

A Study on the Relationship between Social Media Use and Critical Thinking Skills among Adolescents

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Abstract

Social media has become an integral part of adolescents' daily lives and influences the ways in which young people communicate, obtain information, learn, and interact with others. At the same time, the increasing availability of information through social-media platforms raises concerns regarding misinformation, unverified information, persuasive content, and excessive use. Critical thinking skills are therefore important for adolescents because they enable them to analyse information, evaluate evidence, identify assumptions, and make reasoned judgments. The present review paper examines the relationship between social-media use and critical-thinking skills among adolescents. The proposed study focuses on adolescents aged 13–18 years studying from 8th to 12th standard in Karnataka. A quantitative, cross-sectional correlational research design is proposed. The proposed sample consists of 200 adolescents, including male and female participants. Descriptive statistical techniques include frequency, percentage, mean, and standard deviation. Inferential statistical techniques include Pearson's product-moment correlation, independent-samples t-test, and one-way analysis of variance (ANOVA). The review of existing literature suggests that the relationship between social-media use and critical thinking is complex and may depend on the nature, purpose, intensity, and context of social-media use. The proposed study may contribute to understanding this relationship among school-going adolescents in Karnataka.

1. Introduction

Adolescence is an important developmental period characterized by significant cognitive, emotional, social, and behavioral changes. During this period, individuals develop increasingly complex reasoning, decision-making, problem-solving, and evaluative abilities. One important cognitive ability that develops during adolescence is critical thinking.

Critical thinking refers to the ability to analyze information, evaluate evidence, identify assumptions, consider alternative explanations, and arrive at reasoned conclusions. These abilities are particularly important in the contemporary digital environment, where adolescents are exposed to large amounts of information through social media platforms.

Social media has become an important part of adolescents' everyday lives. Adolescents use social media for communication, entertainment, education, information seeking, self-expression, and interaction with peers. At the same time, social media exposes young people to information of varying levels of reliability, including opinions, misinformation, persuasive content, and unverified claims.

Previous research has examined social media use among adolescents in relation to psychological wellbeing, risky behaviours, attention, identity development, and cognitive abilities. It is about 200 adolescents found that associations between social media use and several general cognitive abilities were generally small or negligible, suggesting that the relationship between social media and cognition is more complex than simply assuming that greater use produces poorer cognitive functioning.

Recent research has also emphasized the importance of media and information literacy and critical thinking in helping adolescents evaluate online information.

Therefore, the present study proposes to examine the relationship between social media use and critical thinking skills among adolescents.

1.1 Background of the Study

The rapid growth of digital technology has changed the way adolescents obtain and exchange information. Social media provides adolescents with immediate access to information, opinions, videos, news, educational material, and peer-generated content.

Social media use may have both positive and negative implications. It can provide opportunities for learning, communication, creativity, information sharing, and exposure to different viewpoints. However, excessive or problematic use may also be associated with difficulties in attention, wellbeing, and other aspects of functioning.

A systematic review of studies measuring social media use among adolescents found considerable variation in how researchers define and measure adolescent social-media use, demonstrating the importance of clearly operationalizing the construct in research.

Research on problematic social media use has also reported associations with several psychological outcomes among adolescents and young adults.

However, the relationship between ordinary patterns of social media use and the specific cognitive ability of **critical thinking** requires further investigation. The present study therefore focuses specifically on this relationship.

1.2 Statement of the Problem

“A Study on the Relationship Between Social Media Use and Critical Thinking Skills Among Adolescents.”

1.3 Need and Justification of the Study

Social media has become an important source of information and communication for adolescents. Because adolescents increasingly encounter information through digital platforms, their ability to evaluate, question, interpret, and critically assess information is particularly important.

Existing research has investigated social media use in relation to mental health, social behaviour, attention, identity, and general cognitive abilities. However, there is a need to examine the specific relationship between social media use and critical thinking skills.

Understanding this relationship may contribute to psychological and educational research by providing evidence about how adolescents' patterns of social media engagement are associated with their critical-thinking abilities.

The findings may be useful to psychologists, teachers, parents, counsellors, and educational institutions in developing appropriate media-literacy and critical-thinking programmes for adolescents.

2. Review of Literature

Study 1

Biscond, Revranche, and Husky (2022) conducted a systematic review examining methods used to measure social media use among adolescents. The review included 58 peer-reviewed studies involving adolescents aged approximately 11–18 years. The authors highlighted substantial variation in the measurement of adolescent social-media use.

Study 2

Stieger and Wunderl (2022) investigated associations between social media use and cognitive abilities in a large sample of more than 12,000 adolescents aged 12–16 years. The study examined several cognitive abilities and found generally small-to-tiny associations between social media use and cognitive test performance. The findings suggest that the relationship between social media use and cognitive abilities may be more complex than commonly assumed.

Study 3

A recent study published in *Social Sciences & Humanities Open* developed and validated an intervention protocol focused on media and information literacy for critical thinking in adolescents' use of social media. The study emphasizes the importance of critical evaluation of online content, misinformation, and digital engagement.

Study 4

A systematic review and meta-analysis of problematic internet use among school-going adolescents in India reported that problematic internet use is an important issue among Indian adolescents. The review included studies conducted in different parts of India and highlighted the need for further research concerning adolescent digital behaviour.

Study 5

Recent systematic-review research has continued to investigate relationships between adolescent social media use and different aspects of cognitive and psychosocial development, demonstrating that social media use is a multidimensional construct rather than simply a measure of screen time.

3. Research Gap

Social media has become an integral part of adolescents' everyday lives and has generated considerable research interest regarding its influence on psychological, social, educational and cognitive outcomes. However, a substantial proportion of existing research on adolescent social-media use has focused on mental health, well-being, problematic use, academic outcomes and interpersonal relationships, while comparatively less attention has been given to its relationship with higher-order cognitive abilities, particularly critical thinking skills. Recent reviews indicate that research on children and adolescents' social-media use is dominated by quantitative and cross-sectional studies, with considerable variation in how social-media use is conceptualised and measured. This makes it difficult to obtain a comprehensive understanding of how different forms and patterns of social-media engagement are associated with adolescents' cognitive development.

Furthermore, the existing literature does not provide a sufficiently clear picture of the relationship between social-media use and critical thinking. Social media exposes adolescents to diverse information, opinions, educational resources and discussions, which may provide opportunities for questioning, evaluating and comparing information. At the same time, adolescents are also exposed to misinformation, persuasive content, algorithm-driven information and unverified claims, which may create challenges for information

evaluation and critical judgement. Research examining adolescents' critical thinking in social-media environments has therefore described the relationship as complex and influenced by several factors rather than as uniformly positive or negative.

Another important gap concerns the measurement of social-media use. Many studies have concentrated primarily on the amount or frequency of social-media use, whereas the nature, purpose and pattern of engagement may also be important. For example, educational use, information-seeking, discussion-based use and passive entertainment use may provide different cognitive experiences. Recent research on adolescent social-media use similarly emphasises that the effects of social media can vary according to individual characteristics, the way social media is used, and the content and design of platforms.

There is also a methodological gap. Much of the existing evidence is based on cross-sectional research and self-reported measures, which can identify associations but provide limited insight into changes over time or causal processes. Recent reviews have therefore called for more diverse methodologies and longitudinal research to better understand the evolving relationship between social-media use and outcomes among young people.

Finally, there is a contextual gap concerning adolescents in the Indian setting. Findings generated in Western and other international contexts cannot automatically be generalised to Indian adolescents because patterns of social-media use, educational experiences, family environments and cultural contexts may differ. Although some Indian research has begun examining social networking and critical-thinking-related outcomes among school students, further systematic investigation is required to understand the relationship between social-media use and critical thinking skills among adolescents in the Indian context. Therefore, the present study proposes to address this gap by examining the relationship between social-media use and critical thinking skills among adolescents. The study will contribute to a better understanding of whether and how adolescents' engagement with social media is associated with their ability to analyse information, evaluate evidence, reason logically and make informed judgements.

The existing literature has examined adolescent social media use in relation to several outcomes, including psychological wellbeing, behaviour, identity development, attention, and general cognitive abilities.

However, relatively less attention has been given to the specific relationship between **social media use and critical thinking skills** among adolescents, particularly within the Indian context.

Furthermore, social media use can involve different patterns and purposes, such as information seeking, entertainment, communication, educational use, and passive consumption. Therefore, simply measuring the number of hours spent on social media may not provide a complete understanding of its relationship with critical thinking.

The present study attempts to address this gap by examining the relationship between adolescents' social media use and their critical thinking skills.

4. Objectives of the Study

- To assess the level of social media use among adolescents.
- To assess the level of critical thinking skills among adolescents.
- To examine the relationship between social media use and critical thinking skills among adolescents.
- To examine whether social media use and critical thinking skills differ across selected demographic variables such as age and gender.

5. Research Questions

- What is the level of social media use among adolescents?
- What is the level of critical thinking skills among adolescents?
- Is there a significant relationship between social media use and critical thinking skills among adolescents?
- Are there significant differences in social media use and critical thinking skills across selected demographic characteristics?

6. Hypotheses

H1: There will be a significant relationship between social media use and critical thinking skills among adolescents.

H2: There will be a significant difference in social media use among adolescents across selected demographic groups.

H3: There will be a significant difference in critical thinking skills among adolescents across selected demographic groups.

Note: The final direction of the hypotheses should be confirmed after reviewing your selected measurement tools and the literature with your research guide.

7. Operational Definitions

7.1 Social Media Use

For the purpose of this study, social media use refers to adolescents' engagement with social networking and social-media platforms, including the frequency, intensity, and patterns of their use.

7.2 Critical Thinking Skills

Critical thinking skills refer to the adolescent's ability to analyze information, evaluate evidence and arguments, identify assumptions, reason logically, and reach justified conclusions.

7.3 Adolescents

For the present study, adolescents will refer to participants within the age range selected by the researcher, proposed as **13–18 years**.

8. Variables of the Study

Independent/Predictor Variable

Social Media Use

Dependent/Outcome Variable

Critical Thinking Skills

Demographic Variables

The study may include:

- Age :13 – 18 Years
- Gender : Male & Female
- Educational level/class : VIII to XII Std.
- Type of school : Elementary to Higer Secondary
- Place of residence : Karnataka

The final demographic variables should be selected according to the research objectives and the advice of the research guide.

9. Methodology

Research Design

The proposed study will use a **quantitative, cross-sectional correlational research design**.

The correlational design is appropriate because the main purpose of the study is to determine whether social media use is statistically associated with critical thinking skills.

The study will not attempt to establish that social media use directly causes changes in critical thinking.

10. Population

The population of the study will consist of adolescents within the selected age range who use social media. For feasibility, the study may be conducted among adolescents studying in selected schools/educational institutions in Karnataka.

The exact geographical area and institutions will be finalized in consultation with the research guide.

11. Proposed Sample

A tentative sample of **200 adolescents** may be selected for the study.

The final sample size should be determined using an appropriate sample-size calculation and in consultation with the research guide/statistician.

Proposed age range

13–18 years

Proposed sampling method

A suitable sampling method, such as stratified or purposive sampling, will be selected according to access to schools and the final study design.

12. Inclusion Criteria

Participants will:

- Be within the selected adolescent age range.
- Be enrolled in the selected educational institutions.
- Use social media.
- Be able to understand the language of the research instruments.
- Provide assent/participate voluntarily with the required parental or guardian consent.

13. Exclusion Criteria

Participants may be excluded if:

- They do not use social media.
- They are unable to complete the research instruments.
- They return substantially incomplete questionnaires.
- Required consent/assent is not obtained.

14. Tools for Data Collection

Two major types of measures will be required.

Tool 1: Social Media Use Measure

A validated measure of social media use will be selected after reviewing its reliability, validity, age suitability, language availability, and permission requirements.

The measure should capture relevant aspects of adolescents' social media engagement rather than relying only on the number of hours spent online.

Tool 2: Critical Thinking Measure

A standardized and age-appropriate critical-thinking assessment will be selected.

One possible option for consideration is the **Cornell Critical Thinking Test**, subject to availability, age suitability, licensing/permission, and approval from the research guide.

The final instruments should **not be fixed until your guide approves them**.

15. Procedure

After obtaining approval from the university/research guide and the relevant institution, permission will be obtained from the selected schools or institutions.

The researcher will explain the purpose and procedure of the study to the participants.

For participants who are minors, the required parental/guardian consent and participant assent will be obtained according to institutional ethical requirements.

Participants will then complete the demographic information and standardized research instruments.

The researcher will ensure confidentiality and anonymity of the collected information.

The completed data will be coded and entered into appropriate statistical software for analysis.

16. Proposed Statistical Analysis

The following statistical techniques may be considered:

16.1 Descriptive statistics

- Frequency
- Percentage
- Mean
- Standard deviation

16.2 Inferential statistics

Pearson's correlation coefficient may be used to examine the relationship between social media use and critical thinking scores if the assumptions for parametric analysis are satisfied.

For group comparisons, appropriate tests such as:

- Independent-samples t-test
- ANOVA

may be considered depending on the number and nature of groups.

The final statistical analysis will be selected after examining the measurement scales, distribution of data, assumptions, and research objectives.

17. Expected Results

It is expected that the study will provide evidence regarding the association between social media use and critical thinking skills among adolescents.

The study may help determine whether different levels or patterns of social media use are associated with differences in critical-thinking performance.

However, the actual direction and magnitude of the relationship cannot be assumed before collecting and analysing the data.

18. Significance of the Study**18.1 Educational significance**

The findings may help educators understand the relationship between adolescents' digital behaviour and critical-thinking skills.

18.2 Psychological significance

The study may contribute to understanding adolescent cognitive development in the context of contemporary digital environments.

18.3 Practical significance

The findings may assist psychologists, counsellors, teachers, and parents in developing appropriate strategies to strengthen critical evaluation of online information.

18.4 Social significance

The study may contribute to media-literacy initiatives aimed at helping adolescents evaluate information responsibly in digital environments.

19. Scope of the Study

The study will focus on:

- Adolescents within the selected age range.
- Social media use as the primary predictor variable.
- Critical thinking skills as the primary outcome variable.
- Selected schools/educational institutions in the defined study area.
- Quantitative assessment using standardized research instruments.

20. Limitations of the Study

- The cross-sectional design will not establish causal relationships.
- Self-reported social media-use information may be affected by recall or response bias.
- The study may be limited by the geographical area and institutions selected.
- Findings may not be generalizable to all adolescents.
- Different social-media platforms and patterns of use may have different effects, which may not be completely captured by a single measure.

21. Ethical Considerations

The study will follow appropriate ethical principles for research involving human participants.

Participation will be voluntary.

Participants will have the right to withdraw according to the approved research procedure.

Confidentiality and anonymity of participant information will be maintained.

Because the proposed participants are adolescents, appropriate parental/guardian consent and adolescent assent will be obtained before participation, in accordance with institutional requirements.

The researcher will use only approved and appropriately licensed/authorized psychological assessment tools.

22. Conclusion

The proposed study aims to examine the relationship between social media use and critical thinking skills

among adolescents. In view of the increasing role of social media in adolescents' everyday lives and the importance of critical thinking for evaluating information, the study has potential educational, psychological, and social relevance.

The study will use a quantitative correlational approach to investigate the association between the two major variables. The findings may contribute to the existing literature on adolescent digital behaviour and cognitive development and may provide useful information for educators, psychologists, counsellors, parents, and institutions working with adolescents.

23. Preliminary References

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