strategies	2.47	0.54	-0.674	0.043
Cognitive Academic Achievement	2.55	1.07	-1.210	-0.097

To analyze the differences in self-determined motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievement, a factor analysis of variance was conducted, as shown in Table 6. First, no statistically significant differences were found across variables based on gender ($p > 0.5$). Second, regarding grade level differences, both self-determined motivation ($t = -11.786$) and cognitive academic achievement ($t = -6.901$) were statistically significant. Senior students demonstrated higher levels of self-determined motivation (M = 3.45) and cognitive academic achievement (M = 3.04) compared to junior students, whose levels were M = 2.71 and M = 2.11, respectively. Goal orientation and self-regulated learning strategies were not significant ($p > 0.5$).

In the category of preferred short video duration, significant differences were observed in self-determined motivation ($F = 77.314$), goal orientation ($F = 4.685$), and cognitive academic achievement ($F = 15.583$). Students who preferred watching knowledge-based short videos for more than 10 minutes had higher levels of self-determined motivation (M = 3.53), goal orientation (M = 2.86), and cognitive academic achievement (M = 3.15). Those who preferred watching for 5-10 minutes had corresponding means of M = 3.28, M = 2.41, and M = 2.68, while those who preferred watching for less than 5 minutes had means of M = 2.6, M = 2.74, and M = 2.12, respectively. Thus, students who preferred watching knowledge-based short videos for more than 10 minutes performed better in self-determined motivation, goal orientation, and cognitive academic achievement compared to other groups.

Table 6. Differences in Self-Determined Motivation, Goal Orientation, Self-Regulated Learning Strategies, and Cognitive Academic Achievement among Participants

Component		Self-Determined Motivation	Goal Orientation	Self-Regulated Learning Strategies	Cognitive Academic Achievement
Gender (M±SD)	Male(N=90)	3.09±0.52	2.6±0.82	2.47±0.55	2.52±1.07
	Female(N=112)	3.04±0.63	2.65±0.92	2.46±0.54	2.58±1.07
t		0.595	-0.442	0.152	-0.425
p		0.553	0.659	0.880	0.671
Grade (M±SD)	Junior(N=106)	2.71±0.5	2.7±1.06	2.47±0.5	2.11±0.93
	Senior(N=96)	3.45±0.39	2.55±0.6	2.46±0.59	3.04±1
t		-11.786	1.328	0.095	-6.901
p		<0.001	0.186	0.924	<0.001
Preferred Short Video Duration (M±SD)	<5 minutes (N=79)	2.6±0.55	2.74±1.02	2.41±0.62	2.12±0.93
	5-10 minutes (N=82)	3.28±0.2	2.41±0.61	2.5±0.49	2.68±1.1
	>10 minutes (N=41)	3.53±0.54	2.86±0.93	2.52±0.47	3.15±0.9
F		77.314	4.685	0.751	15.583
p		<0.001	0.010	0.473	<0.001
Total Daily Viewing Time of Knowledge-based Short Videos (M±SD)	< 1 hour (N=85)	2.96±0.73	3.4±0.8	2.47±0.55	2.47±1.18
	1-2 hour (N=65)	3.28±0.36	2.27±0.18	2.55±0.56	2.85±0.93
	>2 hour (N=52)	2.97±0.44	1.81±0.27	2.37±0.5	2.32±0.96
F		6.854	158.564	1.504	4.036
p		<0.001	<0.001	0.225	0.019

Regarding the total daily viewing time of knowledge-based short videos, significant differences were found in self-determined motivation (F = 6.854), goal orientation (F = 158.564), and cognitive academic achievement (F = 4.036), while self-regulated learning strategies showed no significant differences (p > 0.5). Students who watched knowledge-based short videos for more than 2 hours daily

had self-determined motivation (M = 2.97), goal orientation (M = 1.81), and cognitive academic achievement (M = 2.32), while those who watched for 1-2 hours had corresponding means of M = 3.28, M = 2.27, and M = 2.85. Students who watched for less than 1 hour had self-determined motivation (M = 2.96), goal orientation (M = 3.4), and cognitive academic achievement (M = 2.47). These results suggest that students who watch knowledge-based short videos for less than 1 hour daily exhibit higher goal orientation, while those who watch for 1-2 hours demonstrate relatively better self-determined motivation and cognitive academic achievement compared to other groups.

4.2 In-depth Interview Analysis on Self-Determination Motivation, Goal Orientation, Self-Regulated Learning Strategies, and Cognitive Academic Achievement

After coding the content from the four in-depth interviews, it was found that regarding self-determined motivation, Student A believed that knowledge-based short videos, with their short duration and rich content, are suitable for learning during fragmented time. They watch for about one hour daily, reflecting low self-determined motivation as shown in Table 7. Student B preferred using short videos to access diverse learning resources, allowing for learning anytime and anywhere during their spare time. They watched for 1-2 hours daily, indicating some flexibility and low motivation levels. Student C required a large amount of high-quality learning content, which short videos provided, watching for more than 2 hours daily, demonstrating strong self-determined motivation typical of senior students. Student D found the flexible learning method of short videos particularly helpful for preparing for exams and completing assignments, watching for 1-2 hours daily, reflecting high motivation among senior students for flexible learning methods.

In terms of goal orientation, Student A typically set specific learning goals and conducted self-assessments upon completion, showing clear performance and mastery goals. Student B used short videos mainly for focused review before exams and did not set long-term learning plans, indicating unclear goal setting and a tendency towards ad-hoc learning. Student C made detailed learning plans based on course content at the beginning of each semester, with short videos helping them quickly grasp abstract concepts. They regularly evaluated their learning progress, showcasing clear long-term goal setting and systematic self-assessment. Student D occasionally used short videos to help understand difficult classroom concepts but rarely made learning plans, lacking specific goals and regular evaluations.

In terms of self-regulated learning strategies, Student A used short videos for preview and review, employing dual visual and auditory stimulation to aid memory retention and conducting regular self-assessments. Student B used short videos to quickly grasp new knowledge, especially for exam review, but mainly relied on ad-hoc self-assessment. Student C combined short videos with other learning materials, such as textbooks and notes, to fully understand course content and performed systematic self-assessments. Student D preferred using videos to learn new concepts but rarely

combined them with other resources, mainly using them for understanding basic knowledge, and seldom conducted systematic self-assessments.

In terms of cognitive academic achievement, both Student A and Student C believe that short videos greatly assist in understanding complex concepts and preparing for exams, thereby enhancing their academic performance and learning outcomes. Student A feels that short videos effectively improved their academic achievement, while Student C combined short videos with traditional learning methods to boost learning efficiency and course grades. Although Students B and D believe that short videos are helpful in mastering exam content and understanding new knowledge, they think that more time is needed to consolidate and deepen their learning. Student B showed improvement in exam scores, while Student D needs to further deepen their understanding and application through other means.

Table 7. Interview Coding Table

1st Interview				
Component	Student A	Student B	Student C	Student D
Self-Determined Motivation	"I find knowledge-based short videos to be short and content-rich, making them suitable for learning during fragmented time. However, I sometimes rely on short videos rather than actively seeking more in-depth learning materials. I watch about 1 hour of educational short videos daily".	"I enjoy learning through short videos because they provide diverse learning resources. However, I usually need extra motivation to watch them daily. Although convenient, short videos can also easily distract me. I watch about 1-2 hours of educational short videos daily".	"I need a large amount of learning content, and knowledge-based short videos quickly provide high-quality information that meets my learning needs. I actively choose and filter high-quality short videos for learning. I watch over 2 hours of educational short videos daily".	"The flexibility of short video learning allows me to acquire a lot of useful information in a limited time, especially when preparing for exams and completing assignments. I actively select suitable short videos based on learning needs. I watch about 1-2 hours of educational short videos daily".
Identified	Recognizes the	Recognizes the	Recognizes the	Recognizes the

Regulation Motivation	advantage of short videos for fragmented time learning but relies on them	value of short videos in providing diverse learning resources but needs additional motivation	benefit of high-quality short videos in meeting large content needs and actively selects and filters high-quality short videos	help of short videos in exam preparation and completing assignments, and actively selects suitable short videos based on needs
Intrinsic Motivation	Interest in the content and convenience of short videos	Interest in diverse learning resources and enjoyment	Need for high-quality information and satisfaction in meeting learning needs	Interest in flexible learning methods and satisfaction in acquiring a lot of information in limited time
2nd Interview			
Goal Orientation	"I set specific learning goals when watching knowledge-based short videos and conduct self-assessments after completing them. Short videos help me achieve short-term goals, but long-term goals require supplementary learning methods".	"I mainly use short videos for focused review before exams and do not set long-term learning plans. Short videos are more of a supplementary learning tool rather than my main learning method".	"At the beginning of each semester, I make detailed learning plans based on course content, and short videos help me quickly understand abstract concepts. I regularly evaluate my learning progress to ensure the achievement of my learning goals".	"I occasionally watch short videos to help understand difficult classroom concepts but rarely make learning plans. I prefer to use short videos on an as-needed basis".
Performance Goals	Sets specific learning goals and conducts self-assessments	Uses short videos for focused review before exams	Makes detailed learning plans based on course content and regularly	Uses short videos to understand difficult

		evaluates learning progress	classroom concepts but rarely makes learning plans	
Mastery Goals	Achieves short-term goals but requires supplementary methods for long-term goals	Does not set long-term learning plans	Short videos help quickly understand abstract concepts	Uses short videos on an as-needed basis
3rd Interview				
Self-Regulated Learning Strategies	"Short videos help me preview and review content. By using both visual and auditory stimulation, I find it easier to remember information. However, I still need to deepen my learning through books and notes".	"I use short videos to quickly grasp new knowledge, especially for exam review, where they are particularly effective. Although short videos are effective, I mainly rely on ad-hoc self-assessments and need to supplement with other methods".	"I combine short videos with other learning materials, such as textbooks and notes, to fully understand course content. I perform systematic self-assessments to ensure learning effectiveness".	"I prefer using videos to learn new concepts but rarely combine them with other resources. I mainly use them to understand basic knowledge and need more time for systematic self-assessment".
Cognitive Strategies	Uses short videos for preview and review	Quickly grasps new knowledge, particularly effective for exam review	Combines short videos with other learning materials to fully understand course content	Uses videos to learn new concepts
Metacognitive Strategies	Uses dual visual and auditory stimulation to remember information but needs deeper learning	Relies on ad-hoc self-assessments and needs to supplement with other methods	Performs systematic self-assessments	Rarely combines with other resources, mainly uses for understanding

			basic knowledge
4th Interview			
Cognitive Academic Achievement	"Short videos have greatly helped me understand complex concepts and prepare for exams. However, I find I need more time to consolidate this knowledge".	"Using short videos helps me quickly grasp exam content, but I need other methods to deepen understanding and application".	"I combine short videos with traditional learning methods to improve learning efficiency and help me achieve good grades in my courses".	"Although short videos help me understand new knowledge, I still need other methods to deepen understanding and application to truly improve academic achievement".
Cognitive Academic Achievement	Short videos help in understanding complex concepts and preparing for exams but require more time to consolidate knowledge	Short videos help quickly grasp exam content but require other methods to deepen understanding and application	Combines short videos with traditional learning methods to improve learning efficiency and help achieve good grades	Short videos help understand new knowledge but require other methods to deepen understanding and application

Note: the last two columns of the "4th Interview" quote row map to the 3rd and 4th sub-columns.

5. Conclusion

The purpose of this study was to examine self-determined motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievement in the context of short video learning. A total of 202 university students were surveyed through self-report questionnaires, and case analyses were conducted with four students.

Based on the results of comprehensive statistical analysis and variance analysis, it was found that university students who use short videos for learning exhibit moderate levels of self-determined motivation (M = 3.07), while their goal orientation (M = 2.63), self-regulated learning strategies (M = 2.47), and cognitive academic achievement (M = 2.55) require improvement. This phenomenon may be related to the difficulties in short video learning revealed by previous research, such as unclear learning goals and a lack of supportive learning strategies, leading to insufficient deep learning behaviors and a systematic understanding of knowledge, resulting in suboptimal learning outcomes. The interview

results further explain these phenomena. Lower-grade students (A and B) showed weaker self-determined motivation, mainly relying on fragmented time and flexible learning methods for short video learning, resulting in moderate levels of self-determined motivation. In contrast, higher-grade students (C and D) demonstrated stronger self-determined motivation, requiring a large amount of high-quality learning content and finding the flexible learning approach of short videos particularly helpful.

Regarding goal orientation, students A and C displayed a higher level of goal orientation, setting specific learning goals and conducting self-assessments, with clear long-term goal setting. In contrast, students B and D showed lower goal orientation, lacking long-term learning plans and systematic assessments. For self-regulated learning strategies, students A and C demonstrated stronger self-regulation, using dual visual and auditory stimuli to remember information and combining multiple learning resources for systematic self-assessment. However, students B and D exhibited weaker self-regulation strategies, mainly relying on ad-hoc self-assessment and single learning resources. Regarding cognitive academic achievement, students A and C believed that short videos greatly helped them understand complex concepts and prepare for exams, enhancing their academic performance. In contrast, students B and D needed more time to consolidate and deepen their learning; although short videos helped them grasp exam content, their cognitive academic achievement still needed improvement.

Among the variance results, no significant gender differences were found. However, based on grade-level results, higher-grade students exhibited stronger self-determined motivation (M = 3.45) compared to lower-grade students (M = 2.71), and their cognitive academic achievement (M = 3.04) was also superior to that of lower-grade students (M = 2.11). This is related to their increased autonomy and decision-making abilities in learning. As students progress through grades, they gradually accumulate more learning experience and self-management skills, enabling them to better control their learning pace and choose appropriate learning methods, resulting in higher self-determined motivation. The interview results also indicated that higher-grade students (C and D) exhibited stronger self-determined motivation and cognitive academic achievement, suggesting they could better utilize short videos for systematic learning and combine multiple learning resources to enhance learning outcomes. In contrast, lower-grade students (A and B) showed weaker self-determined motivation and cognitive academic achievement, relying mainly on fragmented time for learning, with relatively lower motivation and academic achievement.

Regarding the preferred length of time for watching knowledge-based short videos, students who preferred watching videos longer than 10 minutes had higher self-determined motivation (M = 3.53), goal orientation (M = 2.86), and cognitive academic achievement (M = 3.15) than other groups, while those who preferred watching videos for less than 5 minutes exhibited lower trends across variables. An

increase in the levels of self-determined motivation, self-regulated learning strategies, and cognitive academic achievement was observed with increased viewing time. This may be because longer knowledge-based short videos usually cover more comprehensive content, satisfying students' needs for knowledge exploration, thus enhancing their intrinsic learning motivation. Additionally, longer videos can provide more detailed explanations and demonstrations, helping students better understand and grasp knowledge, thereby increasing their perceived learning effectiveness and knowledge accumulation, which contributes to enhanced achievement and a sense of efficacy.

For the total daily time spent watching knowledge-based short videos, students who watched for 1-2 hours daily showed better self-determined motivation and cognitive academic achievement than other groups. Those who watched for less than 1 hour daily exhibited a more prominent goal orientation compared to other groups, with a decrease in distinctive characteristics as total viewing time increased. This result indicates that a moderate learning investment, with a total study time of up to 2 hours, is most appropriate, allowing enough time for knowledge digestion and absorption without causing learning fatigue. This moderate investment can effectively enhance students' self-determined motivation, as they can perceive the effectiveness and progress of their learning within a relatively short period. Moreover, longer but not excessive study time allows for relatively in-depth learning rather than just surface information acquisition, helping students focus better on learning content and improving learning quality.

Additionally, the study results highlight the marginal effect of study time; as study time increases, students' attention and focus may decrease, leading to reduced learning efficiency. Excessively long study sessions can cause fatigue and distraction, affecting the setting and achievement of learning goals, thereby reducing the differences in goal orientation. The interview results also revealed that students C and D, who watched educational short videos for 1-2 hours daily, exhibited higher self-determined motivation and cognitive academic achievement. They could digest and absorb knowledge effectively without causing learning fatigue. Students A and B, who watched short videos for less than 1 hour daily, exhibited higher goal orientation, completing specific learning tasks and satisfying learning needs within a short period. This further confirms that moderate learning investment can enhance students' self-determined motivation and academic achievement, while excessively long study sessions may decrease attention and focus, affecting learning outcomes.

In the current results, goal orientation and self-regulated learning strategies were relatively low (M = 2.63, M = 2.47). Although some students (such as Student C) performed well in these areas, the overall levels were low. This may be due to weaker performance in these areas by other students, thereby lowering the overall levels. Additionally, various factors such as the learning environment, personal background, and study habits may also influence the overall levels. Future research can further explore the specific impact of these factors. Data also show that students who watched for 1-2 hours daily

exhibited the best performance in self-determined motivation and cognitive academic achievement (M = 3.28, M = 2.85), while performance declined when viewing time exceeded 2 hours. This marginal effect may be due to longer viewing sessions leading to decreased attention and fatigue. However, some students (such as Students C and D) who watched longer daily could still learn effectively, likely due to stronger self-regulation abilities and learning strategies that allowed them to maintain efficiency during extended study sessions. Therefore, individual differences play a crucial role in learning outcomes. Although the data did not reveal significant gender differences ($p > 0.05$), the interviews indicated that different genders exhibited varying learning motivation and strategies. This may be due to the limited sample size, which did not reveal significant differences. Future research could increase the sample size and analyze gender differences in learning motivation and strategies to explore potential impacts.

Thus, it can be understood that lower-grade students need guidance in applying short videos for learning. When selecting short video lengths, it is recommended to choose longer videos for learning, and study time for short videos should not be excessive; effective time management is necessary. Self-regulated learning strategies are factors that urgently need improvement, as no prominent group or significant differences were observed across demographic variables. This may be due to the need for long-term practice and reflection to cultivate self-regulated learning strategies in the short video learning environment, which might be lacking or underdeveloped in the current fragmented and instant nature of short video content. This requires attention.

Based on these results, students engaging in short video learning, due to the inherent time-limited nature of short videos, are allowed multiple opportunities to trial and error in content selection. Before starting each short video, students should clarify the extent of learning they aim to achieve and select high-quality content. If the video content is found to be unsuitable, students should promptly change it and adjust their learning methods accordingly. In relatively short total study time, goal orientation shows a moderate trend, indicating that short-term goals can be effectively achieved. However, short video learning still requires the establishment of long-term learning plans to stabilize academic achievement outcomes. For self-regulated learning strategies, students should reflect after each short video learning session, evaluate their learning outcomes and methods, and make necessary adjustments. If needed, students can seek appropriate feedback and motivational mechanisms to assess their learning.

This study explored the effectiveness of knowledge-based short video learning through surveys and case analyses, focusing on four aspects: self-determined motivation, goal orientation, self-regulated learning strategies, and cognitive academic achievement. Existing research has primarily focused on traditional classrooms and general online learning environments, while this study focuses on the emerging medium of knowledge-based short videos, expanding the applicability of the aforementioned

theories in a new media environment. Additionally, this study provides practical suggestions for educators and content creators in designing knowledge-based short videos, helping them create more effective educational content. The results suggest that moderate study time and longer short video length significantly enhance motivation and academic achievement, providing practical reference for the design of knowledge-based short videos. Finally, this study offers practical advice for short video learners to improve learning efficiency. These suggestions include selecting longer knowledge-based short videos, controlling daily study time, and continuously adjusting learning methods through reflection and evaluation, aiming to help them more efficiently utilize short video resources in their daily studies.

Acknowledgements

References

Akhasbi, H., Belghini, N., & Riyami, B. (2021). Self-determined learner motivation evaluation in distance learning context using web 2.0 tools, during the COVID-19 pandemic period. In *INTED2021 Proceedings* (pp. 2143-2151). IATED. doi:10.21125/inted.2021.0466

Ames, C., & Archer, J. (1988). Achievement goal in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, *80*(3), 260-267. doi:10.1037/0022-0663.80.3.260

Anique, B. H. B., Ellen, M. K., Jill, L., & Andries, G. (2017). The impact of an online tool for monitoring and regulating learning at university: overconfidence, learning strategy, and personality. *Metacognition and Learning*, *12*(1), 21-43. doi:10.1007/s11409-016-9159-5

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological review*, *84*, 191-215.

Barron, K. E., & Harackiewicz, J. M. (2001). Achievement goals and optimal motivation: Testing multiple goal models. *J. Pers. Soc. Psychol.*, *80*, 706-722. doi: 10.1037/0022-3514.80.5.706

Cardamone, C., Linder, D. A., Knoll, J. S., Webster, C. R. L., Murray, M., Frank, N., Shorter, B., Heinze, C. R., & Schonhoff, C. M. (2023). Use of short videos and case studies to enhance student confidence in biochemistry knowledge and application in a large lecture biochemistry course in first year veterinary curriculum. *Biochemistry and Molecular Biology Education*, (2), 164-170. doi:10.1002/BMB.21705

Chesebro, J. L., & McCroskey, J. C. (2000). The relationship between students' reports of learning and their actual recall of lecture material: A validity test. *Communication Education*, *49*(3), 297-301. https://doi.org/10.1080/03634520009379217

Choi, E. H. (2022). *Autoregressive Cross-Lagged Effects between Adolescents' Self-Determination, Self-Regulated Learning and Career Maturity*. Master's thesis. Seoul National University of Education.

Corno, L., & Mandinach, E. B. (1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist*, *18*, 88-108.

Deci, E. L. (1975). *Intrinsic motivatfon*. NY: Plenum Press.

Fei, C,. & Koo, J. J. (2020). The Impact of Communication Characteristics of Short Video Content on Users' Revisit Intentions: A Case Study of TikTok (Douyin). *A Journal of Brand Design Association of Korea*, *18*(3), 51-66. doi:10.18852/bdak.2020.18.3.51

Gao, Y. (2023). *Research on Knowledge Dissemination of Short Video Platforms from the Perspective of Social Network Analysis—Take Bilibili as an Example*. Paper presented at 2023 9th International Conference on Humanities and Social Science Research (ICHSSR 2023) Beijing, China.

Gao, Y., & Xiao, Q. (2022). The Influence of Short Videos' "Pan-Entertainment" Tendency on College Students' Learning and Critical Thinking Abilities. *Proceedings of the International Conference on Interdisciplinary Humanities and Communication Studies (ICIHCS 2022) (part8)* (pp. 348-353). Department of Journalism and Communication, Beijing Union University; Department of Software Engineering, Tianjin Normal University.

Gou, R., Chen, X., & Yang, X. (2022). The Connotation, Types and Application of Educational Short Videos in the Era of Intelligent Media. *Journal of Distance Education*, 103-110.

Heilporn, G., Lakhal, S., & Bélisle, M. (2023). Blended online courses: Students' learning experiences and engaging instructional strategies. *Pedagogies: An International Journal*, *19*(2), 233-256. doi: 10.1080/1554480X.2023.2219255

Hwang, G. (2017). T*he Effects of Participation Types in Tutoring Programs on Self-Regulated Learning and Perceived Academic Achievement*. Master's thesis. Catholic Kwandong University.

Jeon, H. (2017). *The Effects of Self-Determination Motivation and Achievement Goal Orientation on Creative Problem Solving Ability of Gifted Students in Secondary School: Focused on the Mediating Effect of Metacognition*. Master's thesis. Ewha Womans University. Retrieved from https://www.riss.kr/link?id=T14390445

Ji, H. P. (2018). *The Structural Relationship among Teaching Presence, Learning Presence and Learning Performance in Tutoring of Distance Learning*. Doctoral dissertation. Chonbuk National University. Retrieved from https://www.riss.kr/link?id=T14909385

Ki, B. K., & Kyoung, S. K. (2011). A Study on UCC Video Editing for Sensibility Delivery. *Journal of Digital Contents Society*, *12*(4), 449-456. doi:10.9728/dcs.2011.12.4.449

Kim, K. A. (2018). *Effects of Parental Academic Involvement and Self-Determination Motivation Perceived by Elementary School Students on Cognitive Self-regulated Learning Strategies*. Master's thesis. Pukyung National University. Retrieved from https://www.riss.kr/link?id=T14728968

Li, J. (2023). *Research on the Influencing Factors of Short Video Selection Behavior of Junior High School Sports Dance Learners*. Master's thesis. Shandong Normal University.

Mathieu, J. E., & Farr, J. L. (1991). Further evidence for the discriminant validity of measures of organizational commitment, job involvement, and job satisfaction. *Journal of Applied Psychology*, *76*(1), 127-133. doi:10.1037/0021-9010.76.1.127

Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology*, *80*(4), 514-523. doi:10.1037/0022-0663.80.4.514

Metcalfe, J. (2009). Metacognitive judgments and control of study. *Current Directions in Psychological Science*, *18*(3), 159-163. doi:10.1111/J.1467-8721.2009.01628.X

Michael, Z. N. (2010). New media, young audiences and discourses of attention: From Sesame Street to snack culture. *Media, Culture & Society*, *32*(4), 581-596. doi:10.1177/0163443710367693

Nadarajah, S. (2005). A generalized normal distribution. *Journal of Applied Statistics*, *32*(7), 685-694.

Nicholls, J. G. (1989). *The competitve eths and democratic ecication*. Cambridge, Mass: Harvard tniwersity Press.

Peng, J., Li, J. X., Tan, J. H., & Wang, X. A. (2024). Effect of animation short video combined with flipped classroom on autonomous learning ability of nursing students in emergency department. *Journal of Nursing (China)*, *31*(6), 22-25.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33-40. doi:10.1037/0022-0663.82.1.33

Reeve, J. (2014). *Understanding motivation and emotion*. New York: John Wiley & Sons.

Ren, D. D. (2023). *A Study on the Influence of Short Video Materials Teaching on the Development of College Students'Autonomous Learning Ability and Oral English Proficiency*. Master's thesis. doi: 10.26989/d.cnki.gdlhu.2023.001477

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. *Handbook of self-determination research* (pp. 3-33). Theuniversity of Rochester Press.

Salikhova, N. R., Lynch, M. F., & Salikhova, A. B. (2020). Psychological Aspects of Digital Learning: A Self-Determination Theory Perspective. *Contemporary Educational Technology*, *12*(2), ep280. doi:10.30935/cedtech/8584

Seon, Y. K. (2011). *The Analysis of the Multiple Mediating Effects of the Achievement Goal Orientation and Academic Self-Efficacy in the Relationship between Parenting Attitudes and Self-Regulated Learning Behavior*. Doctoral dissertation. Jeonbuk National University. Retrieved from https://www.riss.kr/link?id=T12331189

Shan, H. (2023). A SWOT Analysis and Strategy Study of English Learning Short Videos in the New Media Era. *Higher Education of Social Science*, *24*(2), 24-28.

Sijia, H. (2019). The Double Effect of Customer Interaction in Chinese Short Video APP: The Mediating Role of Brand Experience. *European Journal of Business and Management*, *11*(11), 85-91. doi:10.7176/EJBM

Siyu, L., Xinchen, J., Jingtong, W., Jiahao, L., & Zhen, L. (2020). Study Mode and System Design of Mobile Knowledge Sharing Based on Micro Video. In *Proceedings of the 3rd International Conference on Computer Science and Software Engineering (CSSE '20)* (pp. 130-138). Association for Computing Machinery, New York, NY, USA.

Ting, S. K., Lai, T. W., Yong, S. W., Subramaniam, G., & Dollery, B. (2020).Short video clip production on learning performance: Evidence from university students. I*nternational Journal of Innovation and Learning*, *28*(4), 415-429. doi:10.1504/IJIL.2020.110679

Top, E. (2012). Blogging as a social medium in undergraduate courses: Sense of community best predictor of perceived learning. *The Internet and Higher Education*, *15*(1), 24-28. doi:10.1016/j.iheduc.2011.02.001

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. *Advances in experimental social psychology*, *29*, 271-360. doi:10.1016/S0065-2601(08)60019-2

Wang, C., & Xiang, Y. (2022). Influences of Short Video Prevalence on Ideological Education in Universities. *Journal of Changchun University*, *32*(6), 40-42+84.

Wang, H. B. (2021). Influence of the Short Video on Adult Mobile Learning. *Journal of Guangzhou Open University*, *21*(1), 19-23+108.

Wang, H. B. (2021).Influence of the Short Video on Adult Mobile Learning. *Journal of Guangzhou Open University*, *21*(1), 19-23+108.

Wang, H. Y., & Zhang, X. L. (2024). The Influence of Knowledge Short-type Videos on Knowledge Learning. *The Guide of Science & Education*, *30*, 52-54.

Wang, H., & Zhang, X. (2022). The Influence of Knowledge Short-type Videos on Knowledge Learning. *The Guide of Science & Education*, *30*, 52-54. doi:10.16400/j.cnki.kjdk.2022.30.017

Wang, M. M., & Zeng, F. G. (2022). Research on APP Design of Short Video Learning for the Elderly Based on User Acceptance. *Packaging Engineering*, *43*(4), 203-209.

Wang, X. C. (2023). *Research on Middle School Chemistry Project-Based Learning Practice Based on Short Video Production in Information Age*. Minnan Normal University. doi:10.27726/d.cnki.gzzsf.2023.000363

Wu, S. Q. (2022). *Dance short video for dance sports college students Study on the Influence of Learning Motivation*. Master's thesis. Wuhan Sports University. doi:10.27384/d.cnki.gwhtc.2022.000131

Yang, M. H. (2000). *The Study on the Development and Validation of Self-Regulated Learning Model*. Doctoral dissertation. Seoul National University. Retrieved from https://www.riss.kr/link?id=T7646673

Yeh, Y. C., Kwok, O. M., Chien, H. Y., Sweany, N. W., Baek, E., & McIntosh, W. A. (2019). How college students' achievement goal orientations predict their expected online learning outcome: The mediation roles of self-regulated learning strategies and supportive online learning behaviors. *Online Learning*, *23*(4), 23-41. doi:10.24059/olj.v23i4.2076

Zhang, Y., Lucas, M., & Pedro, L. (2022). A Decade of Short Videos for Foreign Language Teaching and Learning: A Review. *Education Sciences*, *12*(11), 786-786. doi:10.3390/EDUCSCI12110786

Zhao, X. L., & Ma, J. (2020). Analysis on the Interaction Characteristics of Users and Contents of Instant Video Based on the TikTok Application: Focusing on the Case of Chinese Men in Their Twenties. *Journal of The Korean Society Design Culture*, *26*(2), 527-537. 10.18208/ksdc.2020.26.2.527

Zhou, Z., & Zhang, Y. (2023). Intrinsic and Extrinsic Motivation in Distance Education: A Self-Determination Perspective. *American Journal of Distance Education*, *38*(1), 51-64. doi:10.1080/08923647.2023.2177032

Zimmerman, B. J. (1986). Becoming a self-regulated learner: Which are the key sub-processes? *Contemporary Educational Psychology*, *11*, 307-313.

Zimmerman, B. J. (1989). A Social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, *81*, 329-339. doi:10.1037/0022-0663.81.3.329

Zimmerman, B. J., & Martinez, P. M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational Research Journal*, *23*(4), 614-628. doi:10.3102/00028312023004614

Zimmerman, B. J., & Martinez-Pons, M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational research journal*, *23*, 614-628.

Zou, Y. (2022). *A study of the factors that affect the learning effect of short knowledge videos: Focusing on the types of short video*. Master's thesis. Ewha Womans University. Retrieved from https://www.riss.kr/link?id=T16067567