A Study on the Efficacy of Video Self-Modeling in Enhancing Reading Fluency and Motivation Among EFL Elementary School Girls with Low Reading Proficiency

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مستخلص:

هدفت الدراسة إلى فحص فاعلية نمذجة الذات عبر الفيديو (VSM) في تحسين الطلاقة في القراءة والدافعية لدى الطالبات الضعيفات في القراءة بالصف السادس. تكوّنت عينة الدراسة من ٤٤ طالبة في الصف السادس تم تشخيصهن كقارئات ضعيفات في اللغة الإنجليزية كلغة أجنبية (EFL)، وتم توزيعهن عشوائيًا إلى مجموعتين متكافئتين: مجموعة ضابطة وأخرى تجريبية. واعتمدت الدراسة على اختبار لطلاقة القراءة لقياس مهارات الطلاقة، بالإضافة إلى مقياس للدافعية نحو القراءة في اللغة الإنجليزية يتكون من ٢٢ عبارة موزعة على ثلاثة أبعاد داخلية (كفاءة القراءة، متعة القراءة، والانخراط في القراءة) وبُعدين خارجيين (الاعتراف والامتثال). وقد أظهرت النتائج وجود فروق ذات دلالة إحصائية بين القياسين القبلي والبعدي لطلاقة القراءة في المجموعة التجريبية لصالح القياس البعدي. كما وُجدت فروق ذات دلالة إحصائية بين المجموعتين الضابطة والتجريبية في القياس البعدي لطلاقة القراءة لصالح المجموعة التجريبية. كذلك، أظهرت النتائج وجود فروق ذات دلالة إحصائية بين القياسين القبلي والبعدي لدافعية القراءة في المجموعة التجريبية لصالح القياس البعدي، وفروق ذات دلالة إحصائية عند مستوى ٠.٠٥ بين المجموعتين في القياس البعدي لمستوى الدافعية، لصالح المجموعة التجريبية. وخلصت الدراسة إلى أن التدخل ساهم في تعزيز طلاقة القراءة والدافعية والانخراط في القراءة لدى الطالبات من خلال تمكينهن من ملاحظة تقدمهن الذاتي، وتعزيز السلوكيات الصحيحة، وتنمية شعور بالإنجاز..

الكلمات المفتاحية :

نمذجة الذات عبر الفيديو – الطلاقة في القراءة– الدافعية للقراءة .

ABSTRACT

The study aimed to examine the effectiveness of Video Self-Modeling (VSM) in improving reading fluency and motivation among female poor readers in sixth grade. The study group consisted of 44 sixth-grade students who were diagnosed as poor readers in English as a Foreign language (EFL). They were randomly distributed into two equivalent groups: a control group and an experimental group. The study adopts a reading fluency test to measure reading fluency skills and a reading motivation scale of EFL that consists of 22 statements distributed across three intrinsically oriented (reading efficacy, reading enjoyment, and involvement) and two extrinsically oriented dimensions (recognition and compliance). The results showed statistically significant differences between the pre- and post-measurements of reading fluency in the experimental group in favor of the post-measurement. There were also statistically significant differences between the control and experimental groups in the post-measurement of reading fluency in favor of the experimental group. Furthermore, the results indicated statistically significant differences between the pre- and post-measurements of reading motivation in the experimental group in favor of the post-measurement, and statistically significant differences at the 0.05 significance level between the control and experimental groups in the post-measurement of reading motivation level, in favor of the experimental group. It was concluded that the intervention enhanced students' reading fluency, motivation, and engagement by allowing them to observe their own progress, reinforcing correct behaviors, and fostering a sense of achievement.

Keywords: video self-modeling (VSM), reading fluency, reading motivation, elementary school girls

Introduction

Reading is the cornerstone of all human progress, past and present. It equips individuals and societies to navigate the rapid advancements in science, technology, and communication. A focus on reading is essential for achieving comprehensive development by eradicating technological illiteracy and helping new generations confront the challenges of globalization with a balance of tradition and modernity. Reading is a foundational skill for a child's academic and personal development. When a child struggles with reading, it can have far-reaching consequences. Poor reading proficiency often leads to poor performance across all other language skills, as many require strong reading comprehension. This can result in a cycle of academic failure and frustration. Furthermore, it can negatively impact a learner's self-esteem and confidence, potentially leading to maladaptive behaviors, a lack of motivation, and difficulties in oral interactions in the target language. Ultimately, addressing reading challenges early is crucial for a learner's overall success in foreign language acquisition.

In this context, two critical aspects related to reading difficulties must be considered when designing remedial intervention programs, often overlooked in reading instruction and treatment: reading fluency and reading motivation (Abdel Halim, 2009; Ari, 2015). Reading fluency is briefly defined as the ability to read with sufficient accuracy, speed, and comprehension.) Over the past decade, fluency has been viewed as a core element and indicator of skilled reading and strong motivation in basic reading and writing curricula.

However, most of this focus has been on a relatively narrow definition of fluency, automatic word recognition. Some researchers proposed a comprehensive definition of fluency as the combination of accuracy, automaticity, and expressive oral reading, which collectively contribute to the reader's comprehension (Kuhn et al., 2010). This is evident during oral reading through word recognition, appropriate speed, phrasing, and intonation, which support understanding.

While improving reading fluency is a key goal, it's equally important to address reading motivation. A student's sense of achievement directly influences their desire to read, which in turn impacts their academic progress. When motivation wanes, students in primary and secondary school lose interest in developing the skills and strategies necessary for academic success. Poor readers often exhibit negative attitudes toward reading tasks, reflecting their low motivation (Abdel Halim, 2009; Melekoglu & Wilkerson, 2013). This highlights a critical need for teachers to actively engage and inspire students. By stimulating a genuine interest in reading, educators can help students reach higher cognitive levels, moving them beyond simple rote memorization and mechanical practice. Cultivating a positive attitude toward reading is essential for long-term academic and intellectual growth.

In today's technology-driven world, it's essential to use modern tools to address reading difficulties. The educational system, especially special education, must embrace this technological shift to combat challenges like reading weakness. Technology makes learning more efficient and engaging, and its integration into language classrooms boosts student participation and interaction (Ulker, 2016). One powerful technological intervention is VSM. This behavioral technique helps students learn and improve new skills by observing themselves perform a task successfully. The core idea, rooted in Bandura's (1986) social learning theory, is that individuals learn most effectively when they see themselves as a successful role model (Hart, 2010). By watching videos of themselves performing a desired behavior, students are more likely to achieve that behavior in the future.

Research has shown VSM's effectiveness across various reading skills like improving oral fluency (Montgomerie et al., 2014; Anestin, 2015), reading fluency and comprehension (Hitchcock et al., 2004; Robson et al., 2015), decoding and recognizing sight words (Ayala and O'Connor, 2013), and positive attitudes toward reading (Greenberg et al., 2002). Given the vast body of knowledge on reading, its importance, and the dangers of reading failure, which should be considered the most serious academic issue affecting educational reality due to its impact on students' overall academic failure, researchers, educators, and teachers must recognize the need to harness technology effectively to address reading difficulties.

Study Problem

Reading fluency and motivation pose significant challenges for many EFL elementary school girls, particularly those identified as poor readers. In EFL contexts, the acquisition of reading skills is often compounded by limited exposure to the target language outside the classroom, leading to difficulties in decoding, comprehension, and ultimately, a lack of reading automaticity. This deficiency not only impedes progress across various language skills but can also severely dampen a student's confidence and intrinsic motivation to engage with reading. Consequently, there is an urgent need to investigate innovative and effective interventions that can simultaneously build reading fluency and foster a positive, motivated attitude towards reading in this vulnerable population.

Question of the Study

Research evidence supports the benefits of video modeling across various fields. This method helps mitigate the impact of dyslexia, reduces psychological distress, enhances reading motivation, and fosters engagement during learning. Based on this, the study problem is represented by the following main question: What is the effectiveness of using video self-modeling intervention in developing reading fluency and reading motivation among EFL elementary school girls **with low reading proficiency**?

Hypotheses of the Study

The study hypothesized the following:

1. There are statistically significant differences at the 0.05 significance level between the experimental and control groups in the post-administration of reading fluency in favor of the experimental group.
2. There are statistically significant differences at the 0.05 significance level between the pre- and post-administration of reading fluency in the experimental group.
3. There are statistically significant differences at the 0.05 significance level between the experimental and control groups in the post-administration of reading motivation in favor of the experimental group.
4. There are statistically significant differences at the 0.05 significance level between the pre- and post-administration of reading motivation in the experimental group.

Significance of the Study

- Theoretical significance:

This study's theoretical importance stems from the foundational role of reading, particularly in addressing the widespread and academically impactful challenge of reading difficulties. It specifically focuses on two critical, yet often neglected, aspects within reading instruction and assessment: reading fluency and reading motivation. By zeroing in on these areas, the study aims to fill a notable gap in understanding and intervention strategies for poor readers.

- Practical significance:

This study holds considerable value as the first study in its context to implement this specific intervention among EFL elementary school girls with low reading proficiency**,** thus enriching the academic literature. Furthermore, it introduces a technology-based remedial approach, underscoring the necessity for more research to validate and support the application of such modern, effective educational tools.

Delimitations of the Study

1. Grade level and gender: The study is limited to sixth-grade students learning English as a Foreign Language (EFL), as this stage represents a transitional phase where foundational reading skills are expected to be developed. The study includes

only female students, due to the limited implementation of the intervention program in male schools within the Saudi context where the study was conducted. The findings may not be generalizable to students in other grade levels or to male students.

2. Reading Proficiency Level: The study specifically targets students who were diagnosed as poor readers, and thus, the effectiveness of the intervention may differ for students with average or advanced reading skills.
3. Measurement Tools and Variables: The study examines the impact of Video Self-Modeling (VSM) only as the independent variable. Reading fluency and motivation were assessed using a reading fluency test and a reading motivation scale designed for EFL learners. These tools may not capture all dimensions of reading development or motivation.

Literature Review

Reading Fluency

The concept of Reading Fluency

Oral reading fluency is considered an indicator of overall reading competence (Fuchs et al., 2001). The concept of fluency began with the work of Cattell and Huey in 1886, when they found that letters and words representing symbols, such as colors, images, and other tangible categories, are named more quickly than other types. They were the first to highlight automaticity rates, such as recognition speed for naming letters and reading words, and the increased reading speed when semantic and syntactic information is available, as in full sentences (Breznitz, 2006; Rasinski et al., 2011). In the 1980s, reading research primarily focused on phonological decoding, the ability to sound out words using knowledge of letter-sound relationships. At that time, fluent reading was defined as the automatic and accurate recognition of single words. If a reader could decode words effortlessly, their reading was considered fluent. By the 1990s, advancements in cognitive science and technology enabled researchers to observe mental processes more closely. This led to a broader understanding of reading difficulties and the emergence of new theories.

Models such as automaticity, the double deficit hypothesis, the systems analysis approach, and speed of information processing began to explain why some readers struggle with fluency (Breznitz, 2006). These newer theories emphasized that reading is not governed by a single skill but involves multiple, interacting cognitive components. Rather than viewing reading as a linear or isolated process, researchers began to see it as a dynamic system where various mental functions, such as attention, memory, and processing speed, work together. This multidimensional perspective helped redefine reading fluency and provided deeper insight into the nature of dysfluency.

Determinants of Reading Fluency

Despite growing understanding of reading fluency over the past decade, the relationship between fluency and its core components remains not fully revealed. Traditional definitions of oral reading fluency have focused primarily on accuracy and speed in reading individual words. However, modern definitions suggest that reading fluency is multi-componential and

complex, requiring coordination among various sub-skills and processes, such as orthographic representation, phonological awareness, lexical access, and memory functions (Fuchs et al., 2001; Lipka, 2017)

Reading fluency is a multifaceted skill that encompasses speed, accuracy, and prosody that play vital roles in effective reading (Hudson et al., 2005). Speed or reading rate reflects learners' cognitive efficiency in processing texts accurately. Slower reading often signals difficulty in decoding, which can limit the reader's ability to engage with more complex comprehension tasks (Schwanenflugel et al., 2004). Many educational interventions aim to boost reading speed through repeated reading exercises, often using non-fiction texts. While these programs may lead to faster reading, they frequently neglect comprehension, which is the true goal of reading. Students may learn to read quickly but fail to grasp the meaning of the text, resulting in only marginal gains in understanding (Rasinski, 2006).

As for accuracy, it refers to the reader's ability to correctly identify and pronounce words. High accuracy ensures that the meaning of the text is preserved and understood (Masruddin, 2016; Hudson et al., 2005). Accuracy in reading fluency refers to the correct identification of letters and words, and it plays a crucial role in early reading development. According to LaBerge and Samuels' (1974) model of perceptual learning, reading begins with lower-order processing, where attention is focused on recognizing letters and associating them with sounds. In this initial stage, performance is accurate but slow, as readers expend cognitive effort on decoding. With practice, readers enter the utilization stage, where familiar words are recognized more efficiently and accuracy becomes nearly perfect. Eventually, through continued repetition, reading reaches automaticity, a stage where decoding occurs effortlessly and fluently. This progression highlights that accuracy is mastered before speed, forming the bedrock upon which fluent and meaningful reading is built (Breznitz, 2006).

Moreover, prosody or expressive reading involves reading with appropriate rhythm, intonation, and expression. It signals deeper linguistic fluency and comprehension, allowing the reader to convey meaning beyond the literal words (Kuhn et al., 2010). It is often assumed that oral reading draws on speech production processes, meaning that prosodic features in reading are shaped similarly to those in spoken language. Importantly, prosody is believed to emerge from a structural representation of the text, such as syntax and phrasing, which forms before full lexical and semantic processing. This suggests that fluent readers use structural cues to guide expressive reading, even before fully understanding every word (Breznitz, 2006; Schwanenflugel & Benjamin, 2017; Hudson et al., 2005).

Fluency alone is not enough. Reading motivation, both intrinsic and extrinsic, is essential for meaningful engagement. Students should be encouraged to read not just to complete assignments but to explore ideas, gain knowledge, and enjoy the process. Motivation enhances comprehension and fosters a lifelong reading habit. Accordingly, this study emphasizes reading fluency as a cornerstone of literacy. When fluency is present through speed, accuracy, and prosody, it signals a reader's ability to navigate text effectively and engage with its meaning. It's not just about how fast one reads, but how well one understands and connects with the material.

Reading Motivation

The nature of reading motivation

Motivation has been widely studied in the varied academic context, often under the umbrella of achievement motivation. Recently, there has been a shift toward linking motivation to specific domains such as reading, revealing a strong relationship between the two (Azar & Tanggaraju, 2020; McGeown et al., 2020; Namaziandost et al., 2019). Reading motivation is defined as the intention and determination of the reader to begin a reading task and persist in completing it. This behavior may be driven by either intrinsic or extrinsic motivation. It encompasses the factors that influence an individual's desire and willingness to read. It acts as an internal driving force that sustains engagement and goal-oriented behavior. When readers have a personal interest in a topic or genre, they are more likely to seek out related materials, making choice and autonomy in selecting texts crucial for fostering motivation. Thus, a supportive reading environment, both at home and in school, plays a significant role. Access to diverse books, encouragement from role models, and opportunities to discuss and share reading experiences all contribute to a positive reading culture. In educational settings, promoting reading motivation is essential not only for academic success but also for cultivating lifelong reading habits. When reading is enjoyable and personally meaningful, individuals are more likely to stay engaged and continue reading over time (Fuad et.al., 2021; Hebbecker et al., 2019).

The impact of reading motivation on reading proficiency

Reading motivation plays a pivotal role in fostering purposeful engagement with texts, particularly among EFL learners, where it is essential for improving comprehension and academic performance across disciplines. As emphasized by Namazi et al. (2022) and Rosenfeld et al. (2001), motivation to read significantly enhances the effectiveness of reading in foreign language contexts. Pachtman and Wilson (2006) further underscore the value of promoting reading motivation by granting students autonomy in selecting their reading materials, which fosters deeper engagement and a more enjoyable reading experience.

Hairul et al. (2012) highlight the substantial impact of reading motivation on comprehension, noting its influence on various motivational dimensions and reading strategies across diverse learning environments. Their findings suggest that students with higher levels of reading motivation are more inclined to participate in extensive reading activities. Moreover, they stress the importance of reading motivation in advancing comprehension among language learners, reinforcing its central role in acquiring proficiency in the target language. The different types of motivation and their implications are discussed in subsequent sections.

Research has shown that encouraging students to read enhances their reading proficiency, especially among those with learning difficulties (Melekoglu, 2011). Literature identifies traits of highly motivated readers in high self-efficacy and confidence, willingness to face challenges and solve reading problems, and eagerness to learn (McBreen & Savage, 2021). It consistently shows that reading motivation is closely tied to reading achievement and development. Studies have found positive correlations between motivation and performance (Park, 2011), and motivation contributes uniquely to gains in reading comprehension, even when initial comprehension levels are accounted for (Taboada Barber et al., 2009). Targeting

motivation in instruction can enhance both reading outcomes and students' enthusiasm for reading (van Steensel et al., 2017).

Further studies highlight the dynamic relationship between reading skills and motivation (Ro, 2013). Wigfield, Gladstone, & Turci (2016) found that motivation is linked to comprehension and varies by gender, with girls generally displaying more positive attitudes toward reading. Skilled readers tend to enjoy and engage in reading, while less proficient readers often avoid it. This avoidance is influenced by negative beliefs, such as viewing reading as difficult, feeling less competent, and holding unfavorable attitudes toward reading (Morgan & Fuchs, 2007; Morgan et al., 2008). For struggling readers, low motivation can intensify reading difficulties, creating a cycle of poor performance and disengagement (Morgan et al., 2008). Effective reading instruction should therefore address both cognitive and motivational factors to support growth (Nelson & Manset-Williamson, 2006).

VSM

Video modeling is a behavioral intervention technique that uses video demonstrations to teach targeted skills. Children watch clips showing the successful execution of a behavior, performed by peers, adults, or themselves, and then imitate what they see. A specialized form, *VSM,* allows children to observe themselves performing the desired behavior correctly, which can be more impactful than watching others (Dowrick, 2012).

There are two primary approaches to video self-modeling: feedforward and positive self-review. Feedforward involves showing a child a video of themselves performing a skill they are still learning. This is achieved either through guided practice or by editing together successful components to simulate mastery (Buggey & Ogle, 2012). For example, a teacher might record a student echo-reading story phrases, then compile those clips to portray the student reading fluently on their own. This method can also be used to

model specific strategies like word pronunciation. Feedforward is ideal for introducing new skills, while positive self-review reinforces and maintains recently acquired abilities by showcasing the student's best performances (Hitchcock et al., 2004).

Theoretical Foundations of VSM

Video self-modeling is grounded in Bandura's Social Learning Theory (1989), which posits that individuals can learn behaviors by observing others or receiving instructions, even without direct experience. Later, Bandura's work on self-efficacy (1997) emphasized that watching oneself succeed enhances confidence and provides a clear blueprint for skill execution. This theory underscores the interplay between cognitive awareness and observable behavior in learning.

Additionally, the Behavioral Theory supports video self-modeling by highlighting the importance of associating behaviors with their outcomes, positive or negative. This helps learners distinguish effective actions and reinforces desired behaviors (Hitchcock, Dowrick, & Prater, 2003). Bandura identified four essential processes for learning through observation: a) attention that focuses on the model's behavior, b) retention by storing the behavior in memory, c) reproduction by translating memory into action using motor skills, and d)

motivation by the drive to perform the behavior, often influenced by reinforcement. These processes form the backbone of observational learning, emphasizing that most human behaviors are acquired through imitation and modeling. The theory also highlights the cognitive dimension of learning, showing how mental processes and external actions work together to shape behavior.

Using VSM in enhancing reading fluency and motivation

VSM is an evidence-based intervention that leverages digital recordings of students performing reading tasks successfully to promote fluency and motivation. By allowing learners to observe themselves reading fluently, VSM reinforces accurate word recognition, expressive prosody, and reading confidence. This approach aligns with the nature of reading fluency, which integrates speed, accuracy, and expression, and supports motivation by fostering a sense of competence and self-efficacy. Hitchcock et al. (2004) and Ayala & O'Connor (2013) found that individualized VSM interventions improved fluency and decoding skills in first-grade students at risk of reading failure. Decker & Buggey (2014), Montgomerie (2014), and Anestin (2015) reported gains in correct words per minute and oral fluency among elementary students, with Anestin also noting improved attitudes and skill generalization. Robson et al. (2015) highlighted VSM's rapid impact on fluency, comprehension, and motivation, while Anderson (2016) showed enhanced reading rates and self-perception in older students. Quantitative results from Li et al. (2022) show that with the help of VSM, students' sentence-level stress improved significantly in all three parameters: pitch, intensity, and duration. A post-training survey showed that participants felt successful and satisfied when using their own voice as instructional material.

Collectively, these findings support VSM as an effective, adaptable tool for fostering reading development across age groups and instructional contexts. Research by Edwards and Lambros (2018) demonstrated that VSM significantly improved oral reading fluency and reduced errors among dual language learners with disabilities, suggesting its effectiveness for diverse and struggling readers. These studies collectively demonstrate the positive impact of video self-modeling interventions on reading difficulties and various reading skills. The current study stands out as the first in its context to use this type of intervention to address reading fluency and motivation.

Literature also revealed that fluent reading may be hindered even in individuals without mental or physical disorders due to issues like skipping letters or words, excessive pausing, repetition, or tracking with fingers or head (Sen, 2016). To address these challenges, various techniques such as choral reading, echo reading, and the 3P method (Pause, Prompt, Praise) are commonly used. VSM stands out as a technology-supported, individualized strategy that promotes discovery-based learning. Compared to traditional methods, VSM is cost-effective and time-efficient for educators. According to Dowrick (2012), implementing VSM involves selecting appropriate texts, preparing recording tools, filming the student reading, reviewing errors, re-reading for improvement, discussing the text, and assessing comprehension. These steps help foster fluent reading through personalized, reflective practice.

Method

Study Design

The study employed a quasi-experimental design with two groups: an experimental group and a control group. This design was chosen for its suitability to the study's objectives. The researcher administered a pre-test for reading fluency and a pre-assessment of reading motivation to both groups. The VSM intervention was then applied to the experimental group only. The control group didn't experience any additional interventions and received only the traditional reading practices during the treatment period. After the intervention, both assessments were re-administered to both groups to evaluate the program's effectiveness in improving reading fluency and motivation among the experimental group.

Participants

The study recruited 44 sixth-grade female students who were identified as poor readers according to the pretest scores in the reading fluency test. They were assigned to an experimental group (n=22) and a control group (n=22), all of whom exhibited clear reading difficulties. The group size was determined based on previous studies and the logistical demands of the individual VSM intervention, which required significant effort in preparing sessions, filming each student during reading, editing the videos to include only correct reading performances, and presenting the videos individually at the start of each session.

This grade level was chosen because it represents a transitional stage between primary and middle school stages, where students are expected to have acquired solid reading skills and a positive attitude toward reading. Struggling at this stage can have serious academic and psychological consequences. The participants were limited to female students due to the limited implementation of the program in male schools in KSA, where the study was conducted. The participants were drawn from a single school, due to its accessibility and the sufficient number of sixth-grade female students with poor reading. This helped reduce threats to validity. Participants were randomly assigned to the two groups using the matching pairs method (Langdridge, 2004), which is known for achieving balance between groups and enhancing the equivalence of the design. In this method, participants are paired based on specific characteristics, and one member of each pair is assigned to the control group while the other is assigned to the experimental group, depending on scores from the pre-test. Group equivalence was confirmed using an independent samples t-test on the pre-test scores for reading fluency and motivation.

Instruments and Materials

Reading Fluency Test

The study used a reading fluency test developed by the researcher to assess three core fluency components: pronunciation, reading accuracy, and reading rate. The test comprises four reading passages, each with a designated word count to be read within one minute. Each skill is evaluated using a specific performance-level card.

Test Validation. Validity was confirmed through two main approaches: face validity and internal consistency. After thorough construction and validation, the test was approved for use with the main study participants.

- *Face validity* was achieved by presenting the test to a panel of experts in Linguistics, curriculum design, and teaching methods. Their feedback affirmed the test's appropriateness for the target group, the scientific and linguistic integrity of its items, and the clarity of its instructions. Revisions were made based on their input, making the test ready for piloting.
- *Internal consistency* was measured using Cronbach's Alpha reliability coefficients, comparing each skill's score with the total test score (40 points). The results showed strong internal consistency (overall fluency test: 0.8, pronunciation: 0.72, reading accuracy: 0.88, reading rate: 0.87, $p<0.05$).

Piloting the Test. The LI skills test was piloted with 30 English majors to determine the ideal completion time and further validate its psychometric properties.

Test Reliability. Reliability was confirmed using the test-retest method over a two-week interval. A high correlation coefficient of 0.89 between the two administrations demonstrated the test's stability.

Item Analysis and Test Duration. Post-pilot item analysis showed acceptable ease and difficulty coefficients (overall fluency test: 0.67, pronunciation: 0.66, reading accuracy: 0.59, reading rate: 0.54) and discrimination coefficients (overall fluency test: 0.32, pronunciation: 0.45, reading accuracy: 0.54, reading rate: 0.53). The optimal test duration was set at one minute per passage, with an additional 10 minutes allocated for instructions and preparation.

Inter-Rater Reliability Procedure. To ensure scoring objectivity and reliability, an inter-rater procedure was applied to the reading fluency test. Two evaluators, the researcher and a school-based English teacher, independently assessed each student's performance using a standardized rubric. This blind scoring approach minimized bias. After independent evaluations, scores were averaged to produce each student's final score. This averaging method helped reduce individual rater bias and ensured a more accurate and objective assessment of student performance.

2. Reading Motivation Questionnaire

The researcher adopted the Reading Motivation Questionnaire in English as a foreign language (RMQ-EFL), devised by Wang & Gan (2021), based on dimensions of reading motivation in Wigfield and Guthrie (1997; 2004) and Mori (2002). Wang & Gan's (2021) questionnaire contains 22 items and is organized under five dimensions (reading efficacy, reading enjoyment, recognition, involvement, and compliance). A 4-point Likert scale ranging from "1 = very different from me" to "4 = a lot like me" is adopted. The questionnaire comprises three intrinsically oriented (reading efficacy, reading enjoyment, and involvement) and two extrinsically oriented dimensions (recognition and compliance). Of these five dimensions, reading efficacy plays the largest role in characterizing the EFL reading motivation of the participants in this study. The current study adapted a bilingual version of the questionnaire (English and Arabic) to support students' understanding of the items and

guarantee the validity and reliability of their responses. The translation of the items was reviewed and evaluated by a group of experts in TEFL for validity and clarity. All responses are positively oriented. Completion time is approximately 10 minutes, and the scale can be administered individually or in groups. Scoring involves summing the points across all items. A higher score indicates greater reading motivation, while a lower score reflects lower motivation. (Appendix 1)

Internal Consistency. Besides the approved reliability of the English version of The Reading Motivation questionnaire, the translated version was administered to a pilot group of 20 sixth-grade students. To verify internal consistency, correlation coefficients were calculated for each item and its corresponding dimension. All item-dimension correlations were statistically significant, ranging from 0.89 to 0.90. These results indicate high internal consistency for the scale's dimensions in measuring reading motivation.

Reliability. Reliability was assessed using Cronbach's alpha, resulting in a high level of reliability as all coefficients ranged from 0.66 to 0.76

Video Self-Modeling Intervention

- A preliminary pilot application was conducted to refine procedures.
- Reviewed by academic experts in psychology and education, field supervisors, and practicing teachers to ensure clarity of objectives, tools, stages, procedures, and duration.

Description

Based on relevant literature and previous studies, an intervention where sixth-grade female poor readers repeatedly watch a video of themselves performing the reading tasks. It aims to improve reading fluency and motivation among students. The video is recorded with teacher assistance, then edited to include only correct performance, removing the teacher's presence and any reading errors. Each video lasts no more than 4 minutes and is shown individually to the student two to three times per week before the start of a new lesson.

Materials and Instruments

- Reading Fluency Test (pre- and post-intervention)
- Reading Motivation questionnaire (pre- and post-intervention)
- Varied reading texts (from the textbook)
- Digital video camera
- Tripod for stable recording
- Movie Maker software for video editing
- Laptop computer
- Headphones

Intervention Phases

Phase 1: Preparation. The researcher, supported by the school management, obtained consent from the school administration and parents for participation and video recording. Pre-

tests for reading fluency and motivation questionnaire were conducted to determine group levels.

Phase 2: Implementation. The researcher and the teacher offered traditional reading fluency instructions for both groups using standard teaching methods. Video self-modeling intervention was offered to the experimental group only as follows:

- The teacher conducts 20 sessions over two months (2–3 sessions per week) using strategies such as model reading, silent reading, echo reading, paired reading, and independent oral reading.
- Both groups are taught reading topics from the school curriculum, including texts used in the fluency test.
- For the experimental group, each session is recorded and edited using Movie Maker to include only correct reading performance.
- Videos are shown individually in a quiet room (Learning resources room) at the start of each session. Each video begins with the student's name and ends with applause and teacher praise to encourage and motivate.

Phase 3: Evaluation. The researcher conducted the post-intervention assessment of reading fluency and motivation to determine the effectiveness of the strategy.

1. There are statistically significant differences at the 0.05 significance level between the experimental and control groups in the post-administration of reading fluency in favor of the experimental group.
2. There are statistically significant differences at the 0.05 significance level between the pre- and post-administration of reading fluency in the experimental group.
3. There are statistically significant differences at the 0.05 significance level between the experimental and control groups in the post-administration of reading motivation in favor of the experimental group.
4. There are statistically significant differences at the 0.05 significance level between the pre- and post-administration of reading motivation in the experimental group.

Results of the study

First Hypothesis

The first hypothesis states that *there are statistically significant differences at the 0.05 significance level between the experimental and control groups in the post-administration of reading fluency in favor of the experimental group*. The Paired-Samples t-test was used to examine the performance of the experimental group in the pre- and post-tests of overall reading fluency and its dimensions, and to determine whether statistically significant differences were attributable to the video self-modeling intervention. The results in Table 1 show statistically significant differences at the 0.05 level between the pre- and post-test scores of the experimental group, favoring the post-test. This applies to the overall fluency score and each sub-skill (pronunciation, accuracy, and rate), indicating the effectiveness of the video self-modeling intervention. The results show statistically significant improvements across all

measured dimensions. As for pronunciation, the means of students' scores improved from 14.80 to 16.20 (t 7.50, p = 0.001), indicating a significant enhancement in pronunciation skills, suggesting that the intervention helped learners articulate words more clearly. Reading accuracy also improved from 156.90 to 316.80 (t 19.44, p = 0.000). This substantial increase in accuracy shows that learners made fewer errors and read more precisely after the intervention. Reading rates mean improved from 56.80 to 124.80 (t = 17.88, p = 0.001), reflecting a significant improvement in reading speed, indicating better fluency and automaticity.

The statistical significance ($p < 0.05$) across all dimensions strongly supports the hypothesis that video self-modeling positively influences reading fluency. The large t-values suggest that the differences are not only statistically significant but also practically meaningful. The intervention appears to be particularly effective in improving reading accuracy and rate, which are often challenging aspects of fluency. The consistent improvement across all sub-skills implies that the video self-modeling approach may foster self-awareness, motivation, and repeated exposure, which are key elements in skill acquisition. These results provide empirical support for incorporating video self-modeling into reading instruction, especially for learners needing fluency development.

Table 1: Paired-samples t-test results for pre- and post-test of reading fluency in the experimental group

Skill	Pre-Test		Post-Test		df	t	Sig.
	M	SD	M	SD			
Pronunciation	14.80	1.10	16.20	1.30	21	7.50	0.001
Reading Accuracy	156.90	71.44	316.80	76.04		19.44	0.000
Reading Rate	56.80	28.51	124.80	35.27		17.88	0.001
Overall Fluency	228.5	101.05	457.8	112.61		19.66	0.000

Second Hypothesis

The second hypothesis states that *there are statistically significant differences at the 0.05 significance level between the pre- and post-administration of reading fluency in the experimental group*. To test the second hypothesis, whether there were significant differences between the experimental and control groups in the post-test, an independent-samples t-test was used. The data in Table 2 indicate statistically significant differences in reading fluency between the control and experimental groups in the post-test, favoring the experimental group. This improvement is attributed to the video self-modeling intervention.
The experimental group outperformed the control group in all aspects of reading fluency, confirming the effectiveness of the video self-modeling technique. The large effect sizes (η^2 ranging from 0.62 to 0.78) suggest that the differences are not only statistically significant but also educationally meaningful. The intervention likely enhanced self-awareness and motivation, as students observed themselves performing fluent reading, which may have reinforced correct behaviors. The structured approach, watching edited videos, focusing on expression, punctuation, and vowel pronunciation, appears to have provided targeted feedback and modeling, which are known to be effective in skill development. These results support the integration of video-based interventions in reading programs, especially for learners who benefit from visual and self-referential learning strategies. Watching themselves perform

correct and expressive reading helped students focus on areas needing improvement. At the start of each session, students viewed a video of themselves reading fluently, which had been edited to highlight correct performance. During intervention sessions, students were asked to read aloud with expression, observe punctuation, and pronounce short and long vowels correctly.

Table 2: Independent-samples t-test results of experimental vs. control group in post-test scores in reading fluency

Skill	Group	Mean	SD	t	df	Sig.	η2
Pronunciation	Control	13.20	1.40	3.41	42	0.01	0.78
	Experimental	16.20	1.30				
Reading Accuracy	Control	187.90	76.53	2.56	42	0.03	0.62
	Experimental	316.80	76.04				
Reading Rate	Control	78.40	31.99	2.38	42	0.03	0.70
	Experimental	124.80	35.27				
Overall Fluency	Control	279.50	108.95	2.53	42	0.03	0.63
	Experimental	457.8	112.61				

Video self-modeling is a powerful, minimally invasive strategy that enhances student performance by allowing them to observe themselves succeeding (Montgomerie et al., 2014; Greenberg et al., 2002). Bandura (1986) emphasized that modeling is most effective when the model closely resembles the observer, making the student herself an ideal model.

The intervention's success stemmed from repeated exposure to correct models in pronunciation, accuracy, and reading rate, which collectively improved reading fluency. Since reading rate depends on accurate pronunciation and linguistic precision, each sub-skill's improvement contributed to overall gains.

Video self-modeling offered personalized practice and feedback, aligning with Bandura's social cognitive theory, which stresses the importance of self-observation in skill development. Skinner's behavioral theory also supports this approach, as it helps students connect behaviors with outcomes (Hitchcock et al., 2003).

Observational learning is enhanced by appropriate models and repeated practice (Bandura, 1986; Green et al., 2017). The ability to replay and review videos adds flexibility and personalization, especially beneficial for students with learning difficulties.

While traditional remedial instruction led to some improvement in the control group, the experimental group achieved significantly greater gains. Watching themselves perform well increased motivation, focus, and retention. This feedback loop accelerated fluency development and improved self-perception as readers (Greenberg et al., 2002).

The intervention also provided forward-looking feedback, encouraging students to improve future performance. Video self-modeling supports both skill acquisition and retention through positive self-review (Hitchcock et al., 2004).

Students expressed enjoyment and interest, which positively influenced outcomes. Modern technologies like video enhance engagement, particularly for learners with difficulties (Adam & Tatnall, 2017). The researcher observed a reciprocal relationship: increased motivation improved fluency, and fluency gains further boosted motivation and attitudes toward reading.

Third Hypothesis

The third hypothesis states that *there are statistically significant differences at the 0.05 significance level between the experimental and control groups in the post-administration of reading motivation in favor of the experimental group*. To assess the impact of the video self-modeling intervention on reading motivation, a Paired-Samples t-test was conducted comparing the pre- and post-test scores of the experimental group. The results in Table 3 show statistically significant improvements ($p < 0.05$) across all dimensions of reading motivation. Reading Efficacy's mean scores increased from 1.8 to 3.42 (t 4.77, $p = 0.002$), indicating enhanced confidence in reading abilities. As for reading enjoyment, mean scores increased from 1.7 to 2.91 ($t = 11.45$, $p = 0.000$), suggesting that students found reading more pleasurable after the intervention. Recognition's mean scores increased from 1.7 to 3.1 ($t = 11.02$, $p = 0.002$), reflecting increased perception of being acknowledged or rewarded for reading. Involvement's mean scores increased from 1.8 to 2.9 ($t = 16.45$, $p = 0.002$), showing greater engagement and immersion in reading activities. Compliance's mean scores increased from 1.04 to 2.84 ($t = 4.98$, $p = 0.000$), indicating improved willingness to participate in reading tasks. Last, the overall Motivation's mean scores increased from 8.04 to 15.17 ($t = 9.01$, $p = 0.002$), confirming a significant overall enhancement in reading motivation.

The results strongly support the hypothesis that video self-modeling positively influences students' motivation to read. The consistent and significant improvements across all motivational dimensions suggest that the intervention was holistic and impactful. Watching themselves perform fluent reading likely fostered a sense of achievement, self-efficacy, and enjoyment, which are key drivers of motivation. The intervention's design—highlighting correct performance and encouraging expressive reading- may have helped students internalize positive reading behaviors, leading to increased engagement. These findings align with motivational theories that emphasize self-perception and reinforcement as critical factors in learning.

Table 3: Paired-Samples t-test Results for pre- and post-test of Reading Motivation in the experimental group

Dimension	Pre-Test		Post-Test		df	t	Sig.
	M	SD	M	SD			
Reading efficacy	1.8	0.08	3.42	0.21	21	4.77	0.002
Reading enjoyment	1.7	0.12	2.91	0.2		11.45	0.000
Recognition	1.7	0.12	3.1	0.3		11.02	0.002
Involvement	1.8	0.2	2.9	0.21		16.45	0.002
Compliance	1.04	0.09	2.84	0.3		4.98	0.000
Overall Motivation	8.04	0.12	15.17	0.24		9.01	0.002

Fourth Hypothesis

The hypothesis states that *there are statistically significant differences at the 0.05 significance level between the pre- and post-administration of reading motivation in the experimental group*. To determine whether the video self-modeling intervention had a significant effect on reading motivation compared to traditional methods, an independent-samples t-test was conducted between the experimental and control groups on the post-test scores. The results

in Table 4 show statistically significant differences ($p < 0.05$) across all dimensions of reading motivation, favoring the experimental group. Reading efficacy increase ($t = 4.06$, $p = 0.004$, $\eta^2 = 0.87$) indicates a strong improvement in students' confidence in their reading abilities. Reading Enjoyment increased = 5.2, $p = 0.001$, $\eta^2 = 0.82$, suggesting that students in the experimental group found reading significantly more enjoyable. As for recognition ($t = 12.1$, $p = 0.001$, $\eta^2 = 0.82$), the increase indicates a strong perception of being acknowledged or rewarded for reading. Involvement's improvement ($t = 11.3$, $p = 0.003$, $\eta^2 = 0.81$) reflects deeper engagement in reading tasks. Compliance's improvement = 5.6, $p = 0.001$, $\eta^2 = 0.82$) shows greater willingness among students to participate in reading activities. Last, the overall reading motivation ($t = 4.99$, $p = 0.001$, $\eta^2 = 0.88$) confirms a significant and comprehensive improvement in motivation.

The results strongly support the fourth hypothesis, confirming that the video self-modeling intervention significantly enhanced students' reading motivation compared to the control group. The very large effect sizes ($\eta^2 > 0.80$) across all dimensions indicate that the intervention had a powerful and consistent impact. These findings suggest that seeing themselves succeed in reading tasks helped students develop a positive self-image, which in turn boosted their motivation. The intervention likely provided personalized reinforcement, making reading feel more rewarding and engaging. This supports the use of video-based self-modeling as a motivational tool in educational settings, especially for students who may struggle with confidence or engagement in reading.

Table 4: Results of the t-test for two independent samples of experimental vs. control group in the post-test of reading motivation

Dimensions	Group	M	SD	t	df	Sig.	η2
Reading efficacy	Control	1.86	0.23	4.06	22	0.004	0.87
	Experimental	3.42	0.21				
Reading enjoyment	Control	1.82	0.23	5.2		0.001	0.82
	Experimental	2.91	0.2				
Recognition	Control	1.78	0.12	12.1		0.001	0.82
	Experimental	3.1	0.3				
Involvement	Control	1.9	0.76	11.3		0.003	0.81
	Experimental	2.9	0.21				
Compliance	Control	1.82	0.23	5.6		0.001	0.82
	Experimental	2.84	0.3				
Overall reading fluency	Control	9.18	0.2	4.99		0.001	0.88
	Experimental	15.17	0.314				

Self-modeling significantly boosted reading motivation among students, as evidenced by their eagerness to engage with reading materials and their enthusiasm during intervention sessions. Unlike the control group, the experimental group showed a strong desire to read first on camera and worked diligently to minimize errors during filming. This highlights the power of technological tools in fostering intrinsic motivation and driving students toward educational goals.

Despite the availability of modern educational technologies, their underutilization often results in low student engagement. Students with reading difficulties frequently experience

frustration and negative comparisons with peers. Video self-modeling offers a transformative experience by allowing these students to see themselves successfully reading challenging texts, which builds confidence and self-belief (Anderson, 2016). Motivation plays a critical role in encouraging independent reading, thereby increasing practice opportunities (Schunk, 2003).

In traditional classrooms, students with reading challenges may receive insufficient support, even with teacher attention. Self-modeling shifts the focus to the learner, helping restore self-confidence and strengthen self-concept, leading to academic and psychological gains. The experimental group reported feelings of satisfaction and challenge when watching themselves read fluently, which reinforced persistence and heightened awareness of their progress.

Repetition in self-modeling interventions allows students to repeatedly witness their successful performance, enhancing confidence and skill mastery. Improved reading fluency, as demonstrated in the study, directly correlates with increased motivation (Morgan et al., 2008). Struggles with reading often diminish motivation, and the relationship between reading skill and motivation is mutually reinforcing (Morgan & Fuchs, 2007).

Therefore, motivation must be a central consideration when integrating technology into learning. Recent global research focuses on factors that drive student motivation in digital learning environments. Technology plays a vital motivational role in education (Bagon & Vodopivec, 2016), and its thoughtful application—especially for students with learning difficulties—can significantly enhance educational outcomes across various domains.

Conclusions

The success of VSM aligns with Bandura's social cognitive theory and Skinner's behavioral theory, emphasizing the role of self-observation and reinforcement in skill development. The Paired-Samples t-test results revealed statistically significant improvements in the experimental group's post-test scores across all dimensions of reading fluency, pronunciation, accuracy, and rate, demonstrating the effectiveness of video self-modeling.

The increase in pronunciation scores indicates that students articulated words more clearly after the intervention, likely due to repeated exposure to correct models. Accuracy scores nearly doubled, showing that students made fewer reading errors and read more precisely, a critical component of fluent reading. The reading rate improved significantly, reflecting increased automaticity and fluency. The independent-samples t-test confirmed that the experimental group outperformed the control group in all fluency aspects, with large effect sizes indicating that video self-modeling is not only statistically effective but also educationally impactful. The intervention enhanced students' motivation and engagement by allowing them to observe their own progress, reinforcing correct behaviors, and fostering a sense of achievement.

Challenges of the study

1. The study involved only 44 female students from a single grade and school, which may limit the generalizability of the findings to broader populations or different educational contexts.
2. The exclusion of male students due to program availability may have introduced gender bias and restricted the applicability of results across genders.

3. The effectiveness of Video Self-Modeling (VSM) was measured over a relatively short period, which may not reflect long-term impacts on reading fluency and motivation.
4. Motivation was assessed using a questionnaire, which relies on students' self-perception and may be influenced by social desirability or response bias.
5. Implementing VSM requires access to recording equipment, editing tools, and technical support, which may not be feasible in all educational settings.
6. Since participants were poor readers in EFL, their limited language proficiency might have affected their ability to fully engage with the intervention or the assessment tools.

Recommendations

1. Schools and educators should incorporate video self-modeling as a regular component of reading instruction, especially for students with fluency challenges.
2. Teachers should provide students with edited videos that highlight correct pronunciation, expression, and punctuation to reinforce desired reading behaviors.
3. Teachers should tailor video content to individual student needs, allowing for repeated viewing and self-paced learning, which supports diverse learning styles and abilities.
4. Institutions should offer professional development for educators on how to effectively implement and manage video self-modeling strategies in the classroom.
5. Teachers should use video self-modeling alongside traditional remedial methods to maximize learning outcomes, as the combination can address both cognitive and motivational aspects of reading.
6. Institutions should conduct longitudinal studies to assess the long-term impact of video self-modeling and explore its application across other language skills and subject areas.

Suggestions for Further Research

1. Future studies could include male students, different grade levels, and multiple schools to enhance generalizability.
2. A Study to investigate the long-term effects of VSM on reading fluency and motivation to determine its sustainability over time is required.
3. Research may aim to compare VSM with other reading interventions (e.g., peer modeling, teacher modeling, digital games) to evaluate relative effectiveness.
4. A study to explore the use of VSM in improving other EFL skills, such as writing, listening, or speaking, can provide solid evidence on its effectiveness.
5. Examining how different technological tools (e.g., mobile apps, AI-based feedback systems) can enhance or complement VSM.
6. A study can include interviews or focus groups to gain a deeper understanding of students' perceptions and emotional responses to VSM.

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Appendix 1

Dimensions	Item	العبارة بالعربية	v. different from me	different from me	like me	a lot like me
Reading Efficacy	1. I am good at reading in English	أنا جيد في القراءة باللغة الإنجليزية				
	5. It is easy for me to get the meaning of the sentences	من السهل عليّ فهم معنى الجمل				
	3. English reading is my weak part of this subject	القراءة باللغة الإنجليزية هي الجزء الضعيف لدي في هذا الموضوع				
	6. It is easy for me to analyze the English text structure	من السهل عليّ تحليل بنية النص الإنجليزي				
	7. I usually can get the main theme of the English text when I read	عادةً ما أستطيع فهم الفكرة الرئيسية للنص الإنجليزي عند قراءته				
	4. I usually know most of the word meanings when I read English text	عادةً ما أعرف معاني معظم الكلمات عند قراءة النص الإنجليزي				
	24. My friends sometimes tell me I am a good English reader	أصدقائي يخبرونني أحيانًا أنني قارئ جيد باللغة الإنجليزية				
Reading Enjoyment	12. I enjoy reading in English to learn what is going on in the United States and in the world	أستمتع بالقراءة باللغة الإنجليزية لأعرف ما يحدث في الولايات المتحدة والعالم				
	11. I like reading in English to learn something new about people and things that interest me	أحب القراءة باللغة الإنجليزية لأتعلم شيئًا جديدًا عن الناس والأشياء التي تهمني				
	10. If a book is interesting I don't care how hard it is to read	إذا كان الكتاب ممتعًا، لا يهمني مدى صعوبة قراءته				
	13. I like to read in English because I always feel happy when I read things that are of interest to me	أحب القراءة باللغة الإنجليزية لأنها تجعلني أشعر بالسعادة عندما أقرأ ما يهمني				
	8. When the topic is interesting, I am willing to read difficult English texts	عندما يكون الموضوع ممتعًا، أكون مستعدًا لقراءة نصوص إنجليزية صعبة				
	9. I enjoy the challenge of difficult English passages	أستمتع بتحدي قراءة المقاطع الإنجليزية الصعبة				
	14. If the teacher discusses something interesting I might read more about it	إذا ناقش المعلم موضوعًا ممتعًا، قد أقرأ عنه أكثر				
Recognition	23. I like my teacher to say that I read well in English	أحب أن يقول المعلم إنني أقرأ جيدًا باللغة الإنجليزية				
	25. I like to get complements for my reading	أحب أن أتلقى الإطراء على قراءتي				
	26. I am happy when someone recognizes my reading in English	أشعر بالسعادة عندما يعترف أحدهم بقراءتي باللغة الإنجليزية				

	27. My parents often tell me what a good job I am doing in English reading	يخبرني والداي كثيرًا أنني أقوم بعمل جيد في القراءة باللغة الإنجليزية	
Involvement	17. It is fun to read in English	القراءة باللغة الإنجليزية ممتعة	
	16. I make pictures in my mind when I read in English	أرسم صورًا في ذهني عندما أقرأ باللغة الإنجليزية	
	18. I tend to get deeply engaged when I read in English	أنغمس بعمق عندما أقرأ باللغة الإنجليزية	
	2. I like English reading classes	أحب حصص القراءة باللغة الإنجليزية	
Compliance	20. I always do my reading work exactly as the teacher wants it	دائمًا ما أنجز واجبات القراءة كما يريدها المعلم	
	21. Finishing every reading assignment is very important to me	إنهاء كل مهمة قراءة أمر مهم جدًا بالنسبة لي	
	22. I always try to finish my reading on time	أحاول دائمًا إنهاء قراءتي في الوقت المحدد	