

Transforming teaching through Classera: Insights from Saudi Arabian secondary schools

Israa Ahmed Alhujayri

Saudi Arabia

i.alhujayri@outlook.com

Abstract

This study explores how Classera, a Virtual Learning Environment (VLE), is being used in Saudi Arabian secondary schools, focusing on its adoption patterns, available support, and ongoing challenges. Through a mixed-methods approach involving data from 91 teachers across five schools, the findings show that Classera enhances resource sharing and communication but is held back by gaps in infrastructure and training. While teachers commonly use basic features, advanced tools remain underutilized. Schools with strong ICT support and comprehensive professional development show higher adoption rates, pointing to the importance of expanding learner-centered curricula and offering continuous training to maximize Classera's impact.

Key words: Virtual Learning Environment (VLE), ICT integration, e-learning adoption, ICT infrastructure

Introduction

The integration of digital technologies into educational frameworks has precipitated a transformative shift in pedagogical practices, offering new opportunities for enhancing teaching and learning processes. Virtual Learning Environments (VLEs) represent a pivotal advancement in this digital transformation, providing multifaceted platforms that support a range of educational activities including content delivery, student engagement, and administrative functions. Among these VLEs, Classera has emerged as a significant tool within the Saudi Arabian educational landscape, designed to address the specific needs of secondary schools and align with national educational reforms.

Classera, a sophisticated VLE, has been strategically implemented across secondary schools in Saudi Arabia as part of the country's broader educational initiative under Vision 2030. This vision aims to foster a knowledge-based economy through the adoption of innovative technologies in education. By facilitating a more interactive and personalized learning experience, Classera aspires to enhance educational outcomes, streamline administrative processes, and support educators in their instructional roles.

This article presents an in-depth analysis of Classera's integration and its impact within Saudi Arabian secondary schools. The investigation encompasses various dimensions of Classera's implementation, including its adoption by teachers and students, the technological infrastructure supporting its use, and the challenges encountered during its deployment. This analysis is framed within the broader context of educational technology integration, drawing on theoretical and empirical insights to evaluate Classera's efficacy as a VLE.

The primary objective of this study is to elucidate the extent to which Classera has influenced teaching practices and learning outcomes in secondary education. By examining both quantitative and qualitative data, this research aims to provide a nuanced understanding of how Classera functions as an educational tool and its effectiveness in enhancing the overall educational experience. The findings are intended to contribute to the scholarly discourse on VLEs and offer practical recommendations for optimizing their use in educational settings.

This research is significant for several reasons. First, it offers a comprehensive evaluation of Classera, a VLE that is central to Saudi Arabia's educational technology strategy. Second, it provides valuable insights into the broader implications of VLE adoption, informing educators, policymakers, and technology developers about the practical benefits and limitations of such platforms. By contributing to the knowledge base on VLE integration, this study seeks to advance the understanding of how digital tools can be leveraged to support educational goals and improve student outcomes in secondary education.

Literature review

VLEs have become integral to modern education worldwide, as educational institutions increasingly adopt digital platforms to support interactive and blended learning. Globally, platforms such as Moodle and Blackboard facilitate both administrative and instructional tasks, leading to improved learning experiences in various educational systems (Nguyen, 2015; Jewitt et al., 2010). In Saudi Arabia, this trend aligns with national initiatives under Vision 2030 to integrate technology into education, with Classera emerging as a prominent VLE in secondary schools. This study focuses on understanding how Classera, as part of these broader educational reforms, is being utilized and adapted within the unique Saudi context.

The integration of VLEs has become a crucial aspect of modern educational systems, driven by the growing emphasis on harnessing Information and Communication Technologies (ICT) play a vital role in advancing teaching and learning processes. Globally, VLEs have gained prominence as educational institutions seek innovative approaches to enrich pedagogical practices and streamline administrative tasks. Classera, a leading VLE in Saudi Arabia, exemplifies the transformative potential of digital platforms in education. This review critically examines the adoption and utilization of Classera in Saudi Arabian secondary schools, focusing on its impact, the benefits it offers, and the challenges that impede its full realization. By investigating global and regional trends in VLE integration, the review contextualizes Classera's role within the broader landscape of educational technology while identifying avenues for optimizing its use in secondary education.

VLEs serve as sophisticated, digitally mediated platforms that support a wide array of educational activities, including content delivery, student assessment, teacher-student interaction, and collaborative learning. These platforms provide structured, web-based environments that enhance instructional processes while improving administrative efficiencies. Hammond (2010) defines VLEs as systems that allow learners and instructors to interact through controlled-access digital interfaces, consolidating educational activities within a unified framework. While the term "Managed Learning Environment" (MLE) was previously used to describe such systems, VLE has emerged as the more prevalent term, according to Hammond. Examples such as Moodle, Blackboard, and custom-built systems demonstrate how VLEs support the organization of learning resources, facilitate assessments, and enable communication between students and instructors. VLEs are often perceived as transformative tools that foster personalized and collaborative learning environments. However, it is crucial to distinguish VLEs from more generic Learning Platforms (LPs), which lack the specific functionalities related to instructional management that define a true VLE.

Previous studies on VLEs in Saudi Arabia, such as research on the Tatweer platform (Binothman, 2015), demonstrate both the potential and limitations of digital education tools in this context. Findings reveal that while VLEs can enhance learning outcomes, they often face challenges related to teacher preparedness and varying levels of student engagement. Classera's role in Saudi education thus reflects both these opportunities and ongoing challenges in integrating digital tools into a traditional educational framework.

On a global scale, the adoption of VLEs has been influenced by a variety of contextual factors, including technological infrastructure, teacher readiness, and institutional support. National initiatives such as Malaysia's Frog VLE and Saudi Arabia's Tatweer program represent ambitious efforts to integrate digital platforms into education. These programs aimed to facilitate communication, resource sharing, and e-learning, yet encountered significant challenges in terms of user engagement and the full utilization of available features. Research by Joshi (2024), Pynoo et al. (2012) and Binothman (2015) highlights that while these platforms were generally well-received by educators and students, their actual impact on learning outcomes was often limited due to underutilization and inadequate engagement. Similar patterns were observed in Qatar, where the Knowledge-Net portal, designed to provide students with enhanced access to educational resources, was underutilized as students gravitated towards more engaging, interactive online materials (Nasser et al., 2011). These findings emphasize the importance of addressing contextual barriers and aligning VLE functionalities with user preferences to optimize their educational impact.

While global trends in VLE adoption underscore the role of strong ICT infrastructure and teacher training in successful implementation, Saudi Arabia faces specific challenges that influence how Classera is used. Infrastructure variability, differences in teacher ICT skills, and cultural considerations such as varying levels of parental engagement are notable factors (Binothman, 2015; Nasser et al., 2011). These challenges shape the effectiveness of Classera in Saudi schools and highlight the need for locally tailored strategies to maximize VLE benefits.

The benefits of integrating VLEs into educational settings are numerous. Jewitt et al. (2010) identified a range of positive outcomes associated with VLE usage, including improved organization of school information, enhanced parental involvement, and the promotion of personalized learning. VLEs enable access to digital learning resources, support collaborative learning, and streamline administrative processes related to student tracking, performance,

and behavior management. Furthermore, VLEs are key in supporting blended learning models that integrate face-to-face teaching with online components, thus allowing students to engage with learning materials beyond the classroom. This approach has been shown to foster active learning and greater student engagement, as discussed by Nguyen (2015) and Elmaadaway (2018). By providing teachers with greater flexibility in their instructional approaches, VLEs also improve communication and resource-sharing capabilities, benefiting students and parents alike. However, the successful integration of VLEs requires educators to develop both the technological and pedagogical skills needed to utilize these platforms effectively, underscoring the need for ongoing professional development (Pretorius, 2023).

Research shows that VLEs support resource-sharing, student engagement, and administrative efficiency, as seen in studies from various contexts (Ferdig et al., 2009; Pynoo et al., 2012). Consistent with these findings, this study indicates that Classera's primary benefit lies in its ability to streamline resource-sharing and communication. However, challenges such as limited ICT infrastructure and inconsistent teacher training, as highlighted in studies on VLE implementation (Binothman, 2015), align closely with the difficulties reported by teachers using Classera. These parallels reinforce the importance of addressing both technical and professional development needs in enhancing Classera's impact.

Teacher-level factors play a critical role in the successful adoption of VLEs in schools. Teachers' attitudes towards technology, their level of digital literacy, and their perspectives on teaching and learning all influence whether they will integrate VLEs into their instructional practices. According to Ertmer and Ottenbreit-Leftwich (2010), teachers' willingness to embrace technology is shaped by their perceptions of its usefulness in enhancing student learning and their confidence in using digital tools effectively. Teachers who view VLEs as valuable tools for improving student engagement and outcomes are more likely to adopt them, whereas those who lack confidence in using digital tools may be hesitant to do so. Professional development and training programs are crucial for equipping teachers with the necessary skills to integrate VLEs into their teaching practices. Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) framework serves as a valuable model in this setting. TPACK highlights the importance of combining technological expertise with pedagogical and content knowledge to support meaningful learning experiences. Research suggests that professional development programs should encompass not only technical capabilities but also how these skills can be integrated into broader pedagogical strategies to fully harness the potential of VLEs.

These global insights on VLE effectiveness provide a foundation for understanding how Classera operates in Saudi Arabia. However, distinct challenges such as infrastructural variability and teacher ICT readiness within the Saudi educational landscape necessitate a closer examination of Classera's unique implementation in this context.

Institutional factors, such as infrastructure, leadership, and school culture, also play a significant role in determining the success of VLE adoption. Reliable ICT infrastructure, including high-speed internet, up-to-date hardware, and software support, is essential for ensuring the effective functioning of VLEs. Anderson and Dexter (2005) emphasize the importance of strong leadership in promoting a vision for technology integration within schools. School leaders must not only advocate for the adoption of VLEs but also provide the necessary resources and ongoing support to enable teachers to use these platforms effectively. The culture within a school is equally important. Schools that foster collaboration and innovation are more likely to succeed in integrating VLEs, as these environments encourage teachers to experiment with new technologies and share best practices. Pachler et al. (2009) stress that schools with a strong culture of collaboration create environments in which teachers feel supported in their use of VLEs, increasing the likelihood of successful adoption.

Despite the clear advantages of VLEs, their implementation is often fraught with challenges. Sustaining VLE initiatives over time can be difficult, particularly when external factors, such as changes in government policies, lead to the discontinuation of programs. Many schools also face difficulties in generalizing best practices across different contexts, resulting in limited VLE use and missed opportunities for innovation. Becta (2008) notes that educators often express concerns about the additional workload associated with maintaining VLEs, including moderating online discussions, providing technical support, and adapting teaching materials for online formats. Automated assessments, a common feature of VLEs, are often viewed as less valid than traditional assessment methods, further complicating their adoption. Boulton, Waters (2015) and Ayson et al., (2024) highlight the complexity of teachers' roles in VLE environments, where they are required to act not only as facilitators but also as instructional designers, mentors, and technology coordinators. Ferdig et al. (2009) argue that this added responsibility can overwhelm teachers without adequate professional development and support, underscoring the need for comprehensive, sustained training to ensure successful VLE integration.

In the context of Saudi Arabian education, Classera has emerged as a central platform for integrating VLEs into secondary schools. As part of the national drive to enhance educational outcomes through digital transformation, Classera is a key component of the broader Saudi Vision 2030 initiative. The platform is recognized for its ability to

facilitate communication, resource sharing, and assessment, and its adoption has been met with general approval from educators. However, studies by Binothman (2015) and others have identified ongoing challenges, such as technical issues, insufficient teacher training, and varying levels of student engagement. These challenges mirror broader global trends in VLE adoption and highlight the need for continued investment in infrastructure, professional development, and support to maximize Classera's potential in enhancing educational outcomes.

In conclusion, while VLEs like Classera offer significant opportunities for improving teaching and learning practices, their successful implementation depends on addressing a range of factors at both the teacher and institutional levels. By understanding these factors and providing the necessary resources, educational institutions can leverage VLEs more effectively to enhance student engagement and outcomes, fostering more dynamic and flexible learning environments in the process.

Methodology

This study aims to explore the utilization of VLEs, with a specific focus on Classera, within secondary schools in Saudi Arabia. The primary objective is to gain a comprehensive understanding of the broader educational context, identify both opportunities and the difficulties encountered in implementing Classera, and capture the perspectives of school leaders and teachers. This chapter details the research paradigm, design, context, data collection methods, analysis procedures, evaluation of research instruments, and ethical considerations pertinent to the study.

The study employs a mixed-methods approach, combining qualitative and quantitative methods to offer a detailed view of Classera's utilization. Punch (2009) describes a methodological paradigm as a set of assumptions that shape understanding of the world and the appropriate methods for investigating it. This study combines positivism, which emphasizes the acquisition of objective knowledge through statistical analysis, with interpretivism, which seeks to understand meanings through social interaction and contextual engagement. Johnson et al. (2007) describe mixed methods as a synthesis of qualitative and quantitative research approaches, which offers a comprehensive perspective suited for examining Classera's implementation and understanding the educational context.

Schools were selected to reflect a range of engagement levels with Classera, ensuring a diverse sample that includes varying degrees of adoption and support. Within each school, purposive sampling was used to select teachers across different subject areas and with diverse teaching backgrounds, aiming to capture a broad spectrum of experiences with the platform.

The study was conducted in five female secondary schools located across three regions in Saudi Arabia: Jeddah, Tabouk, and Al Jubail. The selection of schools across diverse regions was aimed at achieving a manageable and bounded sample, representing a range of contexts within the private and international education sectors. This approach was motivated by the goal of capturing varying levels of Classera utilization and understanding the regional differences in technology adoption. Access to the schools was facilitated through recommendations from the Classera director, who suggested institutions with varying levels of Classera development and openness to research. The schools included a mix of private and international institutions, providing a broad spectrum of experiences with the platform.

School A had a high level of engagement with Classera, supported by strong leadership that encouraged frequent use and offered workshops and technical support. School B's teachers used Classera intermittently, with ICT workshops provided weekly. School C faced challenges with limited internet access, leading teachers to use personal routers for connectivity. School D had implemented interactive boards and recognized differences in teachers' ICT skills. School E had a strict policy requiring daily use of Classera, with an IT department monitoring and addressing usage issues. The schools varied in their demographics, with School D and C employing predominantly Saudi teachers, while Schools B and E had a more diverse teacher population. These differences reflect the broader context of private and international schools in Saudi Arabia, which often feature varied curricula and teacher nationalities.

Data collection was executed through a multi-faceted approach that included interviews, observations, and questionnaires. This methodological approach is consistent with previous research on ICT integration in education, which often employs similar strategies (e.g., Gamlo, 2014; Nasser et al., 2011; Binothman, 2015; AL Ghamdi, 2015). The research design encompassed an exploratory phase, followed by a large-scale survey, and was supplemented by interviews and observations to ensure data triangulation and enhance the robustness of the findings. Data collection proceeded in four distinct phases:

The first phase involved preliminary research, including an initial interview with the Classera director. This interview aimed to gather background information about the Classera platform, including its development, objectives, and the range of software offered by the company. The interview questions were structured into four

primary sections: general information about the programme, benefits, take-up, and support. The first section examined the origins of Classera, including its developers' goals, other available software, intended user groups, and future plans. The second section explored the benefits of Classera for learners and teachers. The third section examined the extent of Classera's use in various educational sectors and schools. The final section addressed the support provided to schools, including training courses and difficulties encountered.

The second phase involved administering surveys to 91 secondary teachers across five schools to gather quantitative data on their experiences and perceptions regarding Classera.

The third phase consisted of semi-structured interviews with school heads and selected teachers to obtain qualitative insights into the implementation and impact of Classera. These interviews were divided into four sections: general information about the program, benefits of the program, take-up in various educational sectors, and the support provided to schools.

The fourth phase involved classroom observations to provide contextual understanding of Classera's usage and its effects on teaching and learning dynamics (see Table 1 for more information). The observation framework was organized into three parts: background details (such as school code, observation date, subject, lesson length, and teacher's nationality); ICT infrastructure (available within the school and classroom settings); and lesson structure (stages of the lesson, duration allocated to each stage, ICT tools utilized and materials used). Observations included nine lessons, with two classes per chosen school and three from School C due to its unique circumstances. Four schools permitted observations, while one did not, citing a policy against classroom entry. Observations involved teachers who volunteered, though they might not have been a representative sample. However, they were typical in terms of lesson delivery and use of Classera. Teacher backgrounds included Saudi and one Jordanian, and teachers were assured of the confidentiality and research-only use of their data.

Tab. 1: Data collection techniques applied in this research

Stages	Objectives	Methods	Number of participants
Initial stage	Semi-structure interview used with Classera director to explore more about Classera, reported opportunities and constraints and to identify schools that might participate in the study.	Semi-structure Interview	N= 1
Second stage	Investigating teachers' perspectives towards Classera use, finding patterns in the data.	Questionnaire	N=91
Third stage	Interviewing teachers and their heads	Semi-structure Interview	N of teachers = 14 N of headteachers=5
Fourth stage	Two lessons from three schools and three lessons for one school were observed in order to understand what is going on in the classroom.	Structured Observation	N of classes = 9

Data analysis involved a rigorous approach to handling both quantitative and qualitative data. Quantitative data from surveys were subjected to statistical analysis to identify trends and patterns. Qualitative data obtained from interviews and observations were systematically coded and categorized to extract recurring themes and insights. The analysis utilized specialized software tools for data management and interpretation, ensuring a thorough and methodical approach.

The research instruments, including questionnaires and interview guides, underwent a comprehensive evaluation process to assess their validity, reliability, and trustworthiness. Validity was established through expert reviews and pilot testing, while reliability was measured by the consistency of responses. Trustworthiness was ensured through methodological triangulation and member checking to corroborate findings.

Ethical considerations were integral to the research process, addressing issues such as informed consent, participant confidentiality, and the minimization of potential harm. Ethical approval was obtained prior to data collection, and participants were assured of their rights and the confidentiality of their responses throughout the study.

Analysis

Analysis of both the study's qualitative and quantitative data offers a nuanced understanding of Classera's adoption and impact in Saudi Arabian secondary schools. Data from 91 teachers across five schools revealed important patterns in Classera's use, the support provided to teachers, and the challenges encountered during its implementation. The majority of the teachers surveyed were experienced professionals, with most having used Classera for over a year. This indicates a strong familiarity with the platform, making their insights particularly valuable for evaluating its effectiveness. The analysis of teacher demographics, including age and teaching experience, did not reveal any significant correlations with the use of Classera, but it highlighted diverse engagement levels. While some teachers made full use of Classera's features, others limited their interaction to basic functionalities, such as content sharing. Reported benefits included improved resource sharing and more streamlined communication with students, although technical difficulties and the complexity of the platform were cited as recurring issues.

The frequency of different Classera functions varied significantly. As presented in Table 2, the most commonly utilized features related to information sharing—teachers frequently uploaded homework, presentations, and instructional videos, often using YouTube clips. Fewer teachers engaged with more advanced features, such as recording and uploading lessons, with only 53% indicating occasional use of these functions. Although Classera offered the ability to create and distribute quizzes, these were underutilized, with most teachers choosing to assess students through traditional methods. Communication features, including email and discussion boards, were used less frequently than content-sharing tools, suggesting that teachers prioritized the dissemination of information over interactive engagement. Notably, despite Classera's capacity to facilitate communication between teachers from different schools, this function was rarely employed, indicating potential barriers to cross-school collaboration. Similarly, digital attendance tracking through Classera was seldom used, possibly due to teachers' continued reliance on paper-based methods or the lack of institutional requirements for its use.

Tab. 2: Use of different Classera functions by frequency

Classera use	Always (Every day)	Often (2 or 3 days a week)	Sometimes (once a week)	Total number of teachers who use selected functions every week		Never
Upload videos or films	32	36	14	82	90%	4
Put your own presentations in Classera	9	29	32	70	77%	15
Upload homework in Classera	25	27	17	69	76%	17
Use email or discussion board to communicate with learners	6	21	27	54	60%	30
Record lessons and upload to Classera	17	16	15	48	53%	38
Upload quizzes in Classera	5	15	22	42	47%	40
Discuss with other school teachers through Classera's library	7	7	16	30	33%	55
Monitor attendance through Classera	11	7	12	30	33%	54

The successful implementation of Classera appeared to be strongly linked to the availability of ICT infrastructure. As detailed in Table 3, schools with advanced resources, such as high-speed internet and updated hardware, experienced fewer technical issues and higher teacher satisfaction with the platform. In Schools A, B, and D, internet access was available in both classrooms and computer labs, and students were permitted to use these resources, facilitating smoother Classera integration. In contrast, School C faced significant barriers, with all teachers reporting the absence of internet in both the classroom and computer labs. Teachers in this school were often forced to improvise, using personal modems or borrowing equipment from the administration. School E, although it provided internet access for teachers, restricted learner access, further complicating Classera's adoption. The variance in infrastructure across schools can be attributed to the differing technological policies of school principals. Schools A and B demonstrated a relatively open approach, with several teachers reporting that students could bring personal devices. School D, known for its liberal approach, encouraged more extensive internet use. On the other hand, Schools C and E imposed stricter controls, limiting learner access to technology. These infrastructural disparities played a key role in determining the level of Classera adoption and the challenges faced by teachers.

Table 3: Teachers' views on the availability of ICT resources in schools

Schools cases	Is there an IWB or other display device?	Are there computers for students to use?	Are there computers for teachers to use?	Is there a computer lab for students?	Does the lab have internet access?	do you have access to internet for all computers to use in teaching	Do learners bring in their own multimedia devices?	Do learners allowed to use internet at the school
School A	100	89	89	100	100	100	39	61
School B	91	91	100	97	97	91	37	64
School C	82	73	82	100	9	0	54	9
School D	100	86	100	100	100	100	100	100
School E	100	80	93	93	93	67	7	47
Total	94%	86%	94%	97%	85%	79%	44%	59%

The study also highlighted the significance of professional development and technical support in ensuring the successful integration of Classera. As illustrated in Table 4, the majority of teachers (n=85) reported attending training workshops related to Classera use. While most found these workshops beneficial, a noticeable disparity was observed, particularly in School B, where a significant number of teachers felt that the training provided was insufficient. Teachers who received comprehensive training and ongoing support reported more positive experiences with Classera and were more likely to use its advanced features. This finding underscores the critical role of professional development in fostering effective virtual learning environments (VLEs). Schools that invested in ongoing support and practical training were more successful in integrating Classera into everyday teaching practices.

Tab. 4: Teachers' opinions on training availability for using Classera

Statements	Number of responses					
Have you ever taken training courses in how to use Classera portal?	Yes		No		The schools of the teachers who said no to this question	
	85		4		School A 1	School D 1 School E 2
Who has carried out the training?	School		Classera		Ministry of education	
	48		14		1 23	
How many training sessions did you receive in using Classera?	1-2 sessions		3-5 sessions		6 or more sessions	
	58		25		3 4	
Have you found the training sufficient?	Yes		No		The schools of the teachers who said no to this question	
	71		17		School A 1	School B 13 School C 0 School D 1 School E 2
		Yes		No		
Has the training included a hands-on element?		80		7		
Have you ever observed other teachers using Classera?		37		52		
Has the training addressed your needs?		66		21		
		Strongly agree		Agree		Neutral
The training has been helpful		33		42		10
The training has been comprehensive		33		30		17
The training has focused on developing teaching as well as IT skills		30		33		16
						9
						1 (School. D)

Classera's impact on student engagement was generally viewed as positive, particularly concerning the convenience of access to learning materials and enabling participation in discussions. However, teachers reported that student engagement with more interactive features, such as virtual classes or additional instructional materials, was lower. Students tended to prefer accessing visual content like videos rather than engaging with quizzes or discussion boards. Parental involvement, however, was inconsistent. Some parents were highly engaged, actively supporting their children's use of Classera, while others were less involved. This variation in parental engagement often affected how effectively Classera supported student learning. Parents who actively monitored their children's progress contributed to better outcomes, while less engaged parents left a gap in support.

Teachers generally expressed positive attitudes toward ICT and Classera's potential for enhancing teaching and learning. However, their use of the platform was influenced by their comfort with technology and the level of support they received. Teachers who were more technologically literate integrated Classera more fully into their teaching, while others used it sporadically, limited by their digital literacy and the demands of the curriculum. Table 5 provides further evidence of the positive feedback regarding Classera's functionality, with a majority of teachers agreeing that it saved time, improved communication, and facilitated assessments. Nevertheless, some teachers expressed frustration with the limitations of the platform. Many teachers struggled to find time to thoroughly explore Classera, while others felt that it wasn't relevant to every subject area. Teachers reported varying levels of interaction with Ministry of Education supervisors. Supervisors tended to focus on general ICT use, rather than providing specific guidance for Classera, and their evaluations were often checklist-based, missing the nuanced needs of classroom teaching.

Tab. 5: Teachers' attitudes about Classera

Statements	Strongly agree	Agree	Total of agreements (%)	Neither agree nor disagree	Disagree	Strongly disagree	Total of disagreements (%)
Classera makes learning more effective.	29	44	73 (80)	11	5	1	6 (7)
Classera can help in giving individualised feedback to pupils.	20	43	63 (69)	18	4	2	6 (7)
Classera helps attainment.	20	35	55 (60)	19	9	3	12 (13)
Classera helps me to use a wider range of assessment tasks.	18	34	52 (57)	26	4	3	7 (8)
Using Classera in my teaching saves me time.	10	32	42 (46)	27	15	5	20 (22)
Classera is particularly useful in helping me to support the diverse learning needs of pupils.	12	29	41 (45)	29	13	3	16 (18)
Classera is particularly useful in helping me to support the diverse learning needs of pupils.	12	29	41 (45)	29	13	3	16 (18)
Pupils enjoy lessons more when they use Classera than when they don't.	11	29	40 (44)	34	10	4	14 (15)
Pupils enjoy lessons more when they use Classera than when they don't.	11	29	40 (44)	34	10	4	14 (15)
It is difficult to find the time to try out Classera	9	17	26 (29)	22	29	12	41 (45)
Classera is not relevant for every subject.	6	12	18 (20)	22	30	17	47 (52)
It is easier to find relevant teaching materials in textbooks than on the internet.	6	19	25 (27)	18	28	16	44 (48)

Despite these positive attitudes, the study identified several constraints that hindered the effective implementation of Classera. Table 6 outlines these challenges, which ranged from frequent technical issues and system outages to rigid curriculum requirements and insufficient training. Institutional barriers, such as a lack of clarity in policies and limited support from school heads, further complicated Classera's integration. Teachers also reported that students occasionally resisted using the platform, preferring traditional methods of learning, while limited parental involvement and increased teacher workloads added to the burden. These challenges highlight the complexities of integrating a Virtual Learning Environment (VLE) into existing educational systems and underscore the need for comprehensive, systemic support.

Table 6: Constraints on using Classera

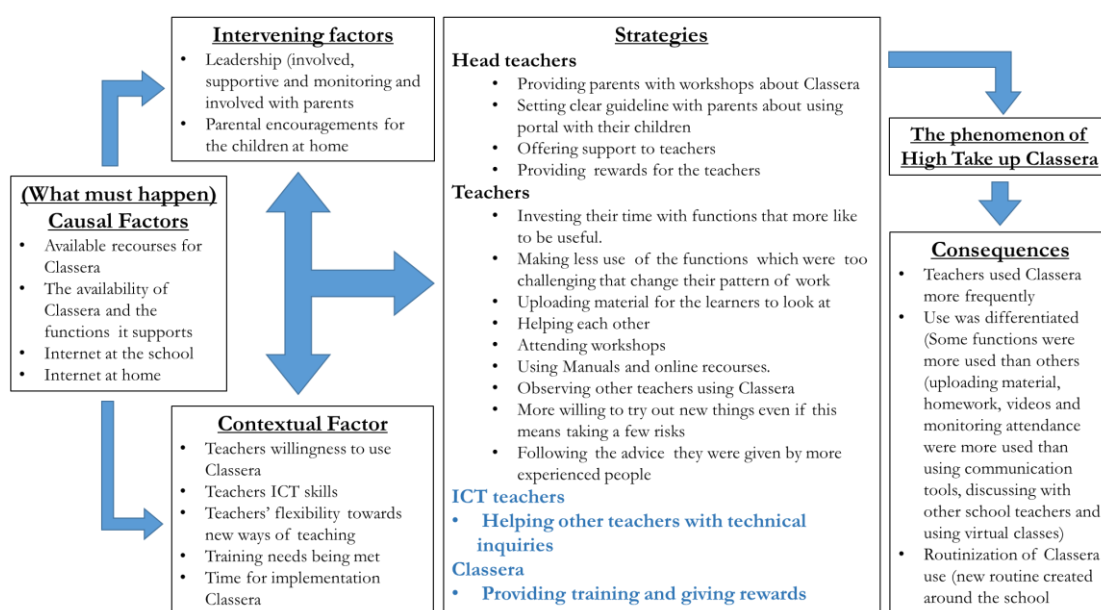
Response	School A		School B		School C		School D		School E		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
The learners don't like using Classera	7	39	5	16	10	91	1	7	2	13	25	32
I find Classera difficult to access in my school	5	28	15	47	9	82	1	7	7	47	37	41
I don't think using Classera is time effective	3	22	1	6	3	27	1	7	3	20	11	12
I don't feel confident using Classera in my lessons	3	17	3	9	1	9	1	7	2	20	10	11
I don't think Classera benefits learners	3	17	2	6	3	27	1	7	1	7	10	11
I find Classera difficult to use	2	11	2	6	0	0	1	7	3	20	8	9
I don't know how to use Classera	2	11	0	0	0	0	0	0	0	0	2	2
I don't know where to find Classera	1	6	0	0	0	0	0	0	1	7	2	2

Overall, while teachers recognized Classera's potential to enhance learning outcomes, its full implementation was hampered by a range of factors, including infrastructure, professional development, and institutional policies. Improving ICT infrastructure across schools, providing clearer policies for Classera use, and offering ongoing professional development opportunities are crucial steps toward optimizing the platform's effectiveness. Addressing these constraints is essential to ensure that Classera becomes an integral part of the learning environment and that its full benefits are realized in Saudi Arabian secondary schools.

Discussion

This study examined VLE's adoption and usage in private and international secondary schools across Saudi Arabia. Utilizing Strauss and Corbin's (1998) grounded theory framework, this discussion interprets the levels of Classera adoption through causal, intervening, and contextual conditions, coupled with the strategies and consequences. These findings are then placed in the broader landscape of educational change and ICT integration.

Fig. 1: The trend of high engagement with Classera
High take-up of Classera



In schools with high adoption rates, several factors emerged as critical to successful Classera integration. Causal conditions—including internet access, hardware availability, and financial support—were fundamental in enabling schools to implement Classera effectively. As per Strauss and Corbin (1998), these "events or happenings that influence phenomena" (p. 131) directly impacted whether Classera could be adopted.

Intervening conditions such as strong leadership and parental acceptance further bolstered adoption. In these high-use schools, headteachers played a pivotal role in encouraging Classera use by offering rewards and conducting workshops for parents. These strategies not only supported teachers but also addressed parental concerns, particularly in conservative contexts that prioritize internet safety (Selwyn, 2007; Njenga & Fourie, 2010).

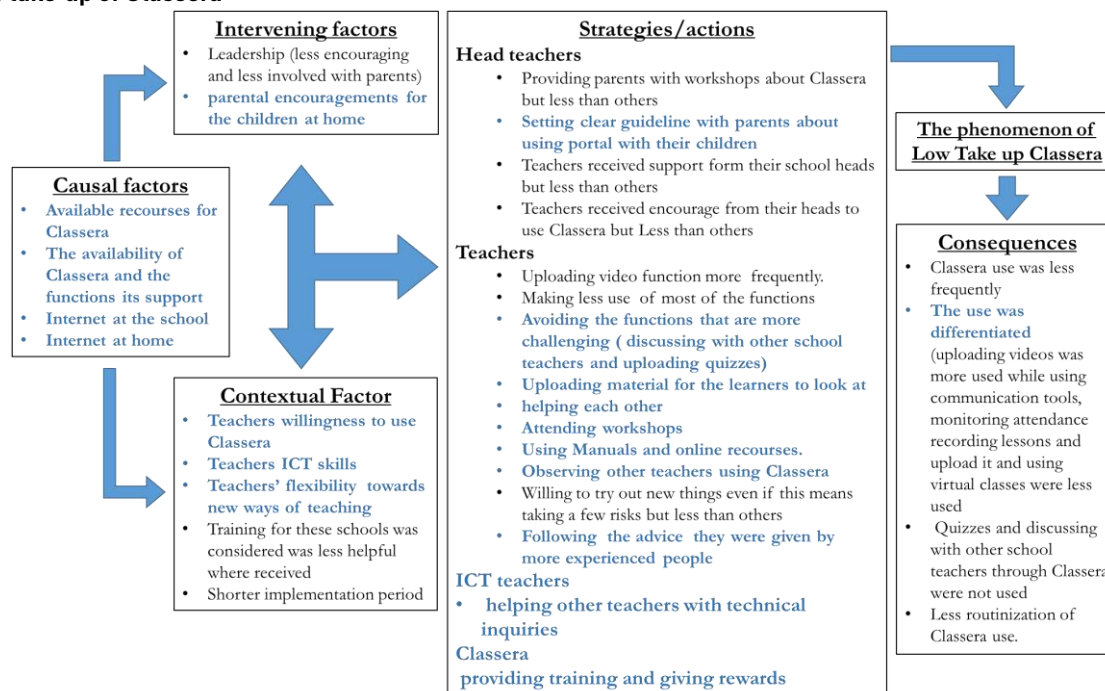
The contextual conditions in these schools were also favorable. Teachers possessed higher ICT skills, were more open to new teaching methods, and benefited from comprehensive training. Furthermore, schools with higher Classera usage had been using the platform for a longer period, allowing for gradual integration into routine practices. This aligns with Fullan's (2015) argument that meaningful educational change—especially concerning ICT—takes time to evolve from initial implementation to long-term integration.

Proactive strategies were employed by both leadership and teachers in high-use schools. Workshops for parents, clear guidelines for Classera use, and teacher collaboration all contributed to successful uptake. Teachers also supported one another by sharing knowledge and attending workshops, although they tended to avoid more complex features of Classera, such as virtual classrooms and data analytics (Garba, 2015; Fisher, 2009).

The consequences of these efforts were a high level of Classera routinization, particularly for basic tasks like uploading course materials. However, while some functions became integral to teaching practices, advanced features like quizzes and discussions remained underutilized.

Fig. 2: The trend of low engagement with Classera

Low take-up of Classera



In contrast, schools with lower take-up faced significant challenges. Although causal conditions such as resource availability were similar to high-use schools, the intervening conditions—especially leadership—were less effective. Leadership in these schools was not as proactive or consistent in promoting Classera use, which resulted in weaker adoption efforts.

In terms of contextual conditions, schools with low Classera adoption had only recently begun using the platform and lacked comprehensive teacher training. This mirrors Fullan's (2015) observation that professional development and sufficient time are key to meaningful educational reform.

The strategies in low-use schools were inconsistent. Workshops for teachers and parents occurred less frequently, and teachers were less likely to experiment with new Classera features, preferring to stick to familiar tools and practices (Watson, 2001; Sun, 2000). Consequently, there was lower frequency of use and less engagement with advanced features.

Educational change and ICT

The adoption of Classera in this study reflects broader debates around ICT and educational change. Early optimists like Papert (1984) viewed ICT as a potential catalyst for revolutionary educational reform. However, studies (Selwyn, 2007; Njenga & Fourie, 2010) have shown that while ICT can enhance learning, implementation often leads to incremental rather than transformative change due to barriers like curriculum constraints and lack of pedagogical innovation.

This study supports these findings. While Classera did improve some aspects of teaching, particularly in terms of task efficiency, it did not foster transformative pedagogical change. Teachers primarily used Classera to support existing practices rather than to explore new, innovative methods (Fullan, 2013). This reflects Fullan's (2015) observation that ICT integration often emphasizes technical usage over deep, curriculum-driven innovation.

Both high and low-use schools showed limited pedagogical shifts, constrained by external factors such as time pressures and administrative tasks. Teachers were often unable to fully engage with Classera's more advanced features due to these constraints, limiting the platform's potential to drive substantive educational reform (Fisher, 2009; Robert, 2015).

Conclusion and future directions

This study highlights the conditions under which Classera was adopted in Saudi secondary schools. High-use schools benefitted from strong leadership, comprehensive training, and parental involvement, while low-use schools faced challenges in these areas. However, the findings also show that despite positive adoption outcomes,

Classera primarily facilitated incremental changes in teaching practices rather than promoting deep pedagogical shifts.

Looking ahead, for schools to maximize Classera's potential, there must be a focus on deeper pedagogical reflection and innovation. Fullan (2013) argues that integrating ICT with learner-centered curricula and innovative teaching strategies is essential to achieving transformative educational reform. Without this shift, Classera risks being used as a supplementary tool rather than as a catalyst for meaningful change in education.

References

- Anderson, R. E., & Dexter, S. (2005). School technology leadership: Incidence and impact. *Educational Administration Quarterly*, 41(1), 49-82. <https://doi.org/10.1177/0013161X04269517>
- André, P. (2023). A model for an effective virtual learning environment (VLE) to support learning analytics of at-risk students. *Advances in Higher Education and Professional Development Book Series*, 68-99. <https://doi.org/10.4018/978-1-6684-7059-6.ch004>
- Becta. (2008). *The Becta Review 2008: Evidence on the progress of ICT in education*. Becta.
- Binothman, W. A. (2015). *Towards greater integration of ICT into the teaching and learning process: A case study of the Saudi Tatweer portal* (Doctoral dissertation). University of Leicester, UK.
- Boulton, H., & Waters, L. (2015). Using virtual learning environments to personalize learning in UK schools: A case study. In T. Clark & M. K. Barbour (Eds.), *Online, blended, and distance education in schools: Building successful programs* (pp. 177-192). Sterling, VA: Stylus Publishing.
- Elmaadaway, N., & Nagy, A. (2018). The effects of a flipped classroom approach on class engagement and skill performance in a blackboard course. *British Journal of Educational Technology*, 49(3), 479-491. <https://doi.org/10.1111/bjjet.12553>
- Ferdig, R. E., Cavanaugh, C., DiPietro, M., Black, E. W., & Dawson, K. (2009). Virtual schooling standards and best practices for teacher education. *Journal of Technology and Teacher Education*, 17(4), 479-503.
- Fisher, L. (2009). Trainee teachers' perceptions of the use of digital technology in the languages classroom. *Foreign Language Learning with Digital Technology*, 12(2), 60-79.
- Fullan, M. (2013). *Stratosphere: Integrating technology, pedagogy, and change knowledge*. Pearson Canada.
- Fullan, M. (2015). *The new meaning of educational change*. 5th edition. Teachers College Press.
- Gamlo, N. (2014). *EFL teachers' use/non-use of ICT*. (Doctoral dissertation). University of Warwick, UK.
- Garba, S. A., Yusuf, B., & Busthami, A. H. (2015). Toward the use of technology and 21st century teaching-learning approaches: The trend of development in Malaysian schools within the context of Asia Pacific. *International Journal of Emerging Technologies in Learning*, 10(4), 72-79. <https://doi.org/10.3991/ijet.v10i4.4717>
- Hammond, M. (2010). What the literature says about continuing professional development and the use of learning platforms in schools and in initial teacher education. Coventry: Becta.
- Jewitt, C., Hadjithoma-Garstka, C., Clark, W., Banaji, S., & Selwyn, N. (2010). School use of learning platforms and associated technologies. Retrieved from http://dera.ioe.ac.uk/1485/1/becta_2010_useoflearningplatforms_report.pdf
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1(2), 112-133. <https://doi.org/10.1177/1558689806298224>
- Joshi, D. (2024). Impact of online learning platforms on student engagement in India. *International Journal of Online and Distance Learning*, 5(1). <https://doi.org/10.47604/ijodl.2436>
- Kenneth, L., Ayson, J. P., Bernardez, A. F., Garcia, V. G., Garlejo, J. R., & Laurentino, J. (2024). Digital divide as a dynamic challenge and a leveraging opportunity: A phenomenological study on seasoned TLE/TVL teachers' adaptive pedagogy. *International Journal of Multidisciplinary Research and Analysis*. <https://doi.org/10.47191/ijmra/v7-i07-11>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Nasser, R., Cherif, M., & Romanowski, M. (2011). Factors that impact student usage of the learning management system in Qatari schools. *The International Review of Research in Open and Distributed Learning*, 12(6), 39-62. <https://doi.org/10.19173/irrodl.v12i6.985>
- Nguyen, T. (2015). The effectiveness of online learning: Beyond no significant difference and future horizons. *MERLOT Journal of Online Learning and Teaching*, 11(2), 309-319.
- Njenga, J. K., & Fourie, L. C. H. (2010). The myths about e-learning in higher education. *British Journal of Educational Technology*, 41(2), 199-212. <https://doi.org/10.1111/j.1467-8535.2008.00910.x>

- Pachler, N., Daly, C., & Turvey, A. (2009). Teacher professional development practices: The case of the Haringey Transformation Teachers Programme. In O. Lindberg & A. Olofsson (Eds.), *Online learning communities and teacher professional development* (pp. 77-95). <https://doi.org/10.4018/978-1-60566-780-5.ch005>
- Punch, K. F. (2009). *Introduction to research methods in education*. Sage.
- Pynoo, B., Tondeur, J., Van Braak, J., Duyck, W., Sijnave, B., & Duyck, P. (2012). Teachers' acceptance and use of an educational portal. *Computers & Education*, 58(4), 1308-1317. <https://doi.org/10.1016/j.compedu.2011.12.026>
- Robert, C. (2015). Pedagogical change in the digital age. *Journal of Educational Technology*, 7(1), 22-34.
- Robert, M. (2015). Challenges in using technology in education: A case study. *Educational Technology Research and Development*, 63(4), 541-562. <https://doi.org/10.1007/s11423-015-9391-4>
- Selwyn, N. (2007). The use of computer technology in university teaching and learning: A critical perspective. *Journal of Computer Assisted Learning*, 23(2), 83-94. <https://doi.org/10.1111/j.1365-2729.2006.00204.x>
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Procedures and techniques for developing grounded theory*. Sage.
- Sun, J., Heath, M., Byrom, E., Phlegar, J., & Dimock, K. V. (2000). *Planning into practice: Resources for planning, implementing, and integrating instructional technology*. Southeast Initiatives Regional Technology in Education Consortium (SEIR*TEC).
- Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review of qualitative evidence. *Educational Technology Research and Development*, 65(3), 555-575. <https://doi.org/10.1007/s11423-016-9481-2>
- Watson, D. M. (2001). Pedagogy before technology: Re-thinking the relationship between ICT and teaching. *Education and Information Technologies*, 6(4), 251-266. <https://doi.org/10.1023/A:1012976702296>