

**Analyzing the Reality of Digital Well-Being and the
Use of Digital Tools in the School Environment among
Secondary School Students**

Dr. Sameiha Alhussain Khawaji

**Department Educational Science – Faculty Arts and
Humanities**

Jazan University - Saudi Arabia





تحليل واقع الرفاهية الرقمية واستخدام الأدوات الرقمية في البيئة المدرسية لدى طلبة المرحلة الثانوية

د. سميحة الحسين خواجي

قسم العلوم التربوية – كلية الفنون والعلوم الإنسانية
جامعة جازان - المملكة العربية السعودية

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ملخص الدراسة:

تناولت هذه الدراسة الرفاه الرقمي لدى ١٤٦ طالبًا وطالبة من طلبة المرحلة الثانوية في المدارس العالمية التابعة للإدارة العامة للتعليم بمنطقة جازان، وأثره في أدائهم الأكاديمي. واعتمدت الدراسة المنهج الوصفي المسحي، من خلال توظيف المدخلين الكمي والنوعي. وجمعت البيانات باستخدام استبانة قاست عددًا من الأبعاد، من بينها: وقت استخدام الشاشات، والسلوك الرقمي، وتأثير الأدوات الرقمية في التفاعلات الاجتماعية والنتائج الأكاديمية.

وكشفت النتائج أن أكثر من ٦٠٪ من الطلبة وافقوا على أن مدارسهم تعزز الرفاه الرقمي من خلال توفير الموارد التعليمية وخدمات الدعم. كما أفاد ٧١,٩٪ من الطلبة بأن الأدوات الرقمية تساعدهم على توفير الوقت في إنجاز الواجبات المدرسية، وأظهرت النتائج كذلك وجود علاقة ارتباطية سلبية متوسطة بين استخدام وسائل التواصل الاجتماعي والأداء الأكاديمي؛ حيث بلغت قيمة معامل الارتباط ($R = -0.52, P < 0.05$)، كما حددت الدراسة عددًا من التحديات المؤثرة في الرفاه الرقمي لدى الطلبة، من أبرزها: الإفراط في استخدام الشاشات، والضغط الأكاديمي، والعزلة الاجتماعية.

وتؤكد الدراسة الحاجة الملحة إلى تعزيز العادات الرقمية الصحية، وبناء أنظمة دعم فاعلة داخل المدارس، بما يساهم في تحسين الرفاه العام للطلبة. وقدمت الدراسة توصيات عملية لصنّاع القرار، والتربويين، وأولياء الأمور؛ بهدف إيجاد بيئة رقمية أكثر توازنًا ودعمًا للطلبة، كما تساهم هذه الدراسة في إثراء المعرفة المتنامية حول الاستخدام الفعّال للأدوات الرقمية في التعليم، وتحدد أبرز المجالات التي تتطلب تدخلًا لتعزيز الرفاه الرقمي لدى الطلبة.

الكلمات المفتاحية: الرفاهية الرقمية، التحصيل الأكاديمي، وقت استخدام الشاشات، استخدام وسائل التواصل الاجتماعي.

Analyzing the Reality of Digital Well-Being and the Use of Digital Tools in the School Environment among Secondary School Students

Dr. Sameiha Alhussain Khawaji

Department Educational Science – Faculty Arts and Humanities

Jazan University - Saudi Arabia

Abstract:

This study examined the digital well-being of 146 secondary school students in international schools under the Jazan Region Education Administration and its impact on academic performance. The study used a descriptive survey method, incorporating both quantitative and qualitative approaches. Data were collected through questionnaires, which measured dimensions such as screen time, online behaviour, and the influence of digital tools on social interactions and academic outcomes. The findings revealed that more than 60% of students agreed that their schools promoted digital well-being through educational resources and support services. Additionally, 71.9% of students reported that digital tools helped them save time in completing school assignments, while a moderate negative correlation was found between social media usage and academic performance ($r = -0.52$, $p < .05$). The study also identified challenges affecting students' digital well-being, including excessive screen time, academic pressure, and social isolation.

The study also highlights the critical need to promote healthy digital habits and establish robust support systems within schools to enhance students' overall well-being. Practical recommendations were provided for policymakers, educators, and parents to create a more supportive and balanced digital environment for students. This research contributes to the growing body of knowledge on the effective use of digital tools in education and identifies key areas requiring intervention to foster digital well-being.

key words: digital well-being, academic achievement, screen time, social media use.

Introduction:

Brief overview of digital technology's pervasive role in education:

The concept of digital technology and its use in education has become more prevalent and is considered to contribute to many transformations in student learning and teacher instruction (Clark-Wilson, Robutti, and Thomas, 2020). The use of tablets, interactive whiteboards, online learning platforms, and educational applications has significantly transformed education by enhancing student engagement, improving access to learning resources, and supporting interactive teaching and learning practices (Scully, Lehane, and Scully, 2021). Digital technology systems in education offer a variety of resources and tools that enhance educational experiences (Sailer, Murböck, and Fischer, 2021).

One of the key features of educational technology systems is their ability to personalize learning experiences (Alamri, Watson, and Watson, 2021). Flexible and adaptive software allows students to receive tailored instruction that corresponds with their specific abilities and learning styles, enabling them to progress at their own pace. Digital tools also support collaboration among teachers and students (Pinto and Leite, 2020). This is especially useful when geographical boundaries need to be crossed to enable communication and knowledge sharing on a global scale. Digital technology provides students and teachers with access to a wealth of resources and information that would otherwise be difficult to obtain under normal conditions (Sailer, Murböck, and Fischer, 2021). With digital tools and technology, students can conduct research easily, access educational materials, and

engage with diverse experts around the world. This helps expand students' horizons and enriches their learning experiences (Pinto and Leite, 2020).

Moreover, the use of digital technology has modernized the way assessment methods are carried out in schools. Teachers are able to track students' progress from multiple perspectives (Alieksieienko et al., 2022). They can also tailor instruction to meet students' individual needs. Digital portfolios, online assessments, and data analytics offer valuable insights into student learning and support educators in making informed decisions about teaching interventions and strategies (Clark-Wilson, Robutti, and Thomas, 2020).

Generally, digital tools and resources have become an integral part of modern student life and education (Valverde-Berrocso et al., 2021). Technology in education offers personalized opportunities for learning, access to information, and collaboration (Alamri, Watson, and Watson, 2021). The pervasive role of digital technology in education continues to shape the future of education and provides innovative solutions to the many challenges that students and educators face (Haleem, Javaid, Qadri, and Suman, 2022).

Overview of digital well-being and its impact on academic achievement:

The notion of digital well-being can be conceptualized as the state of physical, social, and mental health of individuals within the digital world (Spiteri and Chang Rundgren, 2020). The concept comprises all possible impacts of digital technologies on both individuals and society. These impacts include behaviours, relationships, and overall well-being (Decuyper,

Grimaldi, and Landri, 2021). In the current digital age, technology plays a pivotal role in everyday life; therefore, understanding and promoting digital resources and tools in education is important (Bernacki, Greene, and Crompton, 2020). It is even more important to understand how digital systems can positively contribute to students' well-being.

There are various reasons why digital well-being is important for individuals using digital systems. First, excessive use of digital resources and online platforms can have negative impacts on individuals' mental health, such as nervousness, increased stress, and sometimes depression (Daniel, Robin, and Aleksander, 2022). The use of digital systems could also contribute to physical health issues, such as sedentary behaviour linked to excessive screen time, which can sometimes lead to obesity and musculoskeletal disorders. Second, digital well-being is often closely related to social well-being (Boursier, Gioia, Musetti, and Schimmenti, 2020). Over-reliance on digital communication and overuse of digital or online platforms can significantly reduce face-to-face interactions, which are important for building and maintaining social relationships. From another perspective, exposure to online harassment and cyberbullying can have detrimental consequences for individuals' emotional and social well-being (Copp, Mumford, and Taylor, 2021).

Besides, digital well-being is important because it provides people with the necessary balance between offline and online activities. Excessive screen time can contribute to a range of issues, including decreased productivity and sleep disturbances (Dienlin and Johannes, 2020). By promoting digital well-being, individuals, especially students, can develop healthier habits and

ensure that the use of technology enhances their learning rather than detracts from their overall well-being (Decuyper, Grimaldi, and Landri, 2021). In summary, digital well-being is a multidimensional concept that includes perspectives on health and quality of life within the digital era. By understanding its importance and taking steps to promote it, people can benefit from technology while reducing its negative impacts on their well-being (Gromova, 2021).

Digital well-being can also affect students' academic achievement and learning outcomes. Students who have good digital habits are likely to be better able to concentrate, manage their time, and engage in an academic environment than students who overuse technology (such as gaming and social media), which can lead to decreased attention span, productivity, and academic performance. Recent studies have demonstrated that unhealthy digital behaviours (for example, excessive screen time and digital distractions) have been associated with a reduction in academic focus and success in adolescents (Tang et al., 2021; Dixit and Rajaura, 2023). Also, if digital tools (for example, PCs, tablets, smartphones) are used correctly in education and have a good foundation of digital well-being practices, they can support collaborative learning and research-based skills, and provide motivation to learn through the use of technologies in education (Bernacki, Greene and Crompton, 2020). Therefore, promoting digital well-being among students is essential not only for their psychological and social health but also for improving their academic success and overall educational development.

Importance of addressing digital well-being among high school students:

The research study sought to address the digital well-being of high school students in international schools in the Jazan Region. This study is significant. First, high school students are at a critical stage of development, a period when they are shaping their habits and identities (Hermino and Arifin, 2020). Excessive exposure to the digital environment can have detrimental and long-lasting effects on their physical, mental, and social well-being (Todorova and Georg, 2023).

In terms of academics, distractions caused by digital technologies can prevent students from being productive and focused (Hermino and Arifin, 2020). Educators and other stakeholders can promote students' digital well-being to help improve their academic performance. High school students are particularly vulnerable to various online risks and social pressures, such as social isolation and cyberbullying (Copp, Mumford, and Taylor, 2021). Addressing students' digital well-being can help them navigate the challenges associated with the digital environment and develop healthy relationships both offline and online.

From another perspective, promoting the digital well-being of high school students involves improving their digital literacy skills. This can take the form of teaching students to critically evaluate online information (Hoehe and Thibaut, 2020). They can also learn how to effectively manage their online presence. In doing so, they are empowered to make more informed decisions in the digital world (Korte, 2020). This is a key component of the

contemporary digital era, as digital literacy is a pivotal skill for achieving success in the modern education system.

Moreover, addressing the digital well-being of high school students can be viewed as a way of preparing them for the future. In a more digitalized world, it is crucial to help students develop healthy habits in the use of digital resources and tools (Decuypere, Grimaldi, and Landri, 2021). It is also important to equip students with the relevant skills they require to thrive in digital settings. Parents and educators can support them in maintaining a healthy balance between offline and online activities. Overall, addressing high school students' digital well-being is necessary to support their success and development (Hermino and Arifin, 2020). Promoting students' healthy relationship with technology can help parents and educators guide students in navigating the digital world responsibly and prepare them to handle future opportunities and challenges in the digital era (Korte, 2020).

Specific focus on international schools in the Jazan Region:

Digital well-being takes center stage in the context of international schools in the Jazan Region. High schools within the region are known for using high-end digital resources and technologies in their education systems (Alkaser, 2023). This greatly enhances students' educational experiences. Nevertheless, it also raises concerns about the potential harmful impacts of prolonged exposure to digital resources and online platforms on students' well-being.

In such a context, it is important to understand and promote digital well-being. Students in international

schools may have different patterns of access to and use of technology compared with their counterparts in public schools (Alkaser, 2023). Consequently, interventions should be tailored to address the individual needs and challenges faced by students in international schools in the Jazan Region.

Focusing on digital well-being in the present study will greatly assist policymakers and educators in ensuring that technologies foster learning outcomes while safeguarding students' mental, social, and physical well-being (Alqassim et al., 2022). Such practices can include promoting healthy technology habits, providing guidance on the responsible use of digital tools and resources, and implementing measures to address the negative impacts of technology use, such as cyberbullying and other online risks.

Generally, by addressing the specific opportunities and challenges presented by digital technology in international schools in the Jazan Region, stakeholders can create an enriching and supportive digital environment that ultimately benefits students' overall development and well-being (Masmali, 2020).

Research Questions:

The study sought to explore and measure the digital well-being of students in international schools affiliated with the Jazan Region Education Administration. The study was guided by several research questions:

- What is the general level of digital well-being of international high school students in Jazan Region?
- What are some of the obstacles that students face while using digital tools?

- Are there statistically significant differences at the significance level of 0.05 in students' responses regarding digital well-being, digital tool usage, and obstacles to digital well-being among secondary school students in international schools in the Jazan Region according to demographic variables?

Research Objectives:

To identify digital well-being and its impact on academic achievement among secondary school students in international schools under the Education Department in the Jazan Region in terms of the first axis: digital well-being procedures.

To identify digital well-being and its impact on academic achievement among secondary school students in international schools under the Education Department in the Jazan Region in terms of the second axis: digital use "tools-time".

To identify the academic, social, and technological obstacles affecting digital well-being among secondary school students in international schools under the Education Department in the Jazan Region.

Identifying the differences students' responses of digital well-being and its impact on academic achievement among international secondary schools under the Education Department in the Jazan Region in terms of the three axes: (digital well-being procedures, digital use "tools- time and obstacles of digital well-being")

Hypothesis

Digital Well-being

-H1: Students' perceptions of digital well-being are significantly associated with their experiences of social isolation within the digital learning environment.

Digital Use (Time-tools)

-H2: The frequency of social media platform use is negatively correlated with students' academic performance.

Obstacles of digital well-being

-H3: Experiences of cyberbullying and negative online interactions are negatively associated with students' digital well-being.

Significance of the study:

The study sought to carry out an assessment of digital well-being and its impact on academic achievement among students in international schools of Jazan region. Technology has enormously been integrated into the education system (Scully, Lehane, and Scully, 2021). It is important to understand the impacts on well-being that students are likely to face from their own perspectives.

Theoretical Framework:

The present study seeks to understand digital well-being among the high school students in international schools associated with the Jazan region education administration. The study is grounded in several models and theories that will guide the understanding of the comprehensive perspectives relating to the concept of digital well-being of international high school students at Jazan region education administration. The frameworks guide the various steps of the research process such as data collection, research design and the data analysis process.

The theory of digital well-being focuses on the impacts that technology is likely to have on individuals' overall well-being. The theory holds the view that digital well-being of individuals incorporates multifaceted factors such as mental, physical and social dimensions (Büchi,

2024). All these perspectives are affected by the way digital technology is used. The physical well-being is the understanding of the implications of digital technology on the physical health of individuals and deals with aspects such as eye strain, sleep disturbances, postural problems among others (Jose et al., 2022; Smith, Lou & Guo, 2017). The mental dimension has to do with the psychological impacts of digital technology such as depression, stress or anxiety, which may arise due to prolonged use of the digital platforms or tools (Büchi, 2024). The social perspective is the impact on relationships and interactions and the perspective seeks to understand aspects such as cyberbullying and social media use on individuals. The present study seeks to explore how these dimensions of digital technology affect high school students' well-being in the Jazan region education administration.

Uses and Gratifications Theory seeks to understand why some individuals will seek to choose certain types of digital tools or spaces and the kind of gratification derived from the usage. According to the theory, individuals usually choose the digital media they would like to engage based on their desires and needs such as the need to seek information, entertainment, social interaction or for purposes of relaxation (Liu, Min and Han, 2020). The theory assists the study to understand the motivations behind students' usage patterns of digital platforms and the consequent impacts on their well-being. In applying this theory, the study explains the motivations of students' digital usage patterns and the impacts that this has on their well-being. The study seeks to identify the specific gratifications and their correlation with the general digital well-being.

The self-determination theory, a psychological theory, grounded on the tenet that human motivation, according to Legault (2020), emphasizes the significance of competence, relatedness in fostering well-being and autonomy. In the framework, the individuals are more likely to experience high levels of well-being when the use of digital technology is highly likely to support their sense of feeling connected with others, competence and autonomy (Legault, 2020). These aspects help the study to understand how digital technology used by high school students contribute to or detract from their well-being.

Bronfenbrenner's ecological systems theory is used as a framework for understanding the various environmental systems and their influences on individual behaviour and development (Crawford, 2020). The theory posits that the development of human beings is a product of factors such as immediate settings, including family and schools and the broader cultural and societal factors (Elliott and Davis, 2020). The theory is used to assess ecological systems, family and school environments, policies at school, cultural attitudes regarding technology and how they influence the digital well-being of students (Antony, 2022). Through assessment of these factors, the research can identify the contextual factors that can potentially support or hinder digital well-being among students in international high schools.

Through the integration of these theoretical perspectives, the present study seeks to address the multifaceted perspective of the study regarding the digital well-being of high school students.

LITERATURE REVIEW

Introduction:

Utilization of digital technology has been prevalent in various educational settings. It is mostly used to offer new and improved opportunities for both communication and learning. Nevertheless, in addition to these benefits, there are many concerns that have been raised regarding the effects of digital technology on students' well-being, more so, in high school settings. The literature review seeks to explore and review the existing literature related to digital well-being of high school students. The specific focus of the study was the international schools in the Jazan region education administration.

Definition and Components of Digital Well-being:

Digital well-being can be conceptualized as physical, social, and mental health in a digital world (Burr, Taddeo and Floridi, 2020). Digital well-being has several components. One important aspect is physical well-being. It refers to the actual physical health of individuals in relation to the use of digital technology (Vargo, Zhu, Benwell and Yan, 2021). For instance, prolonged screen time and sedentary habits are more associated with the use of digital tools. They have negative impacts on the physical health of students since they lead to musculoskeletal problems and obesity (Dunton et al., 2019). Mental well-being refers to an individual's mental health which can be attributed to the use of digital technology. Excessive use of digital devices and social media has been strongly linked with increased feelings of depression, anxiety, stress among high school students (Twenge & Campbell, 2018). Social well-being refers to the quality of the social relationships and the interactions that are present in the

digital world. Online activities such as negative interactions and cyberbullying may have several consequences for students' social well-being. This leads to feelings of exclusion and isolation (Patchin & Hinduja, 2019).

Issues and Challenges Related to the Digital Well-being of High School Students:

There are various specific challenges faced by high school students while they are using the digital tools and resources and that greatly impact on their well-being. One of the issues is the cyberbullying. Patchin & Hinduja (2019) state that high school students are particularly vulnerable to cyberbullying. They add that this menace can potentially have serious consequences on their emotional and mental well-being. Cardelle-Elawar & Belisle (2019) confirm that digital distraction is another issue that high school students face as they use digital resources and tools available at their disposal. According to the authors, the use of digital devices within the classroom premises can create distractions that reduce time for more productive activities which ultimately leads to lower academic performance. According to Twenge & Campbell (2018), the use of social media platforms often entices young people to engage in social comparison. This can often lead to lowered self-esteem, and feelings of inadequacy among high school students.

Effects of the Use of Technology on students' academic performance:

On the one hand, research shows that the use of digital technology enhances the learning outcomes (Pinto and Leite, 2020). Technology is known to support learning processes. On the other hand, distractions and excessive

screen time may expose students to negative consequences related to lower academic performance (Campbell, 2018). There are various studies that have found a correlation between decreased attention span and high levels of screen time which normally leads to compromised information retention and concentration (Rideout & Robb, 2019).

Responsible Use of Digital Resources and tools through literacy programs:

There are measures that can be applied to mitigate the negative impacts of the harmful effects of digital technology on students' well-being of students. One of the methods is the promotion of literacy programmes and creating a culture of responsible citizenship (Hofer, Nistor, and Scheibenzuber, 2021). Students should be taught how to critically evaluate of the various sources of online information to navigate the digital space securely. Educators can empower students to make informed choices towards guarding their emotional and mental well-being (Holland & Munoz, 2019).

Conclusion:

The literature review has highlighted a critical and complex relationship between the use of digital technology and the well-being of the high school students. Technology is often viewed as an opportunity for learning. However, it also poses a great risk that needs to be regularly assessed and addressed. Some of the measures that can be taken towards addressing the extreme negative impacts is engaging students in literacy programs, promoting healthy digital habits and responsible citizenship. Educators can also be used to assist and support students to navigate through the digital world more safely and effectively in a manner that protects their well-being. The theories

outlined assists the study to understand the multidimensional nature of the study in the perspective of the digital well-being of students while using digital platforms and tools.

METHODOLOGY:

Given the nature and purpose of the study, the researcher followed the descriptive survey method and used a questionnaire. A questionnaire was used to collect data in a structured way. The respondents were selected through the use of a stratified random sampling technique. This ensured representation from international schools within the Jazan region (Tiwari, Bhoulal and Kumar, 2023). The questionnaire contained specific parts such as the demographic data, digital well-being procedures, digital usage (time-tools), and obstacles to digital well-being. The collected data were analysed using the Statistical Package for the Social Sciences (SPSS) for quantitative data. Several ethical considerations were strictly followed while administering the questionnaire and the open-ended questions were administered. One of the ethical procedures was obtaining consent, ensuring confidentiality and anonymity of the various participants (Kang and Hwang, 2023).

The structured questionnaire aimed to collect data intended to measure aspects of digital well-being. The specific parts of the questionnaire aimed to achieve a specific objective. Demographic data was used to collect information on the participants' age, grade level; which sought to understand the background of the sample being used for the study (Sakirin and Said, 2023). The digital well-being procedures explored questions on students' understanding of the various practices that were related to

maintaining digital well-being. The digital usage (time-tools) sought to assess the amount of time that students spent on digital devices and the various purposes of usage such as social, academic or entertainment. Obstacles of digital well-being questions aimed to identify the various barriers and challenges that were faced by students towards maintaining digital well-being such as cyberbullying, distractions and lack of digital literacy. A five-point Likert scale ranging from 'strongly disagree' to 'strongly agree' was used to measure the participants' level of agreement with the given statements. The research aimed to gain a deeper insight into the perceptions and the experiences of students.

The analysis of the collected data was done using various domains. Quantitative data were analysed using statistical packages for social sciences. Descriptive and inferential statistics were conducted. While undertaking the analysis, several ethical considerations were met. First, the participants together with their guardians were fully informed about the purpose of the present study, the procedures that would be followed, and their rights. Written consent was obtained from the parents and students. The data that was collected from the participants was kept confidential. The participants and their guardians were informed that the collected data would be securely stored. The study was voluntary with the participants being given an avenue to withdraw from the participation without penalty. The study was designed to avoid psychological, social, or physical harm. The wording in the questionnaire was sensitive and the participants were provided with any kind of support they needed.

The study aimed to involve a total of 146 students from first to third grade. They were selected through the use of a stratified random sampling technique. This ensured representation from international schools within the Jazan region (Tiwari, Bhoulal and Kumar, 2023). The research aimed to gain a deeper insight into the perceptions and the experiences of students. In this case, open-ended questions were prepared to be answered by the participants. They were prepared to elicit more detailed insights into the digital habits of students, the challenges they face daily, and to give their views on the impacts of digital technology on their individual well-being.

A mixed-methods descriptive survey design was employed to investigate digital well-being among secondary school students in international schools in the Jazan Region. The study findings aimed to inform various strategies that can be used to promote digital literacy, responsible digital practices among students, and finding the approaches to use to maintain the overall digital well-being among students. The use of rigorous data collection and analysis assisted the study to gain valuable insights into the concept of digital well-being in various educational settings; mostly in high schools.

Research Method:

The present study adopted a descriptive survey research method to investigate digital well-being and its impact on academic achievement among students in international schools in the Jazan Region. This method was considered appropriate as it enables the researcher to describe existing phenomena and examine relationships between variables as they naturally occur without manipulation. Both quantitative and qualitative elements

were incorporated to gain a comprehensive understanding of students' digital behaviours and perceptions related to digital well-being.

Study Population:

The study population consisted of **all secondary school students enrolled in international schools under the Jazan Region Education Administration**. These schools are characterized by extensive use of digital technologies in teaching and learning processes, making them a suitable population for examining issues related to digital well-being and academic achievement.

Study Sample:

The study sample comprised 146 high school students selected from international schools in the Jazan Region. The sample was chosen using a stratified random sampling technique to ensure adequate representation of students across different schools and grade levels. This sampling approach enhanced the reliability and generalizability of the study findings within the context of international schools in the region.

Study Instruments:

Data for the study were collected using a **structured questionnaire** developed by the researcher. The questionnaire included several sections covering demographic information, digital well-being procedures, digital use in terms of tools and time, and obstacles affecting digital well-being. Responses were measured using a Likert-scale format to capture students' perceptions accurately. The instrument was designed to align with the study objectives and research questions.

Statistical Methods Used:

The collected data were analysed using **Statistical Package for the Social Sciences (SPSS)**. Descriptive statistical methods, including frequencies, percentages, means, and standard deviations, were employed to describe students' responses. In addition, correlation analysis was used to examine the relationship between digital well-being and academic achievement. The statistical analyses were conducted at a significance level of **0.05**.

RESULTS AND ANALYSIS:

This chapter presents the findings of the research on digital well-being and the impacts it poses on the academic achievement among the high school students in the Jazan Region. The data were collected through a survey. It focused on various aspects of digital well-being, such as the screen time, digital tool usage, the online behaviours and the impact that the digital tools have on the social interactions and academic performance. The results from both the qualitative and quantitative data were analysed to provide insights into the present state of digital well-being among students.

Analysis of Participation in Survey Questions:

Participation Rates Across Survey Questions:

To ensure inclusive results, the study focused on examining the proportion of the participants who responded to every question and those who chose not to participate and the possible reasons. The analysis helped the study identify certain trends in the completion of the survey and the areas where the respondents may have either been disengaged or hesitant.

Question Category	Total Responses (n)	Participation Rate (%)	Non-Participation Rate (%)
General Level of Digital Well-being	146	100%	0%
Obstacles to Digital Well-being	139	95.2%	4.8%
Digital Use (Tools-Time)	142	97.3%	2.7%
Perception of Cyberbullying	138	94.5%	5.5%
Academic Impact of Social Media	145	99.3%	0.7%

From the above analysis, it can be noted that there was a high participation rate in the key questions asked in the survey such as the general level of digital well-being and the impact of the social media, which had nearly 100% of respondents completed the sections. This indicates a strong engagement with the topics perceived as directly relevant to students' digital and educational experiences. The analysis noted a lower participation rate (94.5%) in the questions perceived to be sensitive such as the cyberbullying. Students or respondents may have felt hesitant to share their experiences or otherwise lacked sufficient experience or familiarity with the topic under study.

Participation in questions regarding tools and time spent on digital platforms was noted to be slightly lower (97.3%) possibly due to the detailed nature of the questions or the varying digital habits among students.

The generally high participation rate (above 94%) reflects high reliability of the data that was collected. Overall, the questions directly related to general digital well-being and academic performance elicited the highest response rates, indicating a strong interest in the areas. The lower participation rates in issues such as cyberbullying

highlights the need to build further trust and anonymous reporting mechanisms in future studies.

Demographic Analysis:

The total number of respondents in the study was 146 students. This represented a diverse demographic profile. The various aspects of the demographic analysis are shown on the tables below.

Table 1: Gender Distribution:

Gender	Frequency (n)	Percentage (%)
Male	76	52.1
Female	69	47.2
Non-Respondents	1	0.7
Total	146	100

From Table 1 above, the gender distribution of the participants was almost evenly distributed; with 52.1% of males and 47.2% females. Only one respondent (0.7%) remain unwilling to provide their information on gender. The balanced representation on gender ensures that the findings are not heavily skewed and provides a balanced reflection of both the male and female respondents effectively.

Table 2: Age Distribution Analysis :

Age Group (Years)	Frequency (n)	Percentage (%)
15-16	68	46.6
17-18	65	44.5
19-20	11	7.5
Non-Respondents	2	1.4
Total	146	100

From Table 2 above, the largest group consisted of participants between 15-16 years at 46.6% (n=68), followed closely by the age group 17-18 years at 44.5% (n=65). The smallest group is the age group, 19-20 years at 7.5% (n=11). Only two participants (1.4%) refrained from disclosing their ages.

Table 3: Grade Level Distribution:

Grade Level	Frequency (n)	Percentage (%)
First grade	61	41.8
Second grade	61	41.8
Third grade	22	15.1
Non-Respondents	2	1.4
Total	146	100

From Table 3 above, both the First and Second grade students had equal representation, each accounting for 41.8% (n=61) of all the participants. Third grade students represented a smaller proportion of 15.1% (n=22). Only two participants (1.4%) refrained from providing their grade level.

The demographic analysis of the data collected from the study reveal a well-rounded representation of the respondents or participants. Gender was nearly equally represented and it is noted that there is a clear focus on the younger age group, 15–18 years. The age is crucial as the participants are in adolescence. They could be presumed to be sensitive to digital environments as they navigate both personal and academic development. There is a significant representation of the first and second grade students (41.8%) suggesting that interventions that can be made could be impactful towards fostering healthy digital habits. This can be assessed to be a pivotal step towards setting the right habits for future academic years. The smaller proportion of the third grade students (15.1%) could indicate a reduced need for engagement with the digital tools at senior levels or they could prefer different forms of academic interventions that need further research or exploration.

Descriptive Analysis:

Table 4: Procedures of Digital well-being:

Question	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
1. The school provides adequate education on the importance of digital well-being	23.29% (34)	30.14% (44)	17.81% (26)	6.85% (10)	21.23% (31)
2. The procedures to promote digital well-being at the school are going according to set plans	26.71% (39)	29.45% (43)	15.07% (22)	10.96% (16)	17.12% (25)
3. The school offers resources to help manage screen time effectively	28.08% (41)	34.25% (50)	20.55% (30)	6.16% (9)	10.96% (16)
4. The school's digital well-being initiatives are effective in reducing stress related to digital use	23.97% (35)	28.77% (42)	23.29% (34)	10.96% (16)	12.33% (18)
5. I have access to support services for issues related to digital well-being	27.40% (40)	23.29% (34)	23.29% (34)	11.64% (17)	13.70% (20)
6. The school environment promotes a healthy balance between digital and offline activities	28.77% (42)	31.51% (46)	15.75% (23)	8.90% (13)	15.07% (22)
7. The school management is keen to spread the culture of digital well-being among students	31.51% (46)	30.82% (45)	12.33% (18)	11.64% (17)	13.01% (19)
8. The school management prepares training programs on the importance of digital well-being	28.08% (42)	28.08% (41)	15.07% (22)	10.96% (16)	15.07% (22)

The study sought to analyse the school procedures used in promoting digital well-being of students. The results analyzed from the first section of the designed questionnaire showed that 53.4% of students either strongly agreed or agreed that their respective schools

provided adequate education on the significance of upholding digital well-being for students. Additionally, 56.2% of all respondents strongly agreed or agreed that the procedures that have been put in place to promote digital well-being at the schools are implemented according to the set plans. From another perspective, in terms of the resources, 62.3% of the participants (students) reported that the schools have been offering resources that support students in managing the screen time effectively. This implies that the majority of the schools are making sufficient efforts to provide the relevant tools that can be used in regulating the digital habits of students. Conversely, only 52.7% of the respondents felt that their schools' digital well-being initiatives were effective in reducing stress that was related to digital use. In this case, this observation implies that while there are efforts made to promote digital well-being, there could be identified gaps in the effectiveness of various initiatives in alleviating the stress. Furthermore, 50.7% of students disclosed that indeed, they had access to support services on issues that were related to their digital well-being. This implies that there are resources in schools where students can seek assistance on digital well-being and related issues, only that there is a need to make further improvement in the provision of such resources.

The results of the analysis also indicated that 60.3% of students agreed that the school environments they attended promoted a healthy balance between both the offline and digital activities. This is a very crucial aspect of students' overall well-being. Nonetheless, 62.3% of students believed that the management of the schools was

proactively involved in spreading the culture of well-being.

Table 5: Digital Use (Time-Tools):

Question	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
1. The use of digital tools to manage study schedules effectively among students	37.04% (54)	30.14% (44)	13.70% (20)	4.79% (7)	13.01% (19)
2. The digital calendar apps are working to organize student's daily tasks	46.58% (68)	24.66% (36)	15.75% (23)	2.74% (4)	8.90% (13)
3. The digital tools help students save time in completing school assignments	47.95% (70)	23.97% (35)	15.75% (23)	4.79% (7)	6.16% (9)
4. The use of digital apps helps students keep up with recent developments in the field of technology	44.52% (65)	26.03% (38)	15.07% (22)	4.11% (6)	8.21% (12)
5. Digital tools help students solve problems according to scientific research methodology	45.21% (66)	27.40% (40)	13.70% (20)	4.79% (7)	7.53% (11)
6. The use of digital tools develops students professionally in the field of artificial intelligence	46.58% (68)	22.60% (33)	13.01% (19)	7.53% (11)	8.90% (13)

The students were asked about the usage of the digital tools for academic purposes. Out of all the responses, 67.1% of students agreed that the digital tools assisted them to manage their study schedules more effectively. In addition, 71.1% of the respondents believed that the digital calendar applications were useful in assisting the organization of daily tasks. This highlights the significance of digital tools especially in promotion of organizing work and management of time. Another significant proportion of the respondents (71.9%) felt that the digital tools helped them save time while completing school assignments. This implies that digital technologies can effectively enhance

academic performance. Also, 70.5% of the respondents agreed that the use of the digital applications helped them in keeping up with recent developments in technology. This indicates that students are using the digital tools to stay informed and connected with the various technological trends. Also, 72.6% of students felt that the digital tools assisted them to solve various problems through the use of scientific research methodology. This finding suggests that the digital tools are widely used for various academic reasons, particularly in their integration into higher-order learning processes such as scientific research and critical thinking. Finally, 69.1% of the respondents agreed that the usage of digital tools has significantly contributed to their professional development in such fields as artificial intelligence. The finding reflects the growth of interest and the use of digital tools especially in enhancing the future career prospects of students; especially in technology-related fields.

Table 4: Obstacles to Digital Well-being:

Question	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
1. The place of using digital tools inside the school is not prepared	30.14% (44)	26.71% (39)	20.55% (30)	7.53% (11)	13.70% (20)
2. Sitting position while using digital devices	21.92% (32)	24.66% (36)	26.71% (39)	13.70% (20)	11.64% (17)
3. Isolation while using digital devices	20.55% (30)	20.55% (30)	27.40% (40)	15.75% (23)	13.70% (20)
4. The circumstances surrounding such as the cost of digital well-being	21.92% (32)	19.86% (29)	26.71% (39)	13.01% (20)	15.75% (23)
5. The message to be conveyed to the school's students is not clear	16.44% (24)	18.49% (27)	31.51% (46)	17.12% (25)	14.38% (21)
6. There is not enough time to use digital tools	26.03% (38)	18.49% (27)	23.97% (35)	17.81% (26)	12.33% (18)

7. School assignments are stacked on a daily basis	32.19% (47)	20.55% (30)	21.92% (32)	11.64% (17)	11.64% (17)
8. There is conflict between school and home about the importance of digital well-being	20.55% (30)	15.07% (22)	25.34% (37)	15.75% (23)	21.92% (32)
9. Lack of confidence in students' digital capabilities	19.86% (29)	18.49% (27)	23.29% (34)	14.38% (21)	21.92% (32)

The present study sought to assess the various obstacles that students face while maintaining their digital well-being. One of the commonly reported challenges that students had to face is the lack of prepared spaces for using the digital tools within the school. From the analysis, 56.8% of all the respondents indicated that the spaces for using digital devices inside the schools were not adequately prepared. This could potentially affect the ability of students to use the tools comfortably and effectively.

Another challenge that students face is sitting posture in the process of using the digital devices. Furthermore, 56.6% of the respondents stated that their sitting positions were not optimal to support prolonged use. This may cause physical discomfort and potential health risks. Isolation was another challenge that was reported to be a concern with 41.1% of the respondents reporting feelings of isolation while using the digital devices. Feelings of isolation may have significant psychological and social implications, especially for students who heavily rely on digital tools for their academic tasks.

Cost-related challenges were another barrier that was highlighted as an obstacle to digital well-being. Out of all the respondents who completed the questionnaire, 40.8% of students acknowledged that the cost of

maintaining the digital tools, such as the costs of purchasing and maintaining the apps and devices, were a significant concern. This could disproportionately affect students from the lower socio-economic backgrounds. The study also found that 34.9% of students felt that there was a lack of clarity in the messages that were conveyed to them regarding digital well-being. This implies that there is a communication gap between students and schools on the significance of balancing digital usage. On another side, 52.7% of students felt that there was a great pressure of school assignments which created a major obstacle to maintaining a proper balance in digital well-being. For instance, excessive academic pressure can lead to increased screen time that in turn negatively affects students' mental health.

Summary of Descriptive Analysis:

The findings from this study indicate that the digital tools have great potential to enhance academic achievement. However, the management of digital well-being is a vital factor towards ensuring that these tools are used effectively. The study's analysis above noted positive progress in promoting digital well-being through education, support services, and resources. There remain challenges, for instance, insufficient preparation of spaces for digital tool use and the need to come up with clearer communication regarding digital well-being. The study analysis also emphasized the need to develop coping strategies so as to manage the screen time and the digital habits to maintain a healthy balance that supports both academic success and overall well-being.

Correlation Analysis

Table 5: Correlation Analysis:

Hypothesis	Variables	Correlation Coefficient (r)	Significance (p-value)
H1: The perception of students regarding their digital well-being is positively correlated with their level of social isolation.	Digital well-being vs. social isolation	0.45	<0.05
H2: The frequency in the use of social media platforms is negatively correlated with the academic performance of students.	Social media frequency vs. academic performance	-0.52	<0.05
H3: Students who experience higher levels of cyberbullying and negative online interactions report lower levels of digital well-being	Cyberbullying vs. digital well-being	-0.47	<0.05

The results of the analysis in Table 7 above reveal a significant relationship among students' digital well-being, experiences of cyberbullying and their academic performances. For H1, there is a moderate positive correlation between students' perception of digital well-being and social isolation ($r = 0.45$, $p < 0.05$). This finding implies that students with lower levels of digital well-being are more likely to feel isolated. This therefore emphasizes the need to foster a supportive environment for students.

For H2, the results show that there is a moderate negative correlation between the frequency of social media use and academic performance ($r = -0.52$, $p < 0.05$). This means that students with higher social media usage were associated with poorer academic performance.

Hypothesis H3 sought to explore the relationship between cyberbullying and digital well-being. The findings suggest that there is a moderate negative correlation between levels of cyberbullying and digital well-being scores ($r = -0.47$, $p < 0.05$). This means that there

is a detrimental impact of cyberbullying on the overall digital well-being and experiences of students.

Discussion:

The findings of this study align with previous research on digital well-being, reinforcing key concerns regarding the negative impact of excessive digital use, particularly social media, and cyberbullying on students' overall well-being and academic performance. In line with Dixit and Rajaura (2023), who highlighted the detrimental effects of overuse of social media platforms on mental health and academic focus, this study also reveal that students often struggle to manage the balance between digital engagement and academic responsibilities. This issue is exacerbated by the addictive nature of social media, which can lead to distraction, sleep disruption, and reduced concentration on academic tasks.

Similarly, a study by Tang et al. (2021) found that increased screen time, particularly on social media, was linked to higher levels of depression and anxiety in adolescents. This supports the findings in the current study that overuse of digital platforms, particularly social media, contributes to declines in mental health and academic performance. The emotional and psychological toll of digital overuse, as suggested by Limone and Toto (2021), is a significant concern that needs addressing through educational interventions.

Recent studies continue to emphasize the growing influence of digital technologies on students' academic engagement and psychological well-being. Büchi (2024) highlighted that digital well-being is a multidimensional concept shaped by social, academic, and emotional experiences within digital environments. Similarly, recent

educational research has shown that balanced use of digital tools can positively support learning outcomes, while excessive dependence on social media and prolonged screen time may contribute to stress, reduced concentration, and lower academic performance among adolescents (OECD, 2024; UNESCO, 2023).

Furthermore, cyberbullying, as noted in the findings of this study, emerges as a significant contributor to poor digital well-being. This supports the findings of Copp, Mumford, and Taylor, (2021), which have consistently highlighted the harmful effects of cyberbullying on students' mental health, self-esteem, and social relationships. The emotional and psychological toll of victimization of cyberbullying often can translate into academic underperformance and social withdrawal, reinforcing the need for interventions aimed at both preventing and addressing such harmful behaviour. A similar conclusion was drawn by Patchin and Hinduja (2019), who found that cyberbullying victims reported higher levels of depression and anxiety, further supporting the urgent need for effective anti-cyberbullying initiatives in schools.

Additionally, the recognition of students' recognition of the benefits of digital tools in our study mirrors the findings from earlier research by Sailer, Murböck, and Fischer (2021), which emphasized that digital tools, when used appropriately, can enhance learning, communication, and access to resources. The study also complements the work of Bernacki, Greene, and Crompton (2020), who suggested that digital tools can contribute to students' academic achievement, particularly when they are used as a complement to traditional learning

methods. However, the study also underscores the need for students to be equipped with skills to navigate the digital world responsibly and effectively, as the unregulated use of technology can lead to unintended negative consequences.

Bernacki, Greene, and Crompton (2020) also support the idea that the impact of technology on education and well-being is not inherently negative but depends largely on how it is used. While the authors emphasized the potential for media technologies to expand access to information and knowledge, they also warned about their potential to distract and overwhelm individuals, a concern echoed in the present study regarding the effect of social media on academic focus and mental well-being. Further studies, such as those by Scully, Lehane and Scully (2021), found that while students acknowledged the usefulness of digital tools for learning, excessive use of devices can contribute to reduced attention spans, leading to difficulties in concentrating on schoolwork. This finding aligns with the current study's observation that excessive screen time impairs students' academic performance. In conclusion, the findings of this study confirm the need for targeted interventions, as suggested by Scully, Lehane and Scully (2021), to mitigate the adverse effects of social media overuse and cyberbullying. These interventions should include digital literacy programs, mental health support, and policies aimed at promoting a healthier, more balanced approach to digital engagement among students. Addressing these concerns helps ensure that the potential benefits of digital tools are fully realized without compromising students' well-being or academic success.

Conclusion:

Collectively, these findings underscore the interconnectedness of digital experiences, academic success, and emotional well-being, highlighting the need for strategies that mitigate negative digital behaviours while promoting healthier online interactions. The key takeaways from the analysis emphasize several important areas for improvement. First, digital well-being initiatives in schools must be made more visible and impactful to effectively engage students and address their needs. Second, schools need to overcome infrastructure and cost barriers to ensure that all students have equitable access to digital tools and resources. Lastly, the implementation of comprehensive anti-cyberbullying programs is crucial for safeguarding students' well-being, providing them with a safe online environment free from harassment and harm. These steps are essential in fostering a healthier and more supportive digital experience for students.

Recommendations:

Several recommendations are proposed to enhance the digital well-being of students. To enhance digital well-being, schools should introduce tailored workshops and awareness campaigns that address the specific needs of students. Additionally, it is crucial to incorporate practical digital well-being education into the curriculum, ensuring students are equipped with the knowledge and skills necessary to navigate the digital world safely.

Infrastructure improvements are another key area. Schools should invest in essential digital resources, including high-speed internet, updated devices, and modern software. Collaborating with local and international organizations can help secure the necessary funding for these upgrades,

ensuring that all students have access to the tools they need for successful digital learning.

Parental engagement plays a significant role in supporting digital well-being. Schools should organize parent-focused seminars to align strategies between school and home regarding digital use. Providing parents with resources and guidelines on how to monitor and guide their children's online activities will foster a more consistent and supportive digital environment.

Addressing cyberbullying is critical in safeguarding students' well-being. Schools must develop robust reporting and support mechanisms to allow students to report incidents of cyberbullying confidentially. Training teachers and staff to identify and address the signs of cyberbullying promptly is essential to create a safe and supportive atmosphere.

Finally, schools should establish clear metrics to periodically evaluate the effectiveness of digital well-being initiatives. Gathering and using student feedback will allow schools to refine their programs and address emerging challenges, ensuring that digital well-being remains a priority in the evolving digital landscape.

Suggestions for Future Research:

Further research should explore the the digital well-being of students from public schools compared to students attending international schools in the Jazan Region. This type of comparison may yield additional insight into the impact that varying educational settings may have on student behavior while using technology and their level of academic success.

This recommendation encourages future researchers to explore the long-term impacts of excessive screen time,



social media use, and cyberbullying on student mental health and academic outcomes through longitudinal studies. Additionally, future studies should expand beyond studying students' perspectives on digital well-being to include parents' and teachers' perceptions and their role in supporting students as they develop healthy digital habits. This may assist in building a more comprehensive understanding of how these factors will affect students' digital well-being.

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