

## ***Factors Influencing Teachers' Attitudes towards Smart Boards' Usage in Enhancing Intermediate EFL Students' Writing Skills***

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### **Abstract:**

The Kingdom of Saudi Arabia is exerting efforts toward digital transformation. It put emphasis on integrated projects between technology and education. The 2016-2030 Saudi Government Vision with a target of improving education through technology, and the English Language Development Project (ELDP) 'Tatweer' which was launched in 2014 in integration between technology and English language teaching are examples of these initiatives. This research investigates the impact of smart boards on teachers' attitudes towards teaching writing skills in English as a Foreign Language (EFL) to intermediate school students in Saudi Arabia. While extensive research exists on how smart boards impact student learning in general, there is a gap in knowledge specifically regarding teachers' perspectives on their effectiveness in EFL writing instruction. This study aims to explore factors influencing teachers' attitudes, such as

interaction, self-efficacy, course design, technical support, and convenience/accessibility. The findings can potentially contribute to developing evidence-based strategies for integrating smart boards effectively into EFL classrooms and improve student learning outcomes. Moreover, the current study investigated the perceptions of intermediate female teachers (n=55) in Haf Al-Batin, Saudi Arabia, regarding the use of smart boards to improve students' writing skills. The research employed a descriptive quantitative methodology, utilizing a questionnaire adapted from a Jordanian study by Saed et al. (2024). Convenience sampling was used to select participants from the population of 109 teachers. All participating teachers agreed on the value of smart boards for enhancing writing skills. Among the various aspects of smart boards, **convenience and accessibility** were rated as the most important (mean = 2.98), while **technical support** received the lowest rating (mean = 2.75). These results suggest that intermediate teachers in Haf Al-Batin view smart boards as a beneficial tool for writing instruction. While all participants acknowledged their potential, aspects like ease of use and readily available support seem to be of greater importance than technical functionalities.

عوامل تؤثر في توجهات المعلمات نحو استخدام السبورة الذكية لتعزيز مهارات  
الكتابة لدى طالبات اللغة الانجليزية كلغة أجنبية بالمرحلة المتوسطة

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تسعى المملكة العربية السعودية جاهدة نحو التحول الرقمي، حيث تولي اهتماماً خاصاً بالمشاريع المتكاملة بين التكنولوجيا والتعليم. رؤية المملكة العربية السعودية ٢٠١٦ - ٢٠٣٠ والتي تهدف إلى تحسين التعليم من خلال التكنولوجيا، ومشروع تطوير اللغة الإنجليزية "تطوير" الذي تم إطلاقه في عام ٢٠١٤ في إطار تكامل التكنولوجيا مع تعليم اللغة الإنجليزية، هي أمثلة عن هذه المبادرات. استناداً إلى الدراسات السابقة، تم اقتراح ضرورة استكشاف العوامل التي تؤثر على مواقف المعلمات نحو استخدام السبورة الذكية لتعزيز مهارات كتابة طالبات المرحلة المتوسطة في اللغة الإنجليزية. تم إجراء هذا البحث بشكل محدد في سياق تعلم اللغة الإنجليزية كلغة أجنبية لطالبات المرحلة المتوسطة في حفر الباطن، المملكة العربية السعودية، خلال الفصل الدراسي الثالث لعام ١٤٤٥. أجابت الدراسة على سؤال واحد حول العوامل (التفاعل، والكفاءة الذاتية، وتصميم الدورة، والدعم التقني، والراحة والتوفر) التي تؤثر في مواقف المعلمات بشأن استخدام السبورة الذكية لتعزيز مهارات كتابة الطالبات في اللغة الإنجليزية. سيساعد هذا بالتأكيد في تحضير الطلاب لتحقيق إنجازات أكاديمية أفضل وأكثر نجاحاً وسيسد الفجوة في المعرفة حول هذه العوامل. كانت هذه الدراسة وصفية وتطبق منهجية كمية.

اعتمدت الباحثة استبياناً تم تبنيته وتطويره من دراسة أجراها سعيد وآخرون (٢٠٢٤) في الأردن. كانت العينة تتألف من ١٠٩ معلمه في مدارس حضر الباطن المتوسطة للبنات، وتم اختيار عينة بحجم ٥٥ معلمة بناءً على العينة البسيطة. تم تحليل البيانات باستخدام التحليل الوصفي وتحليل الانحدار الخطي البسيط. كشفت بعض النتائج البارزة أن جميع المعلمات قد وافقن على استخدام السبورة الذكية لتعزيز مهارات كتابة الطالبات. كانت الراحة والتوفر للمعلمات ذات أهمية عالية، بمتوسط قدره ٢.٩٨، في حين كان الدعم التقني هو الأقل أهمية للمعلمات بمتوسط قدره ٢.٧٥. التدريب على التكنولوجيا بشكل عام واستخدام السبورة الذكية بشكل خاص، بالإضافة إلى نقص البنى التحتية التكنولوجية المطلوبة، كانت من أكبر التحديات التي واجهتها المعلمات وأثرت سلباً على مواقفهن وأدائهن في تدريس اللغة الإنجليزية. قدمت الباحثة بعض التوصيات مثل ملء هذه الثغرات على وجه السرعة من خلال برامج تدريب المعلمات في تقنية المعلومات بشكل عام واستخدام السبورة الذكية بشكل خاص، والتحقق وتطوير البنية التحتية التكنولوجية في الإعدادات التعليمية. يعد تكرار هذه الدراسة في محافظات أخرى، وفي مدارس أخرى للبنين والبنات في المملكة العربية السعودية، اقتراحاً للدراسات المستقبلية بين أخرى. سيسهم زيادة حجم العينة في زيادة قابلية تعميم النتائج للمساعدة في إبلاغ وزارة التربية والتعليم السعودية عن الموقف الحقيقي لاستخدام ادوات التكنولوجيا داخل المدارس حتى يتم التكامل بين التعليم والتكنولوجيا.

## Introduction

In the age of digital transformation, the Kingdom of Saudi Arabia is prioritizing educational projects that integrate technology with English as a Foreign Language (EFL) instruction across all educational levels (elementary, middle, high school). Smart boards are gaining significant traction in classrooms nationwide. These interactive displays offer a

departure from traditional teaching methods, allowing educators to present engaging and interactive lessons that **gain students' attention**. This approach fosters **greater student engagement** with the learning materials and promotes **interaction** between students and both the materials and their teachers. As a result, research suggests a potential for **improved academic achievement** (Saed et al., 2024; Hussein et al., 2022).

While there's extensive research on the impact of smart boards on student achievement (Saed et al., 2024; Hussein et al., 2022), a knowledge gap exists regarding their influence on teachers' attitudes and classroom practices, particularly in English as a Foreign Language (EFL) instruction (Alshaikhi, 2019; Almulla, 2017; Albugami & Ahmed, 2015; Al-Faki & Khamis, 2014). Additionally, recent studies highlight obstacles such as inadequate infrastructure and insufficient teacher training hindering effective implementation (Aljameel, 2022; Alshumaimeri, 2019).

**This summary emphasizes the key points:**

- Extensive research exists on how smart boards impact student learning.
- Limited research explores the impact on teachers' attitudes and practices in EFL instruction.
- Recent studies identify infrastructure and teacher training as key challenges.

Thus, and from the above results of previous studies, insufficient attention has been paid to factors influencing teachers' attitudes on smart boards' usage to enhance EFL students' writing skills in the same EFL context in KSA. To bridge this gap, this paper aims to explore and describe some factors that affect intermediate teachers' attitudes toward smart boards' usage in enhancing EFL students' English language writing skills.

### Research Problem:

Despite the implementation of technology in classrooms in Saudi schools (Al bugami & Ahmed, 2015), teachers reportedly rarely use these tools (Al bugami & Ahmed, 2015; Almulla, 2017).expand more This lack of use is further supported by Clarkson (2011) who found no clear evidence of the benefits of smart boards in schools, and attributed this to a lack of dependable research (Clarkson, 2011).exclamation In conclusion, these studies suggest that teachers may be inadequately trained or equipped to effectively utilize technological tools in the classroom. While studies have explored smart board use in various Saudi Arabian school levels (Hussein et al., 2022; Alshaikhi, 2019; Almulla, 2017), there's a lack of research specifically focused on **teachers' perspectives** regarding their effectiveness in teaching **writing skills** for **English as a Foreign Language (EFL)** in **intermediate schools** (middle school). This knowledge gap hinders the development of evidence-based strategies to integrate smart boards effectively into EFL writing instruction, potentially impacting students' language proficiency (Al-Faki & Khamis, 2014; Katemba, 2015).

**In response to this gap, the current research aims to explore factors influencing teachers' attitudes towards using smart boards for teaching writing skills in this specific context.**

This study hypothesizes that five factors of interaction, course design (content), technical support, self-efficiency, and convenience and accessibility have influence on teachers' attitudes towards the usage of smart boards to enhance EFL students' writing skills as follows:

H1: Interaction has a significant effect on teachers' attitudes toward smart board usage in teaching writing skills.

H2: Self-efficiency has a significant effect on teachers' attitudes toward smart board usage in teaching writing skills.

H3: Course- design (content) has a significant effect on teachers' attitudes toward smart board usage in teaching writing skills.

H4: Technical Support has a significant effect on teachers' attitudes toward smart board usage in teaching writing skills.

H5: Convenience and accessibility have a significant effect on teachers' attitudes toward smart board usage in teaching writing skills.

Accordingly, the main question of this research is:

What are the factors that influence teachers' attitudes towards smart boards' usage in enhancing intermediate EFL students' writing skills?

### **Literature review**

#### **Theoretical Framework:**

Constructivism, a prominent educational theory, emphasizes the role of cognitive, social, and behavioral factors in shaping individual learning. It suggests that knowledge is actively constructed by learners based on their prior experiences and interactions with others. This approach aligns perfectly with the potential of smart boards. These interactive displays can enhance student engagement and motivation by making learning more interactive and enjoyable, facilitate social interaction by encouraging collaboration and participation among students. Moreover, it can support knowledge construction by providing students with tools to visualize and manipulate information, building upon their existing knowledge.

In essence, smart boards, when used effectively, can create a learning environment that fosters the principles of

constructivism, potentially leading to improved academic outcomes.

Vygotsky (1978) argued that children learn and develop through social interactions with their environment, including adults and peers. This aligns with the potential benefits of smart boards, which can promote interaction between teachers and students, facilitate student collaboration and interaction with learning materials. Moreover, it can encourage peer-to-peer interaction. The current study aims to explore how such interactions influence teachers' attitudes towards using smart boards for teaching EFL writing skills. This research will investigate interactions between teachers and students, students and materials, and students themselves.

### **Conceptual Framework**

Smart Boards in Kingdom of Saudi Arabia For many years, the Saudi Arabian Government has been working hard to integrate technological tools such as smart boards into schools and universities. In AlIgtisadiya (2009), stated that the General Administration at the Ministry of Education in Riyadh had started implementing and launching a project of supplying 100 schools in different public primary, intermediate, and secondary schools in Riyadh with smart boards. This was to provide these public schools for the first time with modern technological tools for teaching. This initiative was started with schools which were equipped with resource centers coordinators who were supposed to take care about these equipment and train teachers in the future in how to use them in teaching. Authorities took into consideration geographical locations, educational standards of the selected schools, and the number of classrooms in these schools to ensure quality and equality in distributing the smart boards in the whole country in the future. The smart boards were examined, tested and evaluated before disseminating them



in all public schools. Authorities ensured that the smart boards that they supplied schools with were of high quality and excellent features. They added that smart boards help display materials in exciting and attractive ways, which enhance students' academic achievement (Allgtisadiya,2009).

Prior to 1999, Saudi Arabia faced significant challenges integrating technology into classrooms due to several factors:

- **Limited Infrastructure:** A lack of suitable infrastructure for technology-based learning environments hindered implementation (Al-Maliki, 2013).
- **No Internet Access:** The absence of internet connectivity further restricted technology use in education (Mahrooqi & Troudi, 2014).
- **Research Gap:** Limited research on implementing Information Communication Technology (ICT) in education made it difficult to identify and address challenges (Al-Maliki, 2013).

Consequently, technology use in classrooms largely depended on individual teachers' preparedness and the availability of basic infrastructure. Teacher training in technology was also identified as a key area for improvement in past research (Aljameel, 2022).

Saudi Arabia has witnessed a growing emphasis on integrating technology into education (Alshumaimeri, 2008; 2019). This commitment is evident through several initiatives:

- **1990s:** Introduction of computer literacy programs in public secondary schools, including establishing computer labs and training teachers (Alshumaimeri, 2008).
- **2004-2014:** A ten-year educational plan ("Tatweer") focused on technology integration. Schools were

equipped with projectors, laptops, and smart boards (Alshumaimeri, 2019).

- **English Language Development Project (ELDP):** This initiative within "Tatweer" specifically aimed to enhance English language learning through technology. Schools received modern learning materials, audiovisual resources, and e-learning tools (Alshumaimeri, 2019).

These efforts reflect Saudi Arabia's evolving approach to education, embracing technology to improve the learning experience, particularly in English language instruction.

It was clear from the previous literature that smart boards can be valuable tools for teaching English as a Foreign Language (EFL) in Saudi Arabia. Their versatility allows them to be used across subjects, while their presentation options can deepen students' understanding of language learning. When used effectively in classrooms with trained teachers, smart boards have the potential to create an ideal learning environment for both students and educators.

### **Challenges in using Smart Boards in KSA**

As a matter of fact, smart boards are still in use in Saudi Arabia schools. It was stated that smart boards were being used in KSA schools at primary, intermediate, and secondary levels for ten years ago. Moreover, the Administrative Department of the Ministry of Education in Hafar Al-Batin stated that the first supply of smart boards to the KSA was in 1428 -1429 (2007-2008), and the first teacher training in how to use them was in 1429 (2008), in a secondary school in Riyadh. Then this was immediately followed by the supply of more smart boards to the whole schools in KSA and were implemented in the majority of these schools in 1430 (2009) (AlIgtisadiya,2009).

It is clear from the above literature, that the influence of the factors on intermediate teachers' attitudes toward smart boards' usage in enhancing EFL students' writing skills needs exploration to come out with results which will contribute to support the Ministry of Education at KSA to approach educational goals and prepare students to approach successful academic achievements for a better future.

### **Factors influencing teachers' attitudes:**

#### **Interaction**

Studies suggest that teachers' attitudes towards using smart boards are positively influenced by the potential for these tools to promote interaction between students and teachers, as well as between students and the learning materials themselves. (Saed et al., 2024).

#### **Course Design (Content)**

- Smart boards allow teachers to dynamically combine text, images, videos, and internet access within a single lesson. This interactive and engaging presentation style can motivate students and boost their interest in the learning material. (Saed et al., 2024).

#### **Technical Support**

Previous studies and the current context in Saudi Arabia suggest that intermediate EFL teachers might lack the technical skills to troubleshoot problems with smart boards. This lack of technical support could hinder the educational process. Saed et al. (2024) considers this factor of technical support as one of the important factors that influence teachers' attitudes when they teach students using smart boards.

### **Self-efficiency**

The usage of smart boards to enhance students' cognitive skills requires teachers' cognitive self-efficiency to promote educational process (Saed et al., 2024). Teachers' confidence in their ability to effectively use smart boards to teach English as a Foreign Language (EFL). The study suggests that self-efficacy is one of the factors influencing teachers' attitudes towards using smart boards in this context.

### **Convenience and Accessibility**

Smart boards can enhance student interaction, motivation, engagement, participation, and cognitive and social skills. They also provide convenient access to learning resources. There are many benefits for Teachers as Smart boards offer easy access to materials and can save time for teachers and students. Moreover, Convenience and Accessibility are crucial factors for positive teacher attitudes towards using smart boards. Overall, the research suggests that smart boards, when readily available and user-friendly, can be valuable tools for improving EFL classrooms in Saudi Arabia. (Saed et al., 2024).

Taking into consideration the above-mentioned framework of factors affecting teachers' attitudes, this research will adopt Saed's et al (2024) conceptual model that they used in a similar study in Jordan, but at university level and with slight differences in the direction and objectives of their study from the current research. A complete review of Saed et al (2024) study was in the section of the review of related studies.

The tool of data collection of this current study (a questionnaire) is adopted and developed by the researcher by adding very specific statements in the area of writing skills. The questionnaire is then reviewed by the supervisor, three experts, and 15 respondents participated in piloting its validity and

reliability. This study explores the influence of the above factors on teachers' attitudes towards using smart boards in enhancing intermediate students writing skills. Each factor will be investigated separately, by using a scale consisting of three options.

#### **Purpose of the study:**

This study aims to uncover the influence of factors on teachers' attitudes when they teach English writing skills to students using smart boards. So, in other words, this study aims to study a type of relationships between the mentioned five factors and teachers' attitudes towards smart boards in an EFL context in KSA.

#### **Significance of the study:**

This study's findings aim to contribute to several areas in ELT (English Language Teaching) and research:

- **Bridging the Knowledge Gap:** The research aims to fill the gap in understanding how factors like self-efficacy, interaction, and technical support influence teachers' attitudes towards using smart boards in EFL classrooms in Saudi Arabia, especially during this digital transformation era.
- **Informing Policy and Practice:** These results could be used as evidence by the Saudi Ministry of Education, educational officials, and curriculum developers to:
  - Support the development of EFL programs that integrate technology effectively.
  - Inform educational experts and policymakers about the effectiveness of smart boards in language learning.
  - Improve teacher training programs on how to utilize smart boards effectively.

- **Improved Learning Environment:** By equipping teachers with the skills to use smart boards effectively, the research may lead to:
  - Increased teacher confidence in using smart boards.
  - Enhanced student motivation and engagement in EFL classes through more interactive and enjoyable lessons.

### **Terms of the study:**

The terms used in this study are defined as follows:

#### **1. Smart board:**

Smart board can be defined in terms of its features as the following:

- **Interactive Whiteboards:** They are digital whiteboards that users can interact with by touch.
- **Display and Connectivity:** Smart boards can display applications and programs from a connected computer and access the internet.
- **Content Management:** Users can save, print, or email the information displayed on the board. (This can be helpful for students who are absent). (Hussein et al., 2022).

**The operational definition:** Smart board in this study is a technological tool that facilitates teaching inside the classroom. Lessons become easier and more enjoyable. It displays content in an attractive way that encourage students to interact with.

#### **2. Writing Skills:**

Writing is a way to produce language and express idea, feeling and opinion. According to (Harmer, 2004, p.31).

**The operational definition:** Writing is a productive skill. Writing skills are specified in this study as teaching students: spelling, punctuation, sentence, paragraph, and composition. Trying to build the writing habit on students, by building confidence, encourage instant and collaborative writing.

### 3. Teachers' Attitudes:

They are perceived ease of use and perceived usefulness of computers, together with other factors that may have an impact on technology usage (Perienen, 2020).

**The operational definition:** Behaviors, opinions, and believes of teachers to technology and willingness to use smart boards to enhance students' writing skills.

### Delimitations of the study:

The current study is delimited to the following:

#### Objectivity delimits:

The study specifically investigates the influence of **five factors** on teachers' attitudes towards using smart boards to teach writing skills.

**Spatial Delimits:** The study is delimited to a sample of teachers in Hafr Al-Batin intermediate girls' schools, KSA.

Time Delimits: The third semester of the academic year 1445.

### Methodology

#### Approach

This study adopts a quantitative methodology which suits its aims. It is a descriptive study which tried to uncover the influence of some factors on teachers' attitudes toward smart boards' usage on teaching English writing skills.

### **Data collection method:**

This study employs a quantitative approach to investigate the factors influencing teachers' attitudes towards using smart boards for writing instruction. Data collection relies on a closed-ended questionnaire, a common tool in quantitative research. such as (Saed et al., 2024; Bani-Fawaz, 2022; Hussein et al., 2022; Zincume & Marimuthu, 2022; Mohammed ,2021; Alturki et al., 2020; Chau et al., 2020 ; Tsayang, Batane & Majuta, 2020; Malkawi, 2017; Bingimlas, 2015 ). The questionnaire was adopted from research conducted in Jordan by Saed, et al. (2024) which investigated five factors influencing staff teachers' attitudes at university level when using smart boards to enhance the educational process.

The questionnaire is divided into six sections.

□ **Independent Variables (Dimensions 1-5):** Each section corresponds to one of the five factors influencing teachers' attitudes:

- Interaction
- Course Design (Content)
- Technical Support
- Self-Efficacy
- Convenience and Accessibility

□ **Dependent Variable (Dimension 6):** This section measures teachers' attitudes towards using smart boards.

□ **Question Format:** Closed-ended questions with three answer choices (agree, neutral, disagree) are used for all sections.

To make sure the questionnaire was effective, the researcher took several steps. First, the supervisor and three



specialists in the area examined it. Then, they tested it with a small group of 15 female teachers from the same schools the study would target. Based on their feedback, the questionnaire was improved. Finally, a statistician checked it to make sure it precisely measured what it was designed to measure. The researcher then distributed the final questionnaire to the participants electronically using Google Forms.

### **Population and Sampling**

This study focused on female teachers who instruct English as a foreign language (EFL) at an intermediate level in Hafr Al-Batin, Saudi Arabia. There were a total of 109 teachers who could have participated, but the researcher chose to survey a smaller group of 55 for reasons of convenience. The teachers were selected from the Hafr Al-Batin educational administration, where the researcher is located. While this method was chosen for practicality, it acknowledges that it might not be the most representative sample of the entire population.

### **Procedure**

**The procedure of the research were assign according to the following steps:**

#### **□ Questionnaire Development:**

- The researcher reviewed relevant literature on factors influencing teachers' attitudes towards smart boards.
- A questionnaire with six sections was developed, measuring five independent variables (interaction, course design, technical support, self-efficacy, convenience/accessibility) and the dependent variable (teachers' attitudes).
- The questionnaire used a closed-ended format with three answer choices (agree, neutral, disagree) for all sections.

□ **Pilot Testing and Refinement:**

- The questionnaire was reviewed by the supervisor and three subject-matter experts.
- A pilot study was conducted with 15 intermediate female teachers from the target population.
- Based on feedback, the questionnaire was revised to improve clarity and effectiveness.

□ **Data Collection:**

- A statistician evaluated the revised questionnaire for validity and reliability.
- The final questionnaire was administered to 55 females, intermediate EFL teachers in Hafr Al-Batin, Saudi Arabia, using Google Forms.
- The questionnaires were distributed through WhatsApp teachers' groups with the assistance of the Ministry of Education's Department of Training.

□ **Challenges and Response Rate:**

- The distribution occurred a week before school vacation, potentially impacting participation.
- Some teachers might have been unfamiliar with Google Forms.
- Only 36 teachers (65% response rate) completed the questionnaire.

**Validity and Reliability of the Questionnaire**

Validity in this study means the accuracy with which the questionnaire accomplished its target, in other words it makes the accurate measurement needs. It is the core of any form of assessment which is truthful and exact. while reliability in this study means that the outcomes will be reliable with

similar measurement when the study is replicated in similar conditions. Thus, reliability reflects consistency and replicability over time and it is a very important factor in assessment that contributes to validity. The traditional meaning of reliability has been transformed as unified with validity and as one of its types. Hence, reliability is contributed to construct validity. This means that construct validity is not essential on instrument interpretation only, but on its use as well and how reliable it is.

#### **Statistical methods used in data analysis:**

After designing the questionnaire, testing, modifying and circulating it to the target pilot sample, to be analyzed through several statistical analysis programs to reach indications with values and indicators that support the subject, using the program (27.IBM SPSS V). This is done using the following statistical tools:

-Frequencies and percentages of demographic variables (personal characteristics).

- The arithmetic averages (means) of the paragraphs of the axes.
- Simple Linear Regression Analysis was used as one of the statistical methods to study the relationship between two variables. This method is used to determine the nature of the relationship between a dependent variable (the variable whose values are to be predicted) and a single interpretive variable (the independent variable). Simple analysis of linear regression is one of the simplest and most widely used methods of statistics in quantitative statistical research. The following Cohen's d and Pearson's r Values Scale is used in the Simple Linear Regression Analysis to measure the values of the

relationship between each independent variable and the dependent variable (Interval Scale).

**Table (1.1)**

**The scale used, is the triple Likert scale and the extent of response.**

low	Medium	high
1-1.66	1.67-2.33	2.34-3

The above table (1.1) shows the Triple Likert Scale, which is used in the descriptive analysis of the questionnaire, and showed the response range of this interval scale.

**Table (1.2): Guidelines for Referring to Cohen's d and Pearson's r Values as "Strong," "Medium," or "Weak"**

Pearson's r	Cohen's d	Relationship strength
$\pm 0.50$	$\pm 0.80$	Strong/large/Agree
$\pm 0.30$	$\pm 0.50$	Medium/Neutral
$\pm 0.10$	$\pm 0.20$	Weak/small/Disagree

The above table (1.2) shows the scale which is similar to, the Triple Likert Scale and the extent of participants' responses of Agree, Neutral, and Disagree which were used in the questionnaire that go with High, Medium, and Low in the above table respectively. This process of assigning values transforms the participants' qualitative responses (their opinions) into quantitative data (numbers) that can be

statistically analyzed to understand trends and patterns in teachers' attitudes towards using smart boards.

### **Validity of the Questionnaire:**

#### **Face Validity:**

The researcher employed face validity to ensure the questionnaire accurately reflected the study's goals. Three subject-matter experts, along with the supervisor, reviewed the questionnaire. They evaluated the research question, the clarity of the statements, and the overall alignment with the research objectives. Additionally, the experts assessed the questionnaire's construction and wording, ensuring consistency in administration and eliminating any missing or unclear information.

#### **Content Validity:**

The experts verified that the questionnaire comprehensively covered all the key concepts (constructs) and content relevant to this research. They ensured thorough integration of insights from previous studies in this field. Based on their review, they made necessary adjustments to the questionnaire to guarantee it effectively addressed the research objectives.

#### **Construct Validity:**

The developed questionnaire measures the relationship between the five dimensions of the five factors and the dimension of teachers' attitudes. Simple Linear Regression Analysis is used to measure these variables.

**Internal validity:**

**Table (1.3): Internal Consistency of the Questionnaire -  
Pearson correlation**

Significa ncevalue	corre lati on	Questio nnumb er	Section	Significa ncevalue	corre lati on	Questio nnumb er	Section
0.01	.643**	D1	TechnicalSu pport	0.000	.892**	A1	Inter acti on
0.001	.756**	D2		0.000	.892**	A2	
0.01	.643**	D3		0.001	.892**	A3	
0.001	.745**	D4		0.001	.756**	A4	
0.001	.745**	D5		0.006	.673**	A5	
0.000	.980**	E1	Conveniencean daccessibility	0.000	.816**	B1	Self- efficie ncy
0.000	.980**	E2		0.001	.770**	B2	

Significanc evalue	correla tion	Question numb er	Section	Significanc evalue	correla tion	Question numb er	Section
0.000	.813**	E3		0.001	.770**	B3	
0.000	.980**	E4		0.001	.745**	B4	
0.000	.980**	E5		0.000	.799**	B5	
0.000	.935**	F1	Teachers' At titudes	0.000	.911**	C1	Cont ent
0.000	.942**	F2		0.000	.888**	C2	

0.000	.935**	F3		0.000	.814**	C3	
0.000	.942**	F4		0.000	.911**	C4	
0.002	.727**	F5		0.000	.911**	C5	

The internal consistency of the questionnaire is investigated by calculating Pearson's coefficient using SPSS, and the above table (1.3) shows the correlation coefficients between each paragraph and the total score.

From the results of the above table (1.3), it is clear that all the correlation coefficients of Pearson between the questions and the total score of the axis are statistically and significantly significant at 0.05.

The minimum correlation coefficients is .643\*\* and the upper limit for the correlation coefficients is .980\*\*. Therefore, and from the results of the internal stability and consistency in the above table, it is clear that the stability of the study tool (questionnaire) and the sincerity of its internal consistency, to apply it to the entire sample, is found to be to a high degree.

### Research Reliability:

By checking construct validity, internal validity, consistency, and stability of the questionnaire, reliability was also checked. Therefore, the researcher made sure that the measurements are stable and consistent and that there were no errors or bias present, either from the respondents or from the researcher herself. The following table is about the study resolution stability:

### Pilot Study (Resolution Stability):

**Table (1.4): Cronbach alpha coefficient for measuring the stability of the questionnaire.**

Axis stability	Number of paragraphs	Section
.822	5	Interaction
.822	5	Self-efficiency
.761	5	Content
.734	5	Technical Support
.960	5	Convenience and accessibility
.939	5	Teachers Attitudes
.960	30	Total paragraphs

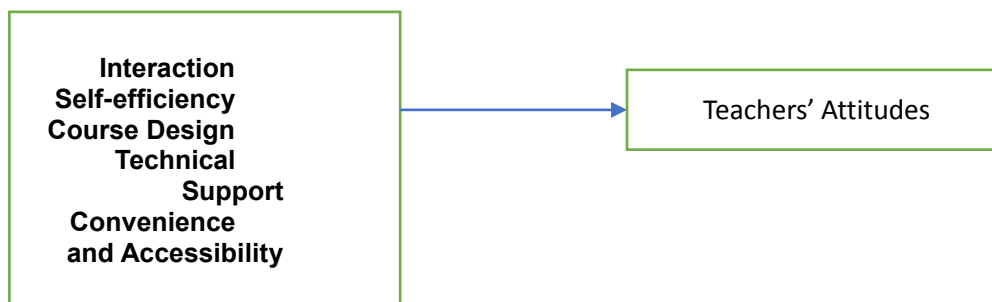
To measure the stability of the study tool, the researcher used (Cronbach's Alpha ( $\alpha$ ) equation on an exploratory sample of (15) respondents. It is clear from Table (1.4) that the coefficient of stability studied for the axes is high, while the minimum is .734 and the upper limit .960 for the total paragraphs of the questionnaire (30), and this indicated that the questionnaire have a high degree of stability that can be relied upon in the application field of the study according to Naeli scale, that adopted 0.70 as a minimum labor. (Nunnally & Bernstein, 1994, pp, 264-265).

### **Analysis of the Questionnaire**

Analysis of the data of the questionnaire was done using Descriptive Analysis first, followed by Simple Linear Regression Analysis. The analysis was based on the following conceptual model:



### Measurement and Scaling:



**Fig. (1): Research Model. Adapted from Saed, et al (2024)**

As shown in the above Figure (1), the independent variable, is divided into five main dimensions (Interaction, Self-efficiency, Course Design (Content), Technical Support, and Convenience and Accessibility ). The second factor is the dependent variable that represents teachers' attitudes toward the use of the smart board to enhance students' writing skills in an EFL context.

### Results and discussion:

#### Demographic Information Analysis:

**Table (1.5) Demographics Information Analysis**

Percentage	N	Categories	Variables
80.5%	29	BA	Degree obtained
13.9%	5	MA	
5.6%	2	Ph.D.	
100.0	36	Total	
8.3%	3	1 year	Years of Experience:
5.6%	2	2 Years	
2.8%	1	3 Years	
83.3%	30	More than 5 years	
100.0	36	Total	
58.3%	21	1 Year	

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5.6%	2	2 -3 Years	How many years have you been teaching with smart boards?
13.9%	5	3-5 years	
22.2%	8	More than 5 years	
100.0	36	Total	
72.2%	26	No	Have you received any specialized training before using smart boards in teaching?
27.8%	10	Yes	
100.0	36	Total	
8.3%	3	No	Are you satisfied with the use of smart boards in teaching?
91.7%	33	Yes	
100.0	36	Total	

Table (1.5) demographic shows the details of the analyzed sample. 80.5% of the participants are BA holders, 13.9% are MA holders, and 5.6% are Ph.D. holders. Moreover, the majority of the participants who represent 83.3% have teaching experience of more than 5 years, 8.3% represents participants with only one year experience in teaching, and respondents with 2 years of experience are represented by 5.6%, and others with 3 years of experience represented by 2.8%. It turned out that the majority of the participants have only one year in teaching using smart boards, and represented by 58.3%, while the respondents who used the smart boards for more than 5 years are represented by 22.2%. 13.9% of the respondents used smart boards from 3-5 years, 5.6% represents participants who used smart boards from 2-3 years. It is found that many of the participants have no specialized training in how to use smart boards in teaching and this was represented by 72.2%, while those who received training are represented by 27.8%. Most of the respondents are satisfied with the use of smart boards in teaching and represented by 91.7%, while only 8.3% are unsatisfied with using smart boards in teaching.

The study found that most participating EFL teachers in Hafr Al-Batin are qualified to teach intermediate English writing. While they have extensive teaching experience (often over five years), their use of smart boards is much newer, averaging only one year. This limited experience aligns with previous research suggesting that smart boards were only introduced in Saudi Arabia around 2009.

The study identified a potential hurdle: most teachers lacked specific training in using smart boards for EFL writing instruction. However, a surprising result emerged: the majority of teachers expressed satisfaction with using smart boards for this purpose. This unexpected finding seems to downplay the potential negative impact of limited training. Interestingly, this aligns with previous research by Aljameel (2022) and Alshumaimeri (2019) who highlighted the lack of teacher training as a significant barrier to technology integration in Saudi classrooms. While the limited training could negatively influence teachers' attitudes, the study found that most teachers were still happy with using smart boards to enhance students' writing skills. This unexpected positive outcome suggests a need for further investigation into how teachers are overcoming this potential challenge and achieving positive results despite the lack of formal training.

These results of teachers' lack of technological and pedagogical training would provide a clear understanding to find a solution to the research problem. The current results are built on existing evidence that although the importance of using smart boards in different levels of education were confirmed from learners' perspectives (Saed et al., 2024; Hussein et al., 2022; Tsayang, et al., 2020), little research hit on teachers' perspectives on using smart boards in EFL contexts in KSA (Alshaikhi, 2019; Almulla, 2017; Albugami; Ahmed, 2015; Al-Faki &Khamis, 2014). That is why the results from the above

data analysis of this study are very significant to solve teachers' training problems to help intermediate teachers teach EFL students writing skills effectively.

### **Descriptive Analysis of the independent and dependant variables:**

**Table (1.6): Means and Standard Deviations of the Study Variables**

Importance	Std. Deviation	Mean	
			<b>Interaction</b>
High	0.232	2.94	1.1 Smart boards' usage increase teachers' interaction with students during teaching writing skill.
High	0.232	2.94	1.2 Smart boards' usage encourages students' verbal interaction during practicing writing skill.
High	0.319	2.89	1.3 Smart boards encourage class-room participation during learning writing skills .
High	0.447	2.83	1.4 Smart boards enable teachers to teach writing skills better than the usual teaching method
High	0.485	2.78	1.5 Smart boards enable students to actively interact with writing skills teaching materials
High		2.88	
			<b>Self-efficiency</b>
High	0.424	2.86	2.1 My ability to make better use of smart boards leads to improve teaching materials of writing skills
High	0.280	2.92	2.2 Smart boards improve teachers' performance and raise the level of the lesson during teaching writing skill.
High	0.351	2.86	2.3 smart boards help teachers to improve lesson planning planning writhing lessons.
High	0.401	2.81	2.4 Using smart boards increase teachers' cognitive –self efficacy level during teaching writing skill.
High	0.401	2.81	2.5 using Smart boards require improving the cognitive content of the teaching materials
High		2.85	
			<b>Course Design (content)</b>
High	0.232	2.94	3.1 Smart boards help teachers to explain writing skills' requirements better through

Importance	Std. Deviation	Mean	
			audio and visual teaching
High	0.398	2.89	3.2 Smart boards provide teachers with rich content to teach writing skills
High	0.378	2.83	3.3 Smart boards attractively display writing skills materials
High	0.351	2.86	3.4 Smart boards help teachers to combine more than one writing skills content on several boards at one time
High	0.231	2.94	3.5 Smart boards help teachers to link previous writing teaching content with the new one easily moving between them back and forth.
High		2.89	
			Technical Support
High	0.478	2.67	4.1 Power outages cause lesson disruption problems during teaching writing skills
High	0.525	2.69	4.2 Internet connection problems affect the teaching process during teaching writing skill.
High	0.401	2.81	4.3 Facilitating the appropriate technical conditions is basic to use smart boards during teaching writing skill.
High	0.485	2.78	4.4 Technical support by specialized people facilitates the process of using the smart boards in teaching writing skill.
High	0.422	2.78	4.5 Efficient Smart boards' infrastructure management affects writhing skill teaching process.
High		2.75	
			Convenience and accessibility
High	0.424	2.86	5.1 Smart boards make the writing skills teaching process easier than the traditional method.
High	0.232	2.95	5.2 Smart boards make learning easy and more enjoyable.
High	0.232	2.95	5.3 Smart boards save teachers' time during teaching writing skill.
High	0.1667	2.97	5.4 Smart boards' teaching method is compatible with contemporary education in the 21st century.
High	0.167	2.97	5.5 Smart boards provide teachers with different teaching styles that suit different learners during teaching writing skill.
High		2.94	
			Teachers Attitudes

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Importance	Std. Deviation	Mean	
High	0.401	2.81	6.1 Smart board has the greatest priority in my teaching method during teaching writing skill.
High	0.485	2.78	6.2 In my opinion, smart board is a best tool to teach writing skills.
High	0.351	2.86	6.3 Personally, I care about using smart boards in my classes during teaching writing skill.
High	0.424	2.86	6.4 I advocate using smart boards in our schools.
High	0.424	2.86	6.5 I believe, Smart boards help me to improve my students' writing skills
High		2.83	

Table (1.6) shows the means and standard deviations of each variable in the dimensions of the questionnaire. Results of data analysis revealed that the mean of all variables ranged from 2.94 with high importance of the convenience and accessibility variable, to 2.75, which is also with a high importance of the technical support variable (Table 1.1). This result confirms that the majority of the respondents agreed with the details of all the mentioned variables in the above table (1.6) with high importance. The statement in convenience and accessibility 'Smart boards' teaching method is compatible with contemporary education in the 21st century' showed to have the highest value among all items, with a mean of 2.97. This contrasts with the statement under technical support 'Power outages cause lesson disruption problems' which shows the lowest value among all items, with a mean of 2.67 (Table 1.6).

The study revealed a strong endorsement for smart boards as tools in EFL writing classrooms. All participants concurred that smart boards are highly valuable in improving students' writing abilities. This suggests a positive shift in teacher attitudes, perceiving smart boards as convenient and accessible technologies. Compared to traditional methods, smart boards offer advantages like increased enjoyment and efficiency in lessons. This flexibility allows teachers to adapt their teaching

styles to cater to diverse learners, aligning well with the ideals of 21st-century education. Notably, the data suggests that convenience and accessibility are the most crucial factors influencing teachers' positive stances on using smart boards for writing instruction. These findings are further corroborated by existing research in this field (Saed et al., 2024; Bani-Fawaz, 2022; Hussein et al., 2022; Mohammed, 2021; Al-Faki & Khamis, 2014).

The analysis also highlighted limitations with technical support. Participants reported encountering technical problems when using smart boards in the classroom. Interestingly, the data suggests that technical support was the least important factor for teachers and had a weak to moderate correlation with their attitudes towards using smart boards. This aligns with previous research by Ahmed (2015), Almulla (2017), Alturki et al. (2020), and Bingimlas (2015), which identified infrastructure and technical support challenges faced by Saudi educators at various levels. Addressing these technical issues could be crucial in assisting intermediate EFL teachers in effectively utilizing smart boards to enhance students' writing skills.

An interesting contrast emerged when comparing the study's findings with those of Saed et al. (2024). Their research, involving Jordanian university staff teachers who were already accustomed to using smart boards in well-equipped classrooms, identified "interaction" as the most critical factor influencing teacher attitudes. In contrast, self-efficacy held the least importance for those participants. This difference might be due to several factors. Firstly, the established technological infrastructure in the Jordanian study may have allowed university staff teachers to experience a stronger sense of interaction with their students and the learning materials. Secondly, despite a moderate connection between self-efficacy and attitudes in Saed et al.'s research, the university staff

teachers still faced some challenges related to their own confidence in using smart boards effectively. Finally, both studies acknowledge that factors beyond those included in their analyses could also play a role in shaping teacher attitudes. These additional variables might differ significantly between the educational contexts of Saudi Arabia and Jordan. Overall, these findings highlight the importance of considering context when interpreting the factors that influence teachers' perceptions of technology integration in the classroom.

### Simple Linear Regression Analysis and Testing Hypotheses

**Table (1.7): Regression model between Interaction and teachers' attitudes toward smart boards' usage**

Coefficient		ANOVA		Model Summary			Dependent Variable
Sig.		p-value	F	R <sup>2</sup>	R		
0.032		.032 <sup>b</sup>	5.017	0.129	.359 <sup>a</sup>	Attitudes toward smart boards' usage	

The first hypothesis is tested as shown in Table (1.7). The correlation coefficient (R) indicates the strength of the relationship between interaction and teachers' attitudes and has a value of .359. Although this value is less than 1, the relationship between the two variables is positive. However, a weak to medium relationship between interaction and teachers' attitudes is found toward the use of smart boards to enhance students' writing skills (Table 1.2). R<sup>2</sup> value indicates how much of the difference in attitudes toward smart boards' usage to enhance writing skills could be explained by interaction between students and intermediate teachers. In this case only 12.9% of



teachers' attitudes could be explained through interaction, while 87.1% of the difference could be explained by other factors not used in this model of regression. Moreover, the F value of 5.017 indicates that there is a significant statistical effect of interaction on teachers' attitudes to teach EFL students writing skills by using smart boards at (p-value) .032b which is below the probability level (0.05). According to the above results the first hypothesis is accepted:

H1: Interaction has a significant impact at a significance (Sig.) level of  $\leq 0.05$  on teachers' attitudes toward smart boards' usage to enhance writing skills.

**Table (1.8): Regression model between Self-efficiency and teachers' attitudes toward smart boards' usage**

Coefficient	ANOVA		Model Summary		Dependent Variable
	P-value	F	R <sup>2</sup>	R	
Sig.					
0.021	.021 <sup>b</sup>	5.817	0.146	.382 <sup>a</sup>	Attitudes towards smart board use

The second hypothesis is tested as shown in Table (1.8). The correlation coefficient (R) indicates the strength of the relationship between self-efficiency and teachers' attitudes and has a value of .382a. Although this value is less than 1, the relationship between the two variables is positive. However, a weak to medium relationship between self-efficiency and teachers' attitudes is found toward the use of smart boards to enhance students' writing skills (Table 1.2). R<sup>2</sup> value indicates how much of the difference in attitudes toward smart boards' usage to enhance writing could be explained by self-efficiency. In this case only 14.6% of teachers' attitudes could be explained through self-efficiency, while 85.4% of the difference could be

explained by other factors not used in this model of regression. Moreover, the value of 5.817 indicates that there is a significant statistical effect of self-efficiency on teachers' attitudes to teach EFL students writing skills by using smart boards at (p-value) .021b which is below the probability level (0.05). According to the above results the second hypothesis is accepted:

H2: Self-Efficiency has a significant impact at a significance (Sig.) level of  $\leq 0.05$  on teachers' attitudes toward smart boards' usage to enhance writing skills.

**Table (1.9): Regression model between course design (content) and teachers' attitudes toward smart boards' usage**

Coefficient	ANOVA	Model Summary			
Sig.	p-value	F	R <sup>2</sup>	R	Dependent Variable
0.148	.000 <sup>b</sup>	22.506	0.398	.631 <sup>a</sup>	Attitudes towards smart board use

The third hypothesis is tested as shown in Table (1.9). The correlation coefficient (R) indicates the strength of the relationship between course design (content) and teachers' attitudes and has a value of .631a. Although this value is less than 1, the relationship between the two variables is positive. A medium to strong relationship between course design (content) and teachers' attitudes is found toward the use of smart boards to enhance students' writing skills (Table 1.2)). R<sup>2</sup> value indicates how much of the difference in attitudes toward smart boards' usage to enhance writing skills could be explained by course design (content). In this case only 39.8% of teachers' attitudes could be explained through course content, while 60.2% of the

difference could be explained by other factors not used in this model of regression. Moreover, the F value of 22.506 indicates that there is a significant statistical effect of course content on teachers' attitudes to teach EFL students writing skills by using smart boards at (p-value) .000b which is below the probability level (0.05). According to the above results the third hypothesis is accepted:

**H3: Course Design (Content) has a significant impact at a significance (Sig.) level of  $\leq 0.05$  on teachers' attitudes toward smart boards' usage to enhance writing skills.**

**Table (1.10): Regression model between Technical Support and teachers' attitudes toward smart boards' usage**

Coefficient	ANOVA	Model Summary			Dependent Variable
		F	R <sup>2</sup>	R	
Sig.	P-value				
0.018	.018 <sup>b</sup>	6.150	0.153	.391 <sup>a</sup>	Attitudes towards smart board use

The fourth hypothesis is tested as shown in Table (1.10). The correlation coefficient (R) indicates the strength of the relationship between technical support and teachers' attitudes and has a value of .391a. Although this value is less than 1, the relationship between the two variables is positive. A weak to medium relationship between technical support and teachers' attitudes is found toward the use of smart boards to enhance students' writing skills (Table 1.2). R<sup>2</sup> value indicates how much of the difference in attitudes toward smart boards' usage to enhance writing skills could be explained by technical support. In this case only 15.3% of teachers' attitudes could be explained through technical support, while 84.7% of the difference could be explained by other factors not used in this model of

regression. Moreover, the F value of 6.150 indicates that there is a significant statistical effect of technical support on teachers' attitudes to teach EFL students' writing skills by using smart boards at (p-value) .018b which is below the probability level (0.05). According to the above results the fourth hypothesis is accepted:

H4: Technical Support has a significant impact at a significance (Sig.) level of  $\leq 0.05$  on teachers' attitudes toward smart boards' usage to enhance writing skills

**Table (1.11): Regression model between Convenience &**

Coefficient		ANOVA		Model Summary		Dependent Variable
Sig.		P-value	F	R <sup>2</sup>	R	
0.000		.000 <sup>b</sup>	36.219	0.516	.718 <sup>a</sup>	Attitudes towards smart board use

#### **Accessibility and teachers' attitudes toward smart boards' usage**

The fifth hypothesis is tested as shown in Table (1.11). The correlation coefficient (R) indicates the strength of the relationship between Convenience & Accessibility and teachers' attitudes and has a value of .718a. Although this value is less than 1, the relationship between the two variables is positive. A strong relationship between Convenience & Accessibility and teachers' attitudes is found toward the use of smart boards to enhance students' writing skills (Table 1.2). R<sup>2</sup> value indicates how much of the difference in attitudes toward smart boards' usage to enhance writing skills could be explained by Convenience & Accessibility. In this case only 51.6% of

teachers' attitudes could be explained through Convenience & Accessibility, while 48.4% of the difference could be explained by other factors not used in this model of regression. Moreover, the F value of 36.219 indicates that there is a significant statistical effect of Convenience & Accessibility on teachers' attitudes to teach EFL students writing skills by using smart boards at (p-value) .000b which is below the probability level (0.05). According to the above results the fifth hypothesis is accepted:

H5: Convenience & Accessibility has a significant impact at a significance (Sig.) level of  $\leq 0.05$  on teachers' attitudes toward smart boards' usage to enhance writing skills

### **Recommendations:**

After discussing the previous results, the current study recommended the following:

- It is recommended to implement teacher training programs on smart boards' usage by the Ministry of Education.
- It is recommended to implement technological training in ICT by the Ministry of Education.
- It is recommended that Ministry of Education in collaboration with schools' authorities check and improve technological infrastructure in educational settings.
- It is recommended to implement training programs on smart boards' usage to syllabus designers and curriculum developers by the Ministry of Education.

### **Suggestions for future studies:**

The researcher suggested a number of future research as follows:

- Experimental research on Smart Boards' usage to enhance students' writing skills.
- Replication of this research is suggested at both girls and boys' intermediate schools at other Governorates in KSA, but better to increase the sample size to ensure more generalizability of the findings.
- Expansion of this research is also suggested, but at primary and secondary levels with increase of the sample size to get more overviews on this issue on a large scale to improve the quality of research and increase the generalizability of the findings.
- Further investigations are suggested into the correlations between the three independent variables of technical support, interaction, and self-efficiency and teachers' attitudes on smart boards' usage at primary, intermediate, and secondary schools at KSA, in different Governorates. This will be more efficient, if these studies are conducted after fulfilling the gaps of teacher technological training first. Results from the current study revealed that these three independent variables have weak to moderate relationships with teachers' attitudes.
- Findings of the above suggested research should be disseminated in research reports to the Ministry of Education, policy makers, and curriculum developers so as to make use of these findings and put them in practice.

### **Conclusion**

The current study explored the existence of a significant positive impact of smart boards' usage on the attitudes of the teachers at Hafr Al-Batin intermediate schools for girls through positive and strong relationships between convenience and

accessibility, course design, interaction, self-efficiency, and technical support respectively.

In the era of digital transformation, integrating technology into education is crucial for Saudi Arabia, as it is globally. This aligns with the national goal of equipping students with 21st-century skills and critical thinking abilities by 2030. Effectively integrating technology, specifically in EFL (English as a Foreign Language) instruction, can prepare students to become responsible citizens who can compete in the global job market and contribute to the country's social and economic development.

Encouragingly, this research reveals a strong teacher interest in advocating for the widespread use of smart boards across all school levels in Saudi Arabia. Despite encountering challenges, teachers' express satisfaction with smart boards' ability to enhance students' writing skills. Their positive attitudes and prioritization of smart boards as a teaching tool demonstrate their enthusiasm for this technology.

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