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Tracking Self-Confidence Across Phases: A Gender-Based Longitudinal Study of Students During and After the Pandemic

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Abstract

With an emphasis on gender disparities, this longitudinal research investigates how the COVID-19 pandemic has affected self-confidence levels among Jammu and Kashmiri school and college students. A total of 400 students, consisting of 200 high school students and 200 college students, were surveyed during two distinct phases: during the pandemic, in which they engaged in online learning, and five months after the pandemic, when they engaged in offline learning. Self-confidence was evaluated with the use of the Self-Confidence Inventory, which was developed by Rekha Gupta. This is a validated instrument that evaluates personal, social, and academic confidence. The results showed that switching to offline learning significantly increased students' self-confidence, with both male and female students gaining from the return of in-person interactions and regimented routines. Although the gain was more noticeable among female students after the pandemic, female students consistently reported somewhat better levels of self-confidence than male students. Correlation analysis demonstrated the stability of self-confidence levels over time, while t-tests validated significant differences between the two phases. The research emphasizes the importance of traditional educational settings in building resilience as well as the psychological difficulties of online learning, such as loneliness and decreased peer contact.

KEYWORDS: Online Learning, Self-Confidence, Offline Learning, School Students, College Students

Introduction

The COVID-19 pandemic caused enormous disruptions in global education systems, necessitating a rapid and broad move from traditional educational settings to online learning. Students' academic, social, and psychological environments were profoundly changed by this shift, and self-confidence became a crucial area of concern. Self-confidence, an important psychological quality that influences academic achievement, decision-making, and personal development, often changes in reaction to external pressures. Such an atmosphere was brought about by the pandemic, forcing students to adjust to new teaching methods while managing the crisis's overall unpredictability.

Gender and educational attainment have continuously emerged as significant variables among the many elements influencing self-confidence. Previous research indicates that gender norms and social expectations often result in different confidence trajectories for men and women (Bleidorn et al., 2016). These disparities have been exacerbated during the pandemic, as students faced particular difficulties brought on by traditional gender norms, such as juggling domestic duties or overcoming social isolation. Additionally, school and college students had different challenges: older students struggled with increased academic and career-related uncertainty, while younger students struggled with technological adaptation and the loss of established routines.

Studies have emphasized how online learning affects students' psychological health and sense of self-efficacy, with a focus on how peer interaction, technical obstacles, and instructor assistance influence learning outcomes (Dhawan, 2020; Singh et al., 2021). Nevertheless, little is known about the complex interactions between gender and educational attainment that affect self-confidence at this time. In order to fill this gap, the current research looks at how school and college students' self-confidence varies by gender, with an emphasis on how different groups dealt with the particular difficulties of the pandemic.

This study used a longitudinal design and polled 400 students in the Jammu division of Jammu and Kashmir, 200 of whom were from schools and 200 of whom were from colleges. To guarantee balanced representation, the sample was chosen by simple random sampling and was split evenly by gender. Structured questionnaires intended to assess self-confidence levels were used to gather data, allowing for a thorough examination of variations by gender and educational attainment. Two stages of data collection were conducted: the first took place just after the opening of schools, and the second took place five months later, when offline learning had returned.

This research intends to further knowledge of self-confidence as a dynamic construct impacted by contextual and individual variables by examining these characteristics. The results are intended to help educators and policymakers create focused interventions that will increase students' self-assurance, fortitude, and general well-being both during and after crises.

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LITERATURE REVIEW

School and college students' self-confidence has been greatly affected by the COVID-19 pandemic, and several research studies have shown how complex this phenomenon is. Before the pandemic, students' performance and involvement in class were often correlated with their level of self-confidence. But the beginning of the pandemic brought with it uncommon challenges that changed both the school environment and students' mental health. According to research, factors like social isolation, elevated anxiety, and altered learning environments all had a significant impact on students' self-confidence, which in turn led to a decline in their general mental health and academic performance (Li et al., 2021; Wang et al., 2020; Son et al., 2020).

Prior to the pandemic, students' self-confidence was often correlated with their social and academic success. According to research, children who have more self-confidence often do better academically and participate more actively in their education (Saidah, 2024). The pandemic, however, upended traditional methods of teaching and compelled students to attend classes virtually, which sometimes lacked the interaction components of face-to-face instruction. This change impacted their confidence and self-perception in addition to their academic achievement. The difficulties of adjusting to online learning platforms caused students to experience feelings of fear and inadequacy, which often led to a decline in motivation and engagement (Malik & Nakhla, 2022; Son et al., 2020).

The connection between mental health and self-confidence became more apparent throughout the pandemic. Higher levels of anxiety and depression were associated with lower self-confidence among college students, according to research (Li et al., 2021; Wang et al., 2020; Son et al., 2020), and the fear of catching COVID-19 and worries about family members' health made these feelings even worse, creating a generalized sense of helplessness and uncertainty. Research emphasized that students who had severe anxiety connected to the pandemic expressed lower self-confidence in their academic ability and general well-being (Er-KORUCU, 2024; Hao & Zhang, 2022). First-year college students, who encountered special difficulties as they transferred to higher education during such turbulent times, showed a notably marked drop in self-confidence (Jun et al., 2021).

Furthermore, it is impossible to ignore how social support affected people's self-confidence during the pandemic. According to research, students who had strong social support systems were better equipped to handle the stresses brought on by the pandemic, which helped them stay confident (Zhao et al., 2022; Yang et al., 2022). On the other hand, those who were socially isolated expressed emotions of inadequacy and loneliness, which had a detrimental effect on their academic performance and self-esteem (Zhou et al., 2022; Han et al., 2022). Numerous studies have emphasized the value of peer relationships and support networks in boosting self-esteem, highlighting the need for educational institutions to help students connect with one another, especially in online environments (Li et al., 2021; Wang et al., 2020).

Another important aspect affecting self-confidence throughout the outbreak was the function of self-reflection. According to some research, students who practiced self-reflection during the pandemic have improved their coping mechanisms and gained a more optimistic perspective (Jun et al., 2021; Yang et al., 2022). Students were able to reevaluate their objectives and driving forces as a result of this introspection, which eventually helped them develop a more resilient attitude. Not all students, however, profited equally from self-reflection; those who had mental health difficulties often found it difficult to participate in positive self-evaluation, which resulted in additional drops in self-confidence (Li et al., 2021; Nazir, 2022).

Self-confidence was influenced by the pandemic's effects on physical health behaviors in addition to psychological ones. According to research, college students who engaged in less physical exercise during lockdowns reported feeling more anxious and depressed (Mingqiang et al., 2020). Students' mental health, confidence, and self-image were all impacted by this drop in physical well-being. Regular exercise has been associated with better mood and self-esteem, underscoring the significance of leading a healthy lifestyle even in trying circumstances (Mingqiang et al., 2020).

Numerous strategies were put in place to help students' mental health and self-confidence as educational institutions adjusted to the difficulties presented by the pandemic. For students looking to improve their coping skills and resilience, telehealth services, mindfulness exercises, and online psychotherapy have become important tools (Li et al., 2021; Nazir, 2022). In order to help students retain their self-confidence in academic contexts, these treatments sought to alleviate their psychological discomfort and foster a feeling of agency and self-efficacy (Al-Qahtani et al., 2021). In various kinds of settings, the connection between self-efficacy and the pandemic has also been investigated. Dadfar and Sanadgol pointed out that a sizable percentage of students expressed moderate to poor levels of self-efficacy in handling the difficulties posed by the pandemic (Dadfar & Sanadgol, 2021). This result is consistent with the findings of Lee et al., who observed that during the pandemic, low-income students encountered extra obstacles that significantly reduced their sense of self-efficacy (Lee et al., 2022). These students' capacity to remain confident in their academic talents was severely hampered by the absence of resources and support networks, such as after-school activities.

Additionally, students' trust in their practical abilities was significantly impacted by the stoppage of clinical activity during the pandemic. According to Zotti et al., the absence of practical experience caused dental students to feel a significant gap in their education, which had a detrimental effect on their confidence while doing clinical operations (Zotti et al., 2023). According to Ilić et al., the transition to online learning and the lack of face-to-face patient interaction also caused a notable drop in self-confidence among final-year dental students (Ilić et al., 2021). As noted by Alsadi et al., who discovered that simulation learning during the pandemic did not make up for the absence of real-world clinical contact, this pattern was not limited to dentistry students; nursing students also reported comparable experiences (Alsadi et al., 2023).

The long-term effects of these shifts in self-confidence were evident as the virus spread. Maftei et al. discovered that self-esteem was not substantially connected with professional anxiety among high school students, despite the fact that students reported feeling more anxious about their future professions (Maftei et al., 2022). This implies that while self-confidence varies in reaction to short-term difficulties, it is essential for long-term academic and career goals.

Concerns over the pandemic's long-term impact on students' self-confidence have also been highlighted by the return to in-person instruction after the outbreak. As they return to traditional academic settings, some students have reported feeling more confident, while others are still struggling with the psychological effects of the pandemic (He, 2023). As students traverse their educational paths, they face persistent obstacles due to the residual consequences of anxiety, social isolation, and academic interruptions (He, 2023).

RESEARCH GAP

Previous studies have examined the psychological effects of the COVID-19 pandemic on students, with a focus on how it affects self-confidence. There are still a lot of unanswered questions about how gender and educational attainment interact to influence students' levels of self-confidence in school and college. While some research emphasizes how cultural norms cause gender disparities in self-confidence, little is known about how these differences show up for male and female students under specific stresses of the pandemic. Additionally, the numerous challenges that school and college students encounter like adjusting to technology, maintaining regimented schedules, or negotiating uncertainties connected to their careers are often examined separately, which leaves a vacuum in our knowledge of how they affect self-confidence in comparison. Without a longitudinal strategy to monitor changes in self-confidence across time, the majority of research offers cross-sectional viewpoints. Furthermore, little has been discovered about the unique contextual elements impacting male and female students at various educational levels, as well as the compounding impacts of returning to in-person instruction. By comparing the self-confidence levels of male and female school and college students, this study fills these gaps and offers information to guide focused treatments aimed at improving resilience and wellbeing.

OBJECTIVE OF THE STUDY

To examine the impact of the COVID-19 pandemic on self-confidence levels among school and college students, with a specific focus on exploring gender-based differences.

RESEARCH METHODOLOGY

Research design

In order to evaluate school and college students' self-confidence both during and after the COVID-19 pandemic, this study used a quantitative, longitudinal research approach. To examine how self-confidence changed over time, the research used both descriptive statistics, such as mean, standard deviation, and Pearson correlation, and inferential statistics, such as paired sample t-tests.

Quantitative and Longitudinal Research Design

- **Quantitative Research Design:** This means the study relied on numerical data to draw conclusions. By measuring self-confidence using standardized questionnaires, the researchers could calculate and compare specific scores across different groups and time periods.
- **Longitudinal Design:** A longitudinal study involves collecting data from the same participants at multiple time points. In this case, data were collected during the pandemic (when online learning was prevalent) and again five months after the return to offline learning. This approach helps track changes in self-confidence over time and identifies trends or patterns.

VARIABLES

i) Dependent Variable

- **Self-Confidence:** Self-confidence refers to a student's belief in their ability to succeed academically and personally. This variable is the focus of the study, as it examines how self-confidence changes in response to the independent variables.

ii) Independent Variables

These are the variables believed to influence the dependent variable (self-confidence):

- Two categories: Male and Female.
- The study examines whether self-confidence levels differ between genders during and after the pandemic.

iii) Control Variables

- Equal representation of males and females.
- Equal number of participants from schools and colleges.
- All participants were from the Jammu division of Jammu & Kashmir, ensuring a consistent regional context.

SAMPLING TECHNIQUE

A balanced distribution of 100 male and 100 female participants at each educational level comprised the research sample, which included 200 school students and 200 college students from the Jammu region of Jammu & Kashmir (UT). Using the simple random sampling technique, participants, who ranged in age from 16 to 22, were chosen from five local schools and five colleges. 20 male and 20 female students were equally distributed among the 40 students from every institution. In addition to guaranteeing equal representation of men and women, this balanced sample strategy made it easier to conduct a detailed and representative study across multiple educational settings.

PSYCHOLOGICAL TOOL USED IN THE STUDY

- **Self-Confidence Inventory (SCI) by Rekha Gupta**

The Self-Confidence Inventory (SCI) by Dr. Rekha Gupta is a 56-item standardized tool designed to assess self-confidence in adolescents and adults. It features 44 positive and 12 negative items, scored to reflect levels of self-assurance. Higher scores indicate lower self-confidence, while lower scores suggest greater self-confidence. Developed in 2006 by the National Psychological Corporation, the SCI demonstrates strong reliability (split-half: 0.91, test-retest: 0.78) and validity (0.82). Applicable in education, clinical settings, and career counselling, the inventory evaluates confidence across personal, social, and professional contexts. Its versatility and robust psychometric properties make it a valuable research tool.

COLLECTION OF DATA

This longitudinal study's data was gathered in two stages in classrooms at five schools and five institutions in the Jammu division of Jammu & Kashmir (UT). In the first phase, the immediate after reopening of the school during COVID-19 was the main emphasis. The second phase took place five months into the offline courses that followed the outbreak. Students were given a questionnaire to complete in both phases to collect pertinent data.

Participants received a thorough description of the study's goals at the beginning, as well as precise instructions on how to fill out the questionnaire. To make sure they fully understood the procedure, they were urged to ask questions. Each institution's participants participated in the research with thoughtfulness, giving insightful answers. To guarantee correctness and consistency, their responses were graded using a predetermined answer key. In order to answer the research goals of the study and provide significant insights, the data gathered throughout the two periods was then methodically examined.

STATISTICAL TOOLS USED FOR THE STUDY:

Descriptive Statistics

- **Mean:** This is the average score of self-confidence for a particular group (e.g., school students, college students, males, females) during each phase. It provides a central tendency, summarizing the overall level of self-confidence.
- **Standard Deviation (SD):** SD measures the variability or spread of scores around the mean. A high SD indicates that individual self-confidence scores vary widely, while a low SD suggests that scores are more consistent across participants.
- **Pearson Correlation:** This is a statistical method used to measure the strength and direction of a linear relationship between two variables. In this study, Pearson correlation assessed the consistency of self-confidence levels between the two phases (during and post-pandemic). A high positive correlation suggests that participants' self-confidence levels were stable across the time points.

Inferential Statistics

- **Paired Sample T-Test:** This test compares the means of two related groups to determine whether the difference between them is statistically significant. In this study, the t-test was used to compare self-confidence scores of the same participants during the pandemic (online learning phase) and post-pandemic (offline learning phase). This helps identify if the shift back to offline learning led to significant changes in self-confidence,

RESULT, ANALYSIS, AND INTERPRETATION

Table 1: Mean and Standard Deviation Score of Students' Self-Confidence During pandemic and post-pandemic

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SCI during pandemic (online learning) M	29.2850	200	7.37398	.52142
	SCI post pandemic (offline learning) M	34.1650	200	5.52998	.39103
Pair 2	SCI during pandemic (online learning) F	30.3450	200	7.31873	.51751
	SCI post pandemic (offline learning) F	34.8250	200	5.44358	.38492

Table 2: Correlation Score of Students' Self-Confidence for Gender Difference During pandemic and post-pandemic

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	SC during pandemic (online learning) M & SC post pandemic (offline learning) _M	200	.757	.000
Pair 2	SC during pandemic (online learning) F & SC post pandemic (offline learning) F	200	.852	.000

Table 3: Paired Sample t-test Score of Students' Self-Confidence for Gender Difference During pandemic and post-pandemic

Paired Samples Test									
		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	SC during pandemic (online learning) M - SC post pandemic (offline learning) M	-4.88000	4.82098	.34089	-5.55223	-4.20777	-14.315	199	.000
Pair 2	SC during pandemic (online learning) F - SC post pandemic (offline learning) F	-4.48000	3.91487	.27682	-5.02588	-3.93412	-16.184	199	.000

Results:

The study examined self-confidence levels among male and female students at two time points: during the pandemic, when students had just returned to in-person schooling, and post-pandemic, five months later. For male students, the self-confidence score during the pandemic was 29.29 (SD = 7.37), and it increased to 34.17 (SD = 5.53) post-pandemic (Table 1), with a mean difference of -4.88 (Table 3). A paired t-test showed a statistically significant improvement in self-confidence for males ($t(199) = -14.315$, $p < 0.001$) (Table 3). Female students showed similar trends, with a during-pandemic mean of 30.35 (SD = 7.32), which increased to 34.83 (SD = 5.44) post-pandemic (Table 1), resulting in a mean difference of -4.48 (Table 3). A paired t-test also revealed a significant increase in self-confidence for females ($t(199) = -16.184$, $p < 0.001$) (Table 3). In terms of gender comparison, female students had a slightly higher mean self-confidence score both during the pandemic (30.35 vs. 29.29) and post-pandemic (34.83 vs. 34.17), although the gap narrowed over time. Both genders showed substantial improvements, with females maintaining a slight advantage. A correlation analysis showed a significant relationship between self-confidence scores during and post-pandemic for both males ($r = 0.757$, $p < 0.001$) and females ($r = 0.852$, $p < 0.001$) (Table 2), indicating consistent trends across both groups.

Analysis:

The results reveal significant changes in the self-confidence levels of both male and female students during the pandemic (online learning) and post-pandemic (offline learning). The analysis shows that both genders demonstrated increased self-confidence scores after transitioning to offline learning. Specifically, the mean scores improved from 29.29 to 34.17 for male students and from 30.35 to 34.83 for female students, indicating that offline learning had a positive impact on their self-confidence.

In terms of gender differences, female students consistently had higher mean self-confidence scores than male students in both periods. However, the increase in self-confidence post-pandemic was slightly more pronounced for females, with a change of -4.48 points, compared to -4.88 points for males.

Correlation analysis revealed strong positive correlations for both genders, suggesting that self-confidence levels during the pandemic were a good predictor of self-confidence post-pandemic. Notably, female students exhibited a stronger correlation ($r = 0.852$) than male students ($r = 0.757$), indicating that their self-confidence levels were more stable across the two periods.

Statistical tests further confirmed that the differences in self-confidence scores between the two periods were statistically significant for both genders ($p = 0.000$), suggesting that the observed improvements were not due to chance. Overall, the findings emphasize the positive impact of offline learning on self-confidence, likely due to factors such as face-to-face interactions, structured environments, and reduced isolation.

Interpretation:

According to the present research, students' self-confidence was significantly impacted by online learning during the pandemic, as both male and female students had lower self-confidence ratings compared to the traditional learning period that followed the outbreak. According to the findings, students' confidence have been hampered by the sense of loneliness and lack of in-person relationships that online learning has caused. However, when returning to offline learning, men and women demonstrated progress, underscoring the difficulties and constraints of online learning in building self-confidence. These results highlight the need for more dynamic and captivating online learning environments in order to promote students' confidence and mental health.

CONCLUSION

The longitudinal study reveals significant insights into the impact of the COVID-19 pandemic on students' self-confidence. The transition from online to offline learning marked a notable improvement in self-confidence levels across both genders and educational stages. While female students consistently reported slightly higher self-confidence scores than their male counterparts, both groups exhibited substantial growth in confidence post-pandemic, underscoring the critical role of face-to-face learning environments in fostering psychological well-being and resilience. The results emphasize the adverse effects of online learning, including feelings of isolation and reduced interaction, on students' self-confidence. These findings reinforce the importance of creating supportive and interactive educational settings to mitigate such challenges during crises.

LIMITATIONS OF THE STUDY

- **Geographical Scope**: The study is limited to students from the Jammu division of Jammu and Kashmir, which restrict the generalizability of findings to other regions with different educational or cultural contexts.
- **Self-Reported Data**: The reliance on self-reported questionnaires for assessing self-confidence introduce bias, as responses could be influenced by social desirability or individual interpretation of the questions.

FUTURE IMPLICATION

- **Blended Learning Models**: Implement hybrid educational approaches combining online and offline learning to mitigate the negative effects of isolation and maintain engagement during crises.
- **Gender-Specific Interventions**: Develop targeted programs to address unique gender-based challenges, fostering equitable growth in self-confidence and resilience.
- **Strengthened Support Systems**: Enhance peer networks, mentorship opportunities, and teacher-student interactions to create a nurturing environment that boosts self-confidence.
- **Longitudinal Monitoring**: Establish tracking systems to monitor self-confidence and mental well-being over time, enabling timely and effective interventions during disruptive events.

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