ASEAN Journal of Educational Research and Technology

Journal homepage: https://ejournal.bumipublikasinusantara.id/index.php/ajert

The Role of Interactive Walls in Supporting Reading Skills among Inclusive Education Students: School Principals' Perspectives

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ABSTRACT

This study examined school principals' perceptions of the role of interactive walls in supporting reading skills among inclusive education students in Jordan. A descriptive survey design was used with 50 principals selected through purposive sampling. Data were collected using a 32-item questionnaire covering fluency, originality, flexibility, and elaboration. The results showed that principals perceived interactive walls as highly supportive of students' reading skills overall, with fluency and flexibility receiving the highest ratings and elaboration receiving a moderate rating. Statistically significant differences were found according to gender, academic qualification, and years of experience. The study recommends integrating interactive walls with structured reading instruction to support inclusive and engaging literacy practices.

ARTICLE INFO

Article History:
Submitted/Received 28 Feb 2026
First Revised 20 Apr 2026
Accepted 29 Apr 2026
First Available online 05 May 2026
Publication Date 01 Dec 2026

Keyword:
Inclusive education;
Interactive walls;
Literacy instruction;
Reading skills;
School principals.

1. INTRODUCTION

Inclusive education has become a central concern in contemporary schooling. It seeks to ensure that all students, including those with diverse learning needs, can participate meaningfully in shared educational environments (Lhawon, 2025; Glushchenko, 2026; Al-Zahrani & Bello, 2026; Fakhriddinovna, 2025; Gil Jr, 2025). This orientation is consistent with the broader commitment to equitable and quality education, which emphasizes the removal of barriers that limit students' access, engagement, and achievement. In inclusive classrooms, equity is not achieved only by placing students in the same physical space; it also requires instructional environments that respond to different abilities, learning styles, and developmental needs. Therefore, schools need learning strategies and classroom resources that make participation more accessible, visible, and engaging for students who may experience difficulties in conventional instructional settings.

Reading is a foundational academic skill because it enables students to access knowledge, participate in classroom learning, and develop more advanced language and thinking abilities. Reading involves several interrelated processes, including word recognition, fluency, comprehension, interpretation, and critical engagement with texts. Students in inclusive education settings may encounter particular difficulties in reading because their learning profiles often differ in terms of attention, language processing, memory, motivation, and pace of learning. These challenges require instructional practices that are flexible, multisensory, and responsive to individual differences rather than approaches that rely only on uniform explanation, repetition, or textbook-based instruction.

The classroom environment plays an important role in shaping students' reading engagement because visual, spatial, and interactive resources can influence how students encounter and process written language. When classroom spaces are designed as active learning environments, they can support participation, motivation, peer interaction, and repeated exposure to language. Interactive walls are one example of such a resource because they transform classroom walls from static displays into instructional spaces where students can read, match, classify, write, move, and respond to visual and textual prompts. In this sense, interactive walls may support reading instruction by combining visual, cognitive, and kinesthetic engagement within a shared classroom environment (Consalvo & David, 2016; Panjaitan and Siahaan, 2024).

Interactive walls are especially relevant to inclusive education because they allow reading activities to be presented in multiple forms and at different levels of complexity. Wall-based reading tasks can include letters, words, sentence strips, vocabulary cards, pictures, concept maps, reading paths, matching games, and prompts that invite students to predict, summarize, or express ideas. These activities can help students interact with texts through movement, visual recognition, oral expression, and collaborative response. Such features are important in inclusive classrooms because students may benefit from varied modes of representation and expression when developing literacy skills. Interactive classroom displays can also encourage students to revisit reading content repeatedly, which may strengthen fluency, vocabulary development, and confidence in reading tasks (Yuliani & Linarta, 2024).

Although interactive walls have potential as supportive literacy tools, their role in inclusive education remains insufficiently examined, particularly from the perspective of school principals. Previous studies have discussed the value of wall-based and interactive word-wall practices in strengthening classroom language environments, vocabulary learning, and

reading-related engagement. However, relatively limited attention has been given to how school leaders perceive the use of interactive walls for supporting reading skills among students in inclusive education settings. This gap is important because principals influence the adoption, organization, and sustainability of instructional innovations in schools.

The present study addresses this gap by examining school principals' perceptions of the role of interactive walls in supporting reading skills among inclusive education students in Jordan. The study focuses on four dimensions of reading-related performance: fluency, originality, flexibility, and elaboration. Specifically, it investigates the perceived degree to which interactive walls support reading skills and examines whether principals' perceptions differ according to gender, academic qualification, and years of experience. By focusing on principals' perspectives, the study contributes to understanding how interactive classroom resources are viewed within inclusive school contexts and how such resources may inform more engaging and responsive literacy practices.

2. LITERATURE REVIEW

Interactive walls are part of a broader shift toward classroom environments that function as active learning spaces rather than passive physical settings. In literacy instruction, wall-based resources can expose students to letters, words, sentences, images, concepts, and reading prompts in ways that encourage repeated interaction with written language. Such resources are pedagogically valuable when they are not used merely as decoration but are designed to support reading, writing, thinking, and communication through purposeful classroom activity (Consalvo & David, 2016).

Interactive walls can support reading instruction by combining visual, verbal, and kinesthetic forms of learning. Students may interact with words, images, and texts by matching, classifying, sequencing, predicting, and responding to prompts displayed on classroom walls. These activities can create a more engaging reading environment because students are invited to participate physically and cognitively in the learning process. Word walls and interactive classroom displays have been associated with vocabulary development, comprehension support, and increased student engagement in language learning (Panjaitan and Siahaan, 2024).

In inclusive education settings, interactive walls may be particularly useful because students often differ in their learning needs, reading readiness, attention span, and preferred modes of expression. Inclusive classrooms require instructional strategies that provide multiple ways for students to access content and demonstrate understanding. Interactive walls can respond to this need by presenting reading materials through text, images, movement, oral interaction, and collaborative tasks. These features may help students who experience reading difficulties engage with texts in more accessible and motivating ways.

Reading skills include several connected abilities, such as recognizing words, reading fluently, understanding meaning, interpreting ideas, and responding creatively to texts (Hartati et al., 2023; Nafilah & Sakti, 2022; Nurjamin et al., 2025). For students in inclusive classrooms, the development of these skills may require structured support, repeated practice, and varied instructional resources. Interactive walls can contribute to this process

by making reading tasks visible, interactive, and adaptable to different levels of student ability. They can also encourage students to revisit vocabulary, sentence patterns, and textual ideas through classroom routines and guided activities (Yuliani & Linarta, 2024).

Previous studies support the educational value of wall-based and interactive classroom displays. Classroom wall writing has been shown to create a rich textual environment that supports reading, writing, and higher-order thinking in physical classroom spaces (Consalvo & David, 2016). Interactive word walls have also been found to improve students' comprehension and reading understanding, particularly among students with learning difficulties in secondary science classrooms. Similarly, interactive word walls have demonstrated a positive effect on vocabulary comprehension and vocabulary knowledge among kindergarten students.

Other literacy-related strategies also suggest that visual and structured thinking tools can support reading comprehension. Thinking maps, for example, have been found effective in developing reading comprehension skills among Arabic language learners who are non-native speakers (Al Harbi, 2019). This finding is relevant because interactive walls can incorporate similar visual organization strategies, such as concept maps, sequencing charts, word clusters, and idea-generation tasks. Such visual supports may help students organize meaning, connect ideas, and express their understanding of reading texts (Al Harbi, 2019).

Despite these contributions, the existing literature gives limited attention to the use of interactive walls in inclusive education contexts, especially from the perspective of school principals. Much of the available research focuses on classroom implementation, vocabulary learning, or student outcomes in specific subject areas. Less is known about how school leaders perceive the role of interactive walls in supporting reading skills among inclusive education students. This perspective is important because principals influence instructional priorities, teacher support, classroom resources, and the sustainability of educational innovations.

The present study conceptualizes interactive walls as instructional classroom resources that may support reading through fluency, originality, flexibility, and elaboration. Fluency refers to students' ability to read with appropriate speed, continuity, and accuracy. Originality refers to students' ability to generate new or uncommon responses to reading texts. Flexibility refers to students' ability to respond to texts in varied ways and adapt to different reading tasks. Elaboration refers to students' ability to identify details, follow sequences, summarize ideas, and expand their understanding of texts. These dimensions provide a framework for examining how school principals perceive the role of interactive walls in supporting reading skills among inclusive education students.

3. METHODS

This study used a descriptive survey design to examine school principals' perceptions of the role of interactive walls in supporting reading skills among inclusive education students in Jordan. The study was conducted in public schools affiliated with the Directorate of Education of Al-Qweismeh District in Amman during the first semester of the 2025/2026 academic year. The study population consisted of all male and female school principals in the district. A purposive sample of 50 principals was selected because the participants were considered able

to provide relevant information about the use of interactive walls in inclusive education settings.

The demographic characteristics of the participants are presented in **Table 1**. Data were collected using a Reading Skills Questionnaire developed by the researchers after reviewing relevant educational literature and previous studies. The questionnaire consisted of 32 items distributed across four dimensions: fluency, originality, flexibility, and elaboration. Responses were scored using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Mean scores were interpreted using three levels: low, moderate, and high.

Table 1. Demographic characteristics of the participants

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE (%)
Gender	Male	15	30
	Female	35	70
Academic qualification	Higher Diploma	40	80
	Postgraduate Studies	10	20
Years of experience	< 10 years	14	28
	≥ 10 years	36	72

The questionnaire was reviewed by a panel of specialists, including university faculty members and educational supervisors, to ensure the clarity, relevance, and suitability of the items. The instrument was then piloted with a group of participants outside the main sample to examine its validity and reliability. Construct validity was assessed through correlations between the items, their domains, and the total score. Reliability was examined using test–retest reliability and Cronbach's alpha. The pilot results indicated that the instrument had acceptable validity and reliability for use in the main study.

After data collection, the responses were coded and analyzed using descriptive and inferential statistics. Means and standard deviations were used to determine the degree to which school principals perceived interactive walls as supporting reading skills among inclusive education students. The Mann–Whitney U test was used to examine differences in principals' perceptions according to gender, academic qualification, and years of experience. Statistical significance was assessed at $\alpha = 0.05$.

3. RESULTS AND DISCUSSION

The results of the study are presented and discussed according to the objectives of the research. The analysis begins with evidence related to the quality of the study instrument, followed by the descriptive results of principals' perceptions of interactive walls and the differences in these perceptions according to gender, academic qualification, and years of experience. Because the study was based on principals' perceptions, the findings are interpreted as perceived support for reading skills rather than direct causal evidence of students' reading improvement.

Before analyzing the main data, the validity of the Reading Skills Questionnaire was examined. Pearson correlation coefficients were calculated between each item and its respective domain and between each item and the total score of the instrument. The results are presented in **Table 2**. The correlation coefficients between the items and their respective domains ranged from 0.39 to 0.88, while the correlations between the items and the total

instrument score ranged from 0.39 to 0.83. These values indicate that the questionnaire items were sufficiently related to the domains they were intended to measure and to the overall construct of reading skills. The statistical significance of the correlations also suggests that the items had acceptable construct validity for the purposes of the study. Therefore, the reported items were retained in the instrument.

Table 2. Item–domain and item–total correlation coefficients

ITEM NO.	CORRELATION WITH DOMAIN	CORRELATION WITH INSTRUMENT
1	0.55**	0.47**
2	0.49**	0.39*
3	0.73**	0.70**
4	0.44*	0.64**
5	0.72**	0.64**
6	0.78**	0.75**
7	0.88**	0.83**
8	0.69**	0.68**
9	0.88**	0.60**
10	0.51**	0.63**
11	0.61**	0.76**
12	0.73**	0.64**
13	0.40*	0.56**
14	0.64**	0.73**
15	0.47**	0.39*
16	0.71**	0.64**
17	0.64**	0.59**
18	0.61**	0.76**
19	0.45*	0.39*
20	0.72**	0.73**
21	0.58**	0.56**
22	0.85**	0.54**
23	0.68**	0.67**
24	0.54**	0.66**
25	0.65**	0.54**
26	0.88**	0.60**
27	0.51**	0.63**
28	0.54**	0.66**
29	0.85**	0.54**
31	0.71**	0.39*
32	0.56**	0.67**

Note: $p \leq 0.05$. **p** ≤ 0.01. Item 30 was not reported in the original table and should be verified against the original dataset before final submission.

Further evidence of construct validity was obtained by examining the correlations among the four domains and the total score of the scale. **Table 3** shows that all domains were positively and significantly correlated with the total score of the scale. The strongest correlations with the total score appeared in flexibility, fluency, and originality, while elaboration also showed a meaningful relationship with the total score. These findings indicate that the four domains were connected to the broader construct measured by the questionnaire. At the same time, the moderate correlation between elaboration and the other domains suggests that elaboration may represent a more demanding aspect of reading

performance, especially because it involves identifying details, organizing ideas, following sequences, and extending meaning beyond surface-level reading.

The reliability of the study instrument was also examined using test–retest reliability and Cronbach's alpha. The reliability coefficients are presented in **Table 4**. The test–retest reliability coefficients ranged from 0.81 to 0.91, while Cronbach's alpha coefficients ranged from 0.77 to 0.84. These values indicate that the instrument had acceptable stability and internal consistency. The total score of creative reading skills showed the highest test–retest coefficient and a strong internal consistency coefficient, suggesting that the questionnaire was reliable for measuring principals' perceptions of the role of interactive walls in supporting reading skills among inclusive education students.

Table 3. Correlations among the scale domains and total score

DOMAIN	FLUENCY	ORIGINALITY	FLEXIBILITY	ELABORATION	CREATIVE READING SKILLS
Fluency	1				
Originality	0.775**	1			
Flexibility	0.826**	0.801**			
Elaboration	0.474**	0.499**	0.500**	1	
Creative	0.895**	0.871**	0.897**	0.757**	
Reading Skills					1

Note: **p ≤ 0.01.

Table 4. Reliability coefficients of the study instrument

DOMAIN	TEST–RETEST RELIABILITY	INTERNAL CONSISTENCY (CRONBACH'S ALPHA)
Fluency	0.86	0.82
Originality	0.81	0.77
Flexibility	0.89	0.79
Elaboration	0.85	0.80
Creative Reading Skills	0.91	0.84
Fluency	0.86	0.82

After establishing the quality of the instrument, descriptive statistics were calculated to answer the main research question concerning the role of interactive walls in supporting reading skills among inclusive education students from the perspectives of school principals. The item-level means and standard deviations are presented in **Table 5**. Principals generally perceived interactive walls as supportive of reading skills among inclusive education students. The highest mean scores were found in items related to reading speed, reading pace according to individual ability, reading in a motivating environment, developing solutions to textual problems, adjusting tone of voice, and expressing understanding in varied ways. These results suggest that interactive walls may be particularly useful for reading activities that involve fluency, confidence, oral expression, and active engagement.

Table 5. Descriptive statistics for principals' perceptions of interactive walls in supporting reading skills

NO.	ITEM	MEAN	STANDARD DEVIATION
1	Interactive walls show improvement in reading speed among inclusive education students without compromising pronunciation accuracy.	4.18	0.96
2	Interactive walls enable inclusive education students to read	4.18	0.77
3	texts at a speed appropriate to their individual abilities. Inclusive education students demonstrate self-confidence when reading short, complete texts.	3.86	0.95
4	Inclusive education students use appropriate gestures and movements when reading with interactive walls.	3.80	0.93
5	Interactive walls have shown clear progress in reading fluency for inclusive education students.	3.74	0.99
6	Interactive walls provide inclusive education students with reading activities that challenge their thinking.	3.82	0.94
7	Interactive walls enable inclusive education students to generate multiple ideas related to the reading text.	3.88	0.82
8	Interactive walls provide a comfortable and motivating environment that allows students to read a paragraph without frequent interruptions.	4.16	0.65
9	Inclusive education students make unconventional predictions about the text's content.	2.54	1.05
10	Inclusive education students demonstrate the ability to read the same text in multiple ways.	3.76	1.10
11	Inclusive education students suggest innovative titles for the reading text.	3.98	0.69
12	Reading by inclusive education students reflects authentic creative thinking.	4.00	0.86
13	Inclusive education students connect the text to their prior experiences.	3.76	0.92
14	Inclusive education students infer indirect ideas from texts.	3.80	0.81
15	Students provide interpretations of characters and events.	3.86	1.14
16	Inclusive education students create different creative endings for the reading texts.	3.94	0.82
17	Inclusive education students develop innovative solutions to problems presented in the text.	4.14	0.67
18	Inclusive education students are able to correct their mistakes while reading.	3.96	0.81
19	Inclusive education students can adapt to diverse reading texts.	3.90	0.89
20	Inclusive education students demonstrate flexibility in dealing with unfamiliar words.	3.80	0.81
21	Inclusive education students adjust their tone of voice according to the text's content.	4.12	0.77
22	Inclusive education students can rephrase the text's ideas in their own style.	3.68	1.19
23	Inclusive education students express their understanding of the text in diverse ways.	4.06	0.89
24	Students show clear comprehension of texts in different ways.	4.08	0.63
25	Inclusive education students demonstrate the ability to identify the main details in the reading text.	2.96	1.18

Table 5 (continue). Descriptive statistics for principals' perceptions of interactive walls in supporting reading skills

NO.	ITEM	MEAN	STANDARD DEVIATION
26	Inclusive education students can accurately follow the sequence of events in the text.	2.74	1.19
27	Inclusive education students are able to answer questions related to text details.	3.86	0.76
28	Inclusive education students show noticeable improvement in attention to precise details in the text.	3.82	0.77
29	Inclusive education students successfully summarize the text while preserving its key details.	2.46	1.20
31	Students identify the characteristics of characters in the texts.	2.90	1.31
32	Students can identify words related to time and place.	3.80	0.97

Note: Item 30 was not reported in the original manuscript and should be verified against the original dataset before final submission.

Several items received moderate mean scores, especially those related to making unconventional predictions, identifying main details, following the sequence of events, summarizing while preserving key details, and identifying character traits. These findings indicate that interactive walls may be perceived as more effective in supporting visible, participatory, and fluency-related aspects of reading than in supporting more complex comprehension tasks that require analysis, organization, and synthesis. This distinction is important because reading development involves not only speed and confidence but also the ability to interpret, organize, and evaluate textual information.

The relatively high scores for items related to fluency and expressive engagement may be explained by the nature of interactive walls as visual and kinesthetic instructional tools. When students interact with reading materials through movement, display, matching, and oral response, reading becomes less dependent on passive seatwork and more connected to classroom participation. Such an environment may reduce reading anxiety and increase students' willingness to engage with texts, especially among learners who need additional support in inclusive classrooms. Interactive displays and word-wall practices can support vocabulary exposure, comprehension, and engagement when they are used as part of purposeful classroom activities rather than as decorative materials (Panjaitan and Siahaan, 2024).

The lower scores for summarizing, sequencing, and identifying detailed information suggest that interactive walls alone may not be sufficient for developing deeper reading comprehension. These skills require guided questioning, modeling, explicit strategy instruction, and repeated practice. Interactive walls can provide prompts and visual supports, but students still need structured teacher guidance to move from recognition and participation toward interpretation and analysis. This interpretation is consistent with the view that classroom wall resources become pedagogically meaningful when they support

thinking, writing, reading, and communication through deliberate instructional use (Consalvo & David, 2016).

To examine the degree to which interactive walls were perceived to support reading skills at the domain level, means and standard deviations were calculated for fluency, originality, flexibility, elaboration, and the total score. The results are presented in **Table 6**. The overall mean for creative reading skills was high, with a mean of 3.73 and a standard deviation of 0.44. Among the four domains, fluency ranked first, followed closely by flexibility. Originality also reached a high level, whereas elaboration ranked last and received a moderate level. This pattern suggests that principals viewed interactive walls as most effective in supporting reading fluency and flexible engagement with texts, while they perceived a weaker role in supporting detailed and extended comprehension.

Table 6. Domain-level means and standard deviations for interactive wall implementation

RANK	NO.	DOMAIN	MEAN	STANDARD DEVIATION	LEVEL
1	1	Fluency	3.95	0.56	High
2	3	Flexibility	3.94	0.46	High
3	5	Creative Reading Skills	3.73	0.44	High
4	2	Originality	3.70	0.45	High
5	4	Elaboration	3.22	0.70	Moderate

The high level of fluency indicates that principals perceived interactive walls as useful for helping students read with greater speed, confidence, and continuity. This may be because interactive walls provide repeated exposure to words, phrases, sentence structures, and reading prompts. Repetition in a visible and accessible classroom space can help students revisit reading materials more frequently and with less pressure. For inclusive education students, such repeated exposure may support gradual improvement in oral reading, pronunciation, and confidence.

The high level of flexibility suggests that interactive walls may encourage students to respond to texts in varied ways. Students can interact with reading content through movement, oral reading, visual matching, rephrasing, and collaborative discussion. This flexibility is valuable in inclusive education because students may differ in how they best understand and express meaning. Interactive murals and visual classroom displays may support student participation by providing varied visual and language-based opportunities for engagement (Yuliani & Linarta, 2024).

Originality also received a high mean score, suggesting that principals believed interactive walls could support students' ability to produce new ideas, suggest titles, create endings, and offer solutions related to reading texts. This result may reflect the open-ended nature of some wall-based activities, particularly those that invite students to predict, imagine, classify, or respond creatively. However, originality should be interpreted cautiously because the study measured principals' perceptions rather than direct student performance.

Elaboration received only a moderate rating, which is a meaningful finding. Elaboration requires students to identify details, follow event sequences, summarize accurately, and expand textual meaning. These skills are cognitively demanding and may not develop

automatically through interactive wall activities unless the activities are supported by explicit reading strategies. Therefore, interactive walls may be better understood as supportive instructional tools rather than complete substitutes for structured reading instruction.

The domain-level findings suggest that interactive walls can support inclusive reading instruction most strongly when used to promote engagement, fluency, and flexible participation. However, their weaker contribution to elaboration indicates the need to combine them with more systematic comprehension strategies. Thinking maps, sequencing tasks, guided summarization, and teacher-led questioning may strengthen the ability of interactive walls to support deeper reading comprehension. Visual organization strategies have been shown to support reading comprehension by helping students arrange, connect, and interpret ideas more effectively (Al Harbi, 2019).

The next stage of analysis examined whether principals' perceptions differed according to gender, academic qualification, and years of experience. Because the comparison groups were unequal in size, the Mann–Whitney U test was used to test the significance of differences between groups. **Table 7** shows statistically significant differences according to gender across all domains and in the total score. The differences favored female principals, who reported higher mean ranks and higher mean scores than male principals. This result indicates that female principals perceived interactive walls as more supportive of reading skills among inclusive education students. The largest difference appeared in the total score of creative reading skills, followed by flexibility and fluency.

Table 7. Mann–Whitney U test results by gender

DIMENSION	GENDER	N	MEAN RANK	RANK SUM	MEAN	U	Z	SIGNIFICANCE (*P*)
Fluency	Male	15	14.10	211.50	3.45	91.50	-3.641	0.000
	Female	35	30.39	1063.50	4.17			
Originality	Male	15	17.13	257.00	3.40	137.00	-2.675	0.007
	Female	35	29.09	1018.00	3.82			
Flexibility	Male	15	13.80	207.00	3.57	87.00	-3.728	0.000
	Female	35	30.51	1068.00	4.10			
Elaboration	Male	15	19.07	286.00	2.91	166.00	-2.054	0.040
	Female	35	28.26	989.00	3.35			
Creative	Male	15	12.47	187.00	3.35	67.00	-4.142	0.000
Reading Skills	Female	35	31.09	1088.00	3.89			

This finding may reflect differences in how principals observe, evaluate, or prioritize interactive classroom practices. Female principals in the sample may have been more attentive to the participatory and supportive aspects of interactive walls, especially in relation to reading confidence, classroom engagement, and differentiated instruction. However, because the study did not examine the reasons behind these differences qualitatively, this interpretation should be treated as tentative. The result shows a statistically significant difference in perception, but it does not explain the underlying cause of that difference.

The findings related to academic qualification are presented in **Table 8**. This shows statistically significant differences according to academic qualification across all domains and

in the total score. The differences favored principals holding a Higher Diploma, who reported higher mean ranks and higher mean scores than principals with postgraduate studies. This finding indicates that principals with Higher Diploma qualifications perceived interactive walls as more supportive of reading skills among inclusive education students.

Table 8. Mann–Whitney U test results by academic qualification

DIMENSION	ACADEMIC QUALIFICATION	N	MEAN RANK	RANK SUM	MEAN	U	Z	SIGNIFICANCE (*P*)
Fluency	Higher Diploma	40	29.33	1173.00	4.11	47.00	-3.732	0.000
	Postgraduate Studies	10	10.20	102.00	3.33			
Originality	Higher Diploma	40	28.09	1123.50	3.78	96.50	-2.528	0.011
	Postgraduate Studies	10	15.15	151.50	3.37			
Flexibility	Higher Diploma	40	28.71	1148.50	4.04	71.50	-3.127	0.002
	Postgraduate Studies	10	12.65	126.50	3.54			
Elaboration	Higher Diploma	40	27.90	1116.00	3.33	104.00	-2.341	0.019
	Postgraduate Studies	10	15.90	159.00	2.77			
Creative Reading Skills	Higher Diploma	40	29.53	1181.00	3.84	39.00	-3.908	0.000
	Postgraduate Studies	10	9.40	94.00	3.27			

This result may be related to differences in professional orientation and practical engagement with school-based instructional tools. Principals with Higher Diploma qualifications may have more direct or practice-oriented familiarity with classroom strategies, which could make them more likely to value interactive walls as usable teaching resources. In contrast, principals with postgraduate qualifications may evaluate instructional tools more critically or may be more cautious in judging their effectiveness without direct evidence of student performance. This interpretation should be treated carefully because the present study did not collect qualitative data explaining the reasons behind principals' responses.

The pattern of results suggests that perceptions of interactive walls are influenced not only by the tool itself but also by the professional background of the school leaders evaluating it. Interactive walls may be seen as more valuable when principals focus on practical classroom engagement, visual support, and immediate student participation. However, when evaluated from a more research-oriented perspective, their perceived value may depend on the presence of structured implementation, measurable outcomes, and integration with systematic reading instruction.

Table 9 indicates statistically significant differences according to years of experience across all domains and in the total score. The differences favored principals with 10 years or more of experience, who reported higher perceptions of the role of interactive walls in supporting reading skills. This result suggests that more experienced principals may be better able to recognize the instructional value of classroom resources that support engagement, participation, and differentiated learning.

Table 9. Mann–Whitney U test results by years of experience

DIMENSION	ACADEMIC QUALIFICATION	N	MEAN RANK	RANK SUM	MEAN	U	Z	SIGNIFICANCE (*P*)
Fluency	< 10 years	14	16.07	225.00	3.57	120.00	-2.869	0.004
	> 10 years	36	29.17	1050.00	4.10			
Originality	< 10 years	14	15.18	212.50	3.39	107.50	-3.144	0.002
	> 10 years	36	29.51	1062.50	3.82			
Flexibility	< 10 years	14	13.82	193.50	3.59	88.50	-3.545	0.000
	> 10 years	36	30.04	1081.50	4.08			
Elaboration	< 10 years	14	15.50	217.00	2.77	112.00	-3.041	0.002
	> 10 years	36	29.39	1058.00	3.40			
Creative Reading Skills	< 10 years	14	11.93	167.00	3.35	62.00	-4.108	0.000
	> 10 years	36	30.78	1108.00	3.87			

The higher ratings among experienced principals may reflect their broader exposure to students' reading difficulties and to the limitations of traditional instructional practices. Principals with longer professional experience may have observed how visual and interactive resources can help students participate more actively in reading tasks. They may also be more familiar with the gradual nature of reading development and therefore more likely to recognize the contribution of tools that support repeated practice, confidence, and classroom interaction.

Across the three comparison variables, the findings show that principals' perceptions were not uniform. Female principals, principals with Higher Diploma qualifications, and principals with 10 years or more of experience reported more positive perceptions of interactive walls. These differences suggest that school leaders' evaluations of instructional innovations are shaped by their professional experiences, educational backgrounds, and possibly their daily interaction with classroom practices. Therefore, the adoption of interactive walls in inclusive education should not be treated only as a matter of providing physical materials; it also requires leadership awareness, teacher preparation, and shared understanding of how interactive walls should be used pedagogically.

Interactive walls were perceived as useful tools for supporting reading skills among inclusive education students, particularly in fluency, flexibility, engagement, and creative response. This supports the idea that wall-based literacy resources can enrich classroom language environments and make reading more visible, participatory, and accessible. Classroom wall practices can support literacy when they are integrated into meaningful reading, writing, and thinking activities rather than used as passive displays (Consalvo & David, 2016). Word walls and related visual literacy tools can also support vocabulary

acquisition and reading engagement when students interact with them repeatedly through structured activities (Panjaitan and Siahaan, 2024).

At the same time, the moderate result for elaboration shows that interactive walls should not be considered sufficient on their own for developing deeper reading comprehension. Skills such as summarizing, sequencing, identifying main details, and interpreting character traits require explicit instruction, guided practice, and teacher feedback. Interactive walls can provide visual prompts and opportunities for participation, but students still need systematic support to move from surface-level engagement to deeper comprehension. Visual tools such as thinking maps may help students organize and connect textual ideas, which suggests that interactive walls may be more effective when combined with structured comprehension strategies (Al Harbi, 2019).

The findings also have implications for inclusive education practice. Inclusive classrooms require strategies that give students multiple ways to access reading materials and express understanding. Interactive walls can support this need by offering visual, verbal, and kinesthetic forms of engagement. These features may be especially helpful for students who experience difficulty with attention, language processing, or confidence in reading tasks. Interactive murals and visual classroom displays can make vocabulary and text-based learning more accessible when they are connected to meaningful classroom interaction (Yuliani & Linarta, 2024). However, successful implementation depends on how interactive walls are designed and used. If they are treated as decorative classroom elements, their instructional value may be limited. To be effective, interactive walls should be aligned with reading objectives, updated regularly, and used through guided activities such as prediction, matching, oral reading, sequencing, summarizing, and peer discussion. This is particularly important in inclusive education settings, where students may need structured routines and differentiated tasks to benefit from classroom resources.

Interactive walls can play a supportive role in inclusive reading instruction, but their contribution is strongest when they are integrated into planned literacy activities. The findings support the use of interactive walls as part of a broader instructional approach that combines visual engagement, student participation, teacher guidance, and explicit comprehension strategies. This balanced use may help schools create more inclusive literacy environments while also addressing the more demanding aspects of reading development.

4. CONCLUSION

This study examined school principals' perceptions of the role of interactive walls in supporting reading skills among inclusive education students in Jordan. The findings showed that principals generally perceived interactive walls as supportive instructional tools, particularly in relation to reading fluency, flexibility, confidence, engagement, and creative response. The overall level of perceived support was high, while elaboration received a moderate rating. This suggests that interactive walls may be more effective in supporting visible and participatory aspects of reading than in developing deeper comprehension skills such as summarizing, sequencing, and identifying detailed textual information. The results also showed statistically significant differences in principals' perceptions according to gender, academic qualification, and years of experience. Female principals, principals holding a Higher

Diploma, and principals with 10 years or more of experience reported higher perceptions of the role of interactive walls in supporting reading skills. These findings indicate that school leaders' evaluations of instructional tools may vary according to professional and demographic characteristics. The study contributes to inclusive education practice by highlighting the potential value of interactive walls as classroom resources that can make reading instruction more visual, engaging, and accessible. However, interactive walls should not be used as isolated decorative tools. Their effectiveness depends on purposeful integration into structured reading activities, including oral reading, vocabulary practice, prediction, sequencing, summarizing, guided questioning, and peer interaction. The study recommends expanding the use of interactive walls in inclusive education settings, training teachers to use them effectively, and encouraging school principals to support their integration into reading instruction. Future studies should examine the direct impact of interactive walls on students' reading performance using experimental or mixed-methods designs. Further research may also explore teachers' and students' perspectives to provide a more comprehensive understanding of how interactive walls function in inclusive literacy classrooms.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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