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**Examining the effects of screen time on psychological well-being and learning efficiency: A growing Concern**Dr Muhammad Rehan<sup>1</sup>, Adeel Ahmad Aamir<sup>2</sup>, Sophia Shafiq<sup>3</sup><sup>1</sup> Assistant Professor, Media Science Department Iqra University, [muhammad.rehan@iqra.edu.pk](mailto:muhammad.rehan@iqra.edu.pk)<sup>2</sup> Assistant Professor, Department of Mass Communication, Forman Christian College (A Chartered University), [adeelaamir@fccollege.edu.pk](mailto:adeelaamir@fccollege.edu.pk)<sup>3</sup> Visiting Lecturer, Department of Media Studies, Bahria University Islamabad | Manager International Media at NDMA, [Sophia.shafique@gmail.com](mailto:Sophia.shafique@gmail.com)**Abstract:**

The rapid increase in screen time among young individuals has raised concerns about its effects on psychological well-being and learning efficiency. This study investigates the significant impact of screen time on these two critical aspects. Grounded in the Uses and Gratifications Theory (UGT) and Cognitive Load Theory (CLT), the study explores how excessive screen use may impair mental health and cognitive functioning. A total of 234 young individuals were surveyed using a structured questionnaire, measuring three variables: screen time, psychological well-being, and learning efficiency. Convenience sampling was used to gather data from respondents. The results were analyzed using correlation and regression analyses. The correlation matrix indicated a significant negative relationship between screen time and both psychological well-being ( $r = -0.52$ ,  $p < 0.01$ ) and learning efficiency ( $r = -0.47$ ,  $p < 0.01$ ). Furthermore, regression analysis showed that screen time significantly predicted psychological well-being ( $B = -0.52$ ,  $p < 0.001$ ,  $R^2 = 0.27$ ) and learning efficiency ( $B = -0.47$ ,  $p < 0.001$ ,  $R^2 = 0.22$ ). These findings highlight the detrimental effects of prolonged screen exposure on both emotional health and cognitive performance. The study's implications suggest the need for balanced screen time management, particularly in educational and home settings. It advocates for public health interventions that raise awareness of the potential risks associated with excessive screen use. Future research should explore long-term effects and different types of screen activities to provide more tailored guidelines for healthier digital habits.

**Keywords:** screen time, psychological well-being, learning efficiency, young individuals, digital media, cognitive performance, emotional health

**Introduction**

The increasing pervasiveness of digital media has been influenced our daily lives. Similarly, screen time in daily life has raised concerns for our children, students and youth about its impact on psychological well-being and learning efficiency. With dependence on digital devices in learning, communication, and entertainment, human being spends more and more time with the screens. This is why it becomes necessary to find out the repercussions that such screen time can have on cognition and affect. Significant research has been done comparing the more hours spent on screen, less the psychological state change, such as the state of anxiety, depression, and emotional negativity. For example, it has been reported that countries with high amounts of media use

demonstrate lower psychological wellbeing, the included signs are less curiosity, and lower self-assertion, ineffective impulse control, and poor ability of making friends (Twenge & Campbell, 2018). This becomes even more important for children and the adolescent since their brain is in development stages.

Another area of concern is, therefore, the correlation between the time spent on screen and the level of learning accomplishment. It has been postulated that excess screen time contributes to deficient learning, memory loss, and poor academic achievement (Neophytou et al., 2019). The experimental evidence contained in this article links excessive screen use for entertainment purposes with reduced ability to sustain attention, and a decline in the capacity to multitask, which is vital for learning. Additionally, desk time or sitting in front of screens increases and when related with violence or fast-moving media content the receptors triggering the dopamine production can cause behaviors responsible for attention-deficit disorders (Lissak, 2018). On the other hand, some articles raise some specific interactivity screen uses like those uses pertaining to learning educational applications or the content with a purpose of enriching learning end up having positive impacts thus meaning that not all screen time is definitely bad for students.

Given these mixed findings, it is essential to discern not only the quantity of screen time but also the quality of content consumed. Additionally, parental mediation and structured screen time are factors that can buffer negative outcomes, ensuring that children and adolescents benefit from screen use while minimizing risks to their psychological health and academic success (Rabbani et al., 2022). Understanding the nuanced effects of screen time on both mental health and learning efficiency can inform guidelines to help manage its impact in a rapidly digitizing world.

### **Objectives:**

1. To examine the significant impact of screen time on psychological well being
2. To examine the significant impact of screen time on learning efficiency

### **Literature review:**

With increasing recognition that excessive screen time is a factor affecting psychological well being. People need to know how bad it is, how many studies have found the effects of prolonged exposure to screens, no matter if it's watching television, or playing video games, or online communication. A Twenge and Campbell (2018) study found a major correlation between increased screen time and increased psychic anxiety and depression in adolescents. Like screen addiction, which is associated with excessive use of mobiles and computers, it is also increasing the stress levels and sleep disturbance that emotionally deteriorates (Lemola et al., 2015). There has also been a link drawn between continuous use of digital devices and emotional dysregulation and social isolation, substituting in place face to face interactions by online communication (Shakya & Christakis, 2017). These findings suggest restricting screen exposure in particular for adolescents may help improve emotional health and decrease anxiety.

In addition to psychological well-being, learning efficiency of students and young generation is also affected with longer screen time. Extended exposure to digital devices may hamper cognitive processes required for effective learning. Uncapher and Wagner (2018)'s study shows that shifting from one screen that involves social networks and other related tasks, affects the ability to concentrate and recall information. This 'digital interruption' limits students' ability to appreciate and assimilate intricate information and employ judgment as well as analysis (Carrier et al., 2015). Secondly increased usage of screens before sleep affects sleep which in turn affect memory consolidation and cognitive functions (Levenson., 2017). Hence, though they provide education

resources of great importance through the device, they at the same time act as an educational degrader or a cause of learning interruption if applied or managed inappropriately.

### Theoretical framework

In the Use and Gratification Theory (UGT) and Cognitive Load Theory (CLT) based theoretical framework the effects of screen time on psychological wellbeing and learning efficiency is considered. According to UGT (1973), individual use media should serve to satisfy some psychological or social needs (e.g. entertainment, social interaction, information). But these needs can be met out of proportion to others on screen, leading to maladaptive behaviors: social isolation and anxiety (Shakya & Christakis, 2017). This framework can explain why people put on excessive amount of time on screen, and can lead to negative mental health outcomes.

However, the capacity of working memory is limited according to CLT, and cognitive processing is impaired when working memory is overloaded with multiple streams of digital information (multitasking) (Sweller, 1988). Screen time is distracting and this theory explains why it makes kids less efficient at learning. Students find it difficult to remember something if they're distracted with digital distractions (Uncapher & Wagner 2018). Taken together, these theories led a foundation for thinking about and explaining how and why screen time affects both mental well-being and learning.

On the basis of above following hypotheses are formed as mentioned below:

H1: There is a significant impact of screen time on psychological well being

H2: There is a significant impact of screen time on learning efficiency

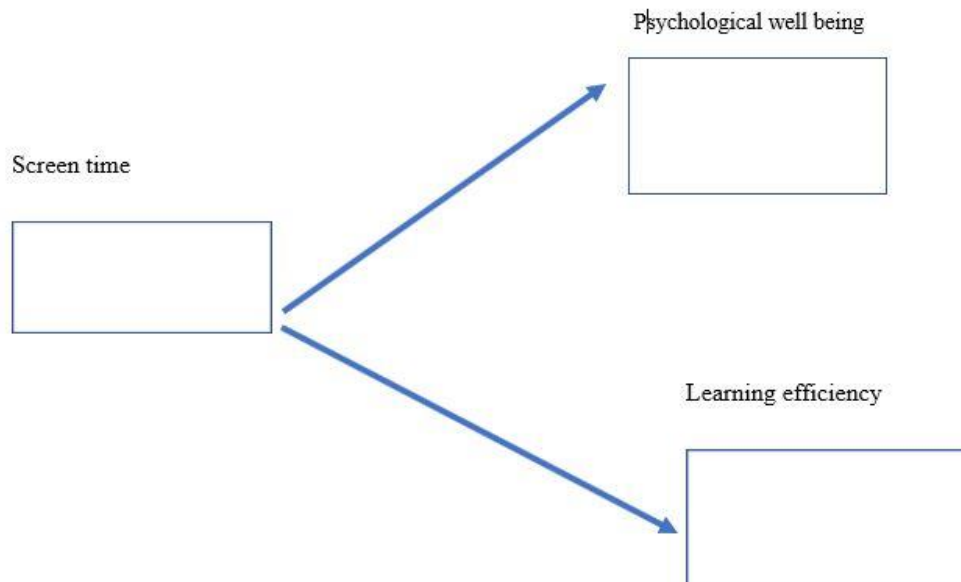


Figure 1 : Research Model

## Methodology

This study has adopted the survey technique as the study is quantitative and experimental. Data of the study is collected from young individuals as a target population with number of 234. convenience sampling has been used, and to get the samples from respondents. The questionnaire was designed to measure three variables: screen time, psychological well-being, and learning efficiency. Screen time was assessed using five items, focusing on the duration and usage of screen devices (Twenge & Campbell, 2018). Psychological well-being was measured with five items assessing emotional health and social isolation caused by screen time (Lissak, 2018). Learning efficiency was evaluated using five items that examined the impact of screen time on focus, concentration, and academic performance (Neophytou et al., 2019).

## Results and Discussion

The demographic profile of the participants ( $N = 234$ ) reveals a near-even distribution between males (51.3%) and females (48.7%). The majority of the participants are aged between 23-26 years (42.7%), with 38.5% falling in the 18-22 years age group, and a smaller portion (18.8%) aged between 27-30 years. In terms of qualifications, 47.0% hold an undergraduate degree, while 28.2% have completed postgraduate studies, and 24.8% have a high school education.

This demographic distribution reflects a predominantly young and educated population, making it suitable for assessing the effects of screen time on psychological well-being and learning efficiency in this age group.

The normality of the data was evaluated using skewness and kurtosis values for the three study variables: screen time, psychological well-being, and learning efficiency. Skewness values between -1 and 1, and kurtosis values between -2 and 2 are considered indicators of a normal distribution (Kim, 2013). The skewness values for screen time (0.35), psychological well-being (-0.12), and learning efficiency (0.25) all fall within this acceptable range, indicating minimal skewness and a near-normal distribution. Similarly, the kurtosis values for screen time (-0.45), psychological well-being (-0.58), and learning efficiency (-0.36) suggest that the distributions are not excessively peaked or flat, also within the acceptable range for normality. Therefore, the results show that the data for all three variables are approximately normally distributed, making it appropriate to use parametric tests in subsequent analyses.

The correlation matrix (Table 4) indicates a significant negative relationship between screen time and both psychological well-being ( $-0.52$ ,  $p < 0.01$ ) and learning efficiency ( $-0.47$ ,  $p < 0.01$ ). This suggests that higher screen time is associated with lower psychological well-being and learning efficiency. Moreover, psychological well-being and learning efficiency are positively correlated ( $0.60$ ,  $p < 0.01$ ), indicating that as psychological well-being improves, learning efficiency tends to improve as well.

The results of the regression analysis further support these findings. In Table 5, screen time is a significant predictor of psychological well-being ( $B = -0.52$ ,  $p < 0.001$ ), explaining 27% of the variance in psychological well-being ( $R^2 = 0.27$ ). This indicates that higher screen time is associated with lower psychological well-being.

Similarly, Table 6 shows that screen time significantly predicts learning efficiency ( $B = -0.47$ ,  $p < 0.001$ ), accounting for 22% of the variance ( $R^2 = 0.22$ ). This suggests that higher screen time results in lower learning efficiency.

In conclusion, both correlation and regression analyses highlight the negative impact of increased screen time on psychological well-being and learning efficiency. The strength of these

relationships underscores the importance of managing screen time to maintain both mental health and academic performance.

**Table 1: Demographic Characteristics of Participants (N = 234)**

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	120	51.3
	Female	114	48.7
Age	18-22 years	90	38.5
	23-26 years	100	42.7
	27-30 years	44	18.8
Qualification	High School	58	24.8
	Undergraduate	110	47.0
	Postgraduate	66	28.2

**Table 3: Normality Statistics for the Study Variables (N = 234)**

Variable	Skewness	Kurtosis
Screen Time	0.35	-0.45
Psychological Well-Being	-0.12	-0.58
Learning Efficiency	0.25	-0.36

**Table 4: Correlation Matrix**

Variable	Screen Time	Psychological Well-Being	Learning Efficiency
Screen Time	1	-0.52**	-0.47**
Psychological Well-Being	-0.52**	1	0.60**
Learning Efficiency	-0.47**	0.60**	1

Note:  $p < 0.01$

**Table 5: Regression Analysis (Dependent Variable: Psychological Well-Being)**

Predictor	B	SE	Beta ( $\beta$ )	t	p-value
Screen Time	-0.52	0.05	-0.52	-10.4	< 0.001
R <sup>2</sup>	0.27				
F	108.16				< 0.001

**Table 6: Regression Analysis (Dependent Variable: Learning Efficiency)**

Predictor	B	SE	Beta ( $\beta$ )	t	p-value
Screen Time	-0.47	0.04	-0.47	-9.23	< 0.001
R <sup>2</sup>	0.22				
F	85.2				< 0.001

**Table 7: Hypothesis Testing Results**

Hypothesis	Regression Result	Significance (p-value)	Support
<b>H1: There is a significant impact of screen time on psychological well-being</b>	<b>B = -0.52, R<sup>2</sup> = 0.27</b>	<b>p &lt; 0.001</b>	<b>Supported</b>
<b>H2: There is a significant impact of screen time on learning efficiency</b>	<b>B = -0.47, R<sup>2</sup> = 0.22</b>	<b>p &lt; 0.001</b>	<b>Supported</b>

**Conclusion:**

This study demonstrated a significant negative impact of screen time on both psychological well-being and learning efficiency. Higher screen time was associated with lower emotional health, increased anxiety, and diminished cognitive performance, highlighting the detrimental effects of excessive digital engagement. These results emphasize the importance of managing screen time, particularly for younger populations, to maintain both mental health and academic productivity. Given the growing reliance on digital devices in daily life, it is essential to create awareness of the potential risks associated with prolonged screen exposure.

**Implications:**

The results of the present study are, therefore, important for educators, parents, and policymakers. Implications for educators are based on the conclusion that screen time decreases the efficiency of learning. This indicates that integration of the technology use in classrooms should be arranged in a more balanced and productive manner. It could include reducing the use of other non-learning related activities during the class and training of good digital citizenship that foster concentration. In particular for parents, the conclusions point to the need in the parental control and limitation of child's TV viewing, the promotion of a healthier and face-to-face communication with peers as positive strategies for children's well-being. The study that we suggest for the policymakers call for series of public health promotion that addresses the negative impacts of high screen use on mental health and learning with a possible policy recommendations on healthy screen use, particularly for children and adolescents. Such actions are required to address many of the adverse impacts and promote more positive online practices in the younger population.

**Recommendations for Future Research:**

Longer term consequences of screen time on mental health and cognitive performance of varying age groups and cultures remain uncertain that should be explored in future research by considering

it important. Moreover, it would be interesting to look at the effect of certain types of screen activities, like social media use as opposed to the latter, on tailoring our recommendations more directly. Longitudinal studies should be considered in further studies to establish causality more strongly.

### **Limitations**

However, there are some limitations in this study: The above result of this study has revealed many significant findings. First of all, the study applied the cross-sectional research design, which affords limited possibilities for Generalizing about the causal relationships between screen time and all these concerns for psychological well-being and learning efficiency. Future studies should incorporate Longitudinal designs to study the changes in students' attitudes over some time. Second, the retrospective assessment of the screen time could be aberrant due to some response bias including socially desirable response bias or faulty memory. Third, the study targeted young people and therefore the results achieved in the study may not be generalized to other age groups. Last but not the least, the study looked at screen time in broad terms and did not look at the particular kind of screen activities where quantitative differences could be seen in the impact they have on well-being and learning. Future research should try to overcome these limitations by using more rigorous criteria to assess screen time and by introducing a wider range of activities connected with screen use.

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