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The Psychology Of Online Learning: Instructor-Student Interaction, Engagement And Satisfaction In Short-Term Online Courses Among Indian Graduates.

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Abstract: This study investigates the influence of Instructor-Student Interaction on Engagement and Satisfaction in short-term online courses among Indian graduates by examining the mediating role of Basic Psychological Needs (BPN), specifically Relatedness and Competence. The psychological mechanisms behind the impact of interaction on student outcomes are under-researched in Indian higher educational contexts, specifically for high intensity short-term courses. The study is grounded in the integrated theoretical frameworks of Community of Inquiry (CoI) and the Self Determination Theory (SDT). The data collected through an online survey from a sample size of 114 Indian graduates enrolled in short-term online courses. Regression and mediation analysis demonstrated significant relationships between the variables. The interaction has a positive predictive power on BPN, Engagement and Satisfaction. The mediation analysis established the Relatedness and Competence act as a critical bridge in the process of influence of interaction on outcomes. Findings suggest that the interaction is not just a tool for information delivery, but is a critical element for satisfying a student's psychological needs which is crucial for engagement and satisfaction. This study validates the integration of SDT and CoI in Indian higher education. The findings are a roadmap to educators and institutions to move toward a relational, supportive learning environment to foster student performance and well-being and reduce the high drop-out rates.

Index Terms - Student Engagement, Course Satisfaction, Basic Psychological Needs, Short-term online course, Indian Graduates.

I. INTRODUCTION

Online learning has transitioned from an emergency necessity during the COVID-19 pandemic period to intentional, self-motivated enrollments to high intensity short-term courses (up to 6 months) for professional upskilling. In 2026, even though the online educational platforms are advanced with highly automated technological features and AI-driven contents there are still high drop-out rates. The major challenge behind this is the isolation and anxiety experienced by the learners which can be mitigated by the high-quality instructor interaction. This study is grounded in the theoretical frameworks of Community of Inquiry (CoI) and Self Determination Theory (SDT). According to CoI, 'Teaching Presence' is the

binding element for the 'Cognitive and Social Presence' and is crucial for successful student outcomes (Garrison et al., 2000). SDT posits that academic success depends on satisfaction of three basic psychological needs: autonomy, relatedness and competence (Ryan & Deci, 2000). While autonomy is the primary driver for student motivation in western individualistic cultures, in collectivist cultures like the Indian educational system which is rooted in the Guru-Shishya relationships, the relatedness and competence are crucial for student engagement and satisfaction. The psychological mechanisms behind the effect of instructor interaction on the student outcomes in short-term online courses in Indian higher educational context is under-studied. Current studies mainly are on the COVID-19 forced learning and on the long-term degree programs. The digital divide remains a major barrier in Indian digital learning platforms. Now in 2026, the post pandemic period, usage divide is mainly the psychological divide (Das & Das, 2020). This study is not merely focusing on the direct effects of instructor-student interaction on student engagement and satisfaction; rather examining the mediating role of basic psychological needs, the relatedness and competence. We hypothesize that the high-quality instructor interaction positively correlates with the fulfillment of the students basic psychological needs (relatedness and competence) which is a strong predictor of engagement and satisfaction in short-term online learning. This study provides a roadmap for educators and institutions to move toward a learner-centric, need-supported model for successful student outcomes in online learning rather than merely focusing on the content delivery.

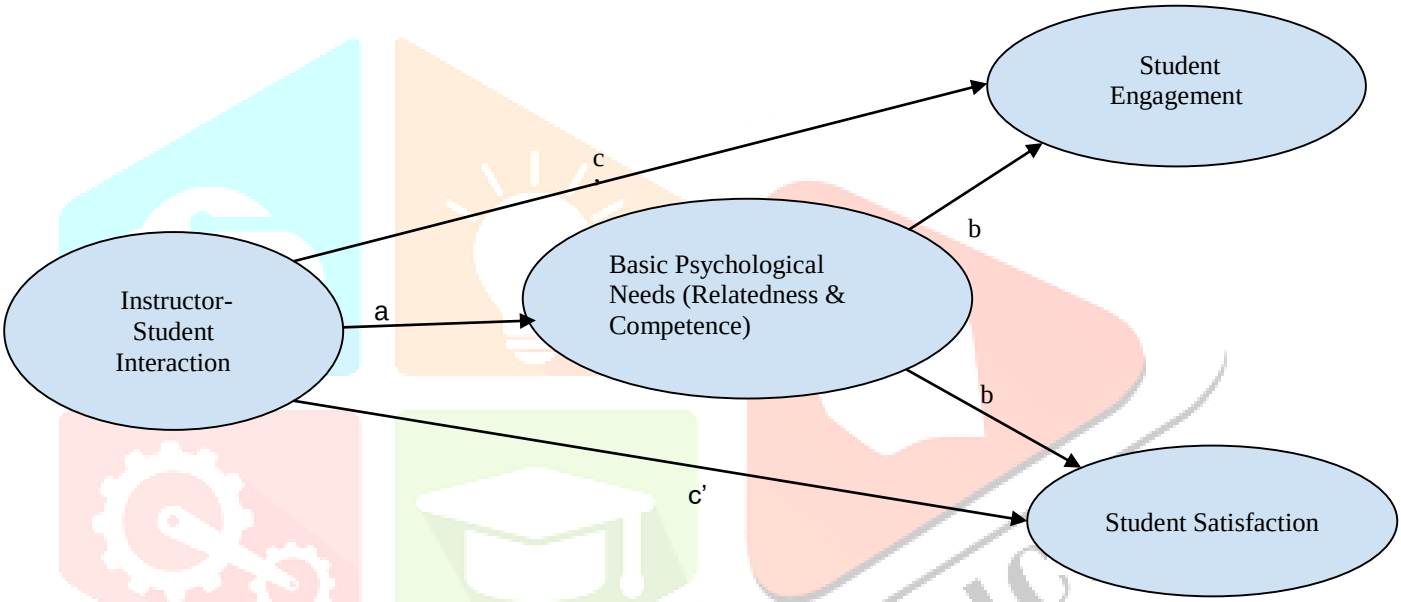

Figure 1: conceptual mediation model illustrating the hypothesized impact of interaction on engagement and satisfaction mediated through the BPN (relatedness and competence).

II: REVIEW OF LITERATURE

The enrollments to various high intensity short-term online courses are rapidly increasing mainly for professional upskilling. While digital learning has evolved from an emergency necessity to intentional, self-motivated learning supported with advanced technological features and AI-driven content, it continues to experience high drop-out rates (Bouchrika, 2026). In this post-pandemic landscape of 2026, the usage divide which is predominantly psychological is the major barrier, surpassing the access divide. The teacher's role as a learning facilitator and teaching decision maker can bridge this psychological gap (Das & Das, 2020). The psychological disconnect between the learner and instructor is a key factor in user resistance towards the Massive Open Online Courses (MOOC) (Dang et al., 2022). While digital literacy has improved, a significant psychological barrier remains compared to traditional offline learning; the lack of mentorship and the expert guidance (Maya et al., 2022).

Three elements, 'Cognitive Presence', 'Social Presence' and 'Teaching Presence' are essential for a positive educational experience. The 'Teaching Presence' is the instructor's role in meaningful learning experience and has three components, the design, facilitation and direct instruction (Garrison et al., 2000). And the three forms of interactions; the 'Learner-Learner', 'Learner-Content' and 'Learner-Instructor' are essential for successful online learning. 'Learner-Instructor' interaction is the primary tool to reduce the 'transactional distance'. When instructors increase the level of personal dialogue and flexibility the psychological gap narrows, which leads to higher levels of student autonomy and satisfaction (Moore, 1989). The instructor's exhibition of immediacy encourage students to be more attentive and boost their

performance and perceived progress in learning (Amoozegar et al., 2023). Empathetic and structured communication can lead to psychological well-being and student success (He et al., 2025). Students prioritize instructors who are visible, accessible and engaged mentors rather than the content delivery agents (McNeill & Bushaala, 2024). The instructional immediacy is critical for reducing the sense of isolation (Deep et al., 2024).

Three basic psychological needs; autonomy, relatedness and competence should be satisfied for a student's well-being and motivation. Instructors play a critical role in fulfilling these needs. Students feel isolated with diminished motivation when these needs are not met (Ryan & Deci, 2000). Engagement is not a direct result of external digital tools, but is mediated by these needs. The relatedness is essential for sustained engagement (Yang et al., 2025). The internal psychological state of the Indian graduate is a critical factor mediating between the course structure and overall satisfaction (Suriyanarayanan et al., 2025).

III: METHODOLOGY

3.1 Objectives and Hypothesis

The study evaluates the influence of instructor-student interaction on student engagement and satisfaction mediated by the basic psychological needs (relatedness and competence). The objectives are 1) evaluate the impact of interaction on relatedness and competence, 2) examine the relationship between interaction and engagement, 3) determine how interaction predicts satisfaction, 4) examine the mediating role of relatedness and competence.

The following hypothesis are tested in this study;

H1: Instructor interaction positively predicts BPN (Relatedness and Competence).
H2: Instructor interaction positively predicts student engagement.
H3: Instructor interaction positively predicts student satisfaction.
H4: BPN mediates the relationship between interaction and both engagement and satisfaction.

3.2 Research Design and Participants

The study utilized a quantitative, cross-sectional method, N=114. Data collected from Indian graduates, 18+years of age, currently or recently enrolled in short-term online courses (up to 6 months). Participants recruited via convenience sampling from professional networks and academic groups.

3.3 Instrumentation

18 items questionnaire is used in three sections employing a Likert scale of 1(Strongly Disagree) to 5 (Strongly Agree) to ensure cognitive consistency. This instrument comprised four primary constructs derived from established academic frameworks. Table 1 shows the summary of research constructs, sources and description of scales.

Table 1: summary of research instrument constructs and sources.

Construct	Source(s)	No. of Items	Description
Instructor-Student Interaction	Arbaugh et al. (2008); Walker & Fraser (2005)	5	Assesses 'Teaching Presence' via clarity and feedback. Includes 3 items from Community of Inquiry (CoI) and 2 from Distance Education Learning Environments Survey (DELES).
Basic Psychological Needs	Chen et al. (2015)	4	Grounded in Self-Determination Theory (SDT). Adapted from the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS) to measure relatedness and competence.
Student Engagement	Dixson (2015)	4	Derived from the Online Student Engagement (OSE) scale; assesses student effort, commitment, and proactive communication.
Course Satisfaction	Kuo et al. (2013)	5	Evaluates overall experience and perceived value of pedagogical delivery via the Student Satisfaction Scale

3.4 Reliability and Validity

The study used standardised scales with proven record of stability (>.70). Internal consistency verified using Cronbach's Alpha for the Indian graduate's context. Content and construct validity ensured by aligning items with CoI and SDT frameworks. Face validity was confirmed through a pilot review to ensure the clarity of terminologies and logical flow.

3.5 Procedure and Ethical Consideration

The online survey was distributed through professional networks and academic groups to ensure geographically diverse reach. A mandatory informed consent ensured ethical integrity. Participation was voluntary and anonymous; no personally identified information was collected. Data were reported in aggregate form and participants maintained the right to withdraw at any stage.

3.6 Data Analysis Plan

Quantitative analysis was performed using Google sheets and XLMiner Data Analysis ToolPak.

1. Descriptive statistics: Used to summarise the data through Frequencies, Percentages, Mean and the Standard Deviation (SD).
2. Correlation: Pearson coefficients (*r*) determine the relationship strength between all variables.
3. Regressions: Simple linear regressions assessed the direct influence of interaction on engagement (H2), satisfaction (H3), and BPN (H1). Multiple linear regressions and mediation analysis examined the indirect effect of interaction on engagement and satisfaction through BPN (H4), comparing the direct effect (c') against the total effect (c). A *p*-value of < .05 was considered statistically significant for all the tests.

IV: RESULTS AND ANALYSIS

This presents the statistical findings on the data collected from 114 Indian graduates and discusses them in the context of established academic frameworks. The influence of instructor-student interaction on engagement and satisfaction, mediated by the basic psychological needs (relatedness and competence) were analyzed using XLMiner Analysis ToolPak.

4.1 Demographic Profile

The baseline characteristics of the sample, *N*=114 are established through descriptive analysis.

Table 2: participant demographic characteristics (*N* = 114).

Characteristic	Category	*n*	Percentage
Gender	Female / Male	76 / 38	66.7 / 33.3
Age group	18-26 / 27- 31/ 32+	43 / 37 / 34	37.7 / 32.5 / 29.8
Education	Bachelor's / Masters	73 / 41	64.0 / 36.0
Field	Med-Science / Others	78 / 36	68.4 / 31.6
Motive	Career oriented/ Others	99 / 15	86.9 / 13.1

4.1.1 Analysis and Discussion

Females are predominant (66.7%) and a majority fall in the 18- 31 age group (70.2% combined). A total of 64.0% hold a bachelor's degree and are primarily from medical and science background (68.4%). The majority of learners are career oriented (86.9%) which aligns with the current trend of professional upskilling.

4.2 Descriptive Statistics and Reliability Analysis

The reliability and central tendencies were evaluated using descriptive statistics and Cronbach's alpha coefficients.

Table 3: descriptive statistics and reliability analysis, *N*=114.

Construct	No. of Items	Mean (*M*)	*SD*	Cronbach's □
Instructor-Student Interaction	5	4.14	0.71	.889
BPN (Relatedness and Competence)	4	4.10	0.76	.900
Student Engagement	4	4.02	0.68	.839
Course Satisfaction	5	3.92	0.78	.922

4.2.1 Analysis and Discussion

All constructs exhibited a high reliability (□ > .80) exceeding the recommended threshold of .70. The mean score (3.92 to 4.14) indicates a positive perception of all constructs. The low Standard Deviation (*SD*) reflects the high degree of consistency. The instructor-student interaction has the highest mean value (4.14), provides a strong baseline for subsequent mediation analysis and this indicates that learners in 2026 highly value 'Teaching Presence'. These findings suggest a positive perception of online learning, validating the shift from emergency remote teaching to intentional, self-motivated learning (Bouchrika, 2026).

4.3 Correlation Analysis

Pearson correlation analysis (*r*) was conducted to determine the existence and strength of associations between the variables.

Table 4: Pearson correlation matrix of research constructs (*N* = 114).

1.Instructor Interaction	1	*2*	*3*	*4*
2.BPN (Relatedness and Competence)	.84***			
3.Engagement	.72***	.77***		
4.Satisfaction	.85***	.88***	.79***	

Note: *N* = 114. ***p < .001 (two-tailed).

4.3.1 Analysis and Discussion

All the variables exhibited positive and statistically significant correlations (p <.001). There is strong association between the BPN Satisfaction (r = .88), followed by Instructor-Student Interaction and Satisfaction (r = .85). These results suggest that the perceived instructor interaction and fulfillment of psychological needs increase the student engagement and satisfaction. This provides a strong statistical justification for the subsequent mediation analysis and confirms that in the Indian higher educational context, psychological needs are deeply intertwined with learner success. This aligns with the findings of Maya et al. (2022) regarding interpersonal support in Kerala.

4.4 Simple Regression Analysis

Hypothesis H1, H2 and H3 were tested using simple regression analysis. This is to evaluate Instructor Interaction as a predictor for BPN, Engagement, and Satisfaction.

Table 5: simple regression analysis of instructor interaction on research variables.

Dependent variable	□	R^2	*t*	*F*
BPN(H1)	.835***	.698	16.10	259.08
Engagement(H2)	.719***	.517	10.96	120.03
Satisfaction(H3)	.845***	.714	16.73	279.80

Note: *N* = 114. Predictor: Instructor-Student Interaction. □= Standardized Beta; R^2 = Coefficient of Determination; *t* = t-statistic; *F* = F-ratio.
***p < .001.

4.4.1 Analysis and Discussion

The regression analysis demonstrate high explanatory power with Instructor-Student Interaction explains 71.4% of the variance in Satisfaction (F=279.80, p<.001) and 69.8% in BPN (F=259.08, p <.001). *t* values exceeding 10 confirm strong predictor reliability. The results provide strong empirical support for H1, H2, and H3, identifying interaction as the primary driver of student outcomes. A □ value of .835 for BPN suggests that high quality instructor-student interaction can satisfy the psychological needs, relatedness and competence and can act as a bridge to reduce the 'transactional distance' in online learning. A fostered feeling of relatedness in turn can lead to high engagement at a □ of .719 and overall course satisfaction with a □ of .845. These findings validate 'Teaching Presence' theory by Garrison et al. (2000) and align with Richardson et al. (2017).

4.5 Multiple Regression and Mediation Analysis

Hypothesis 4 tested using multiple regression analysis to evaluate the mediating role of BPN.

Table 6: multiple regression predicting student engagement and satisfaction (H4).

Dependent Variable	□ - Interaction	□ -BPN	Model R^2	*F*
Engagement	.250*	.562***	.613	87.76
Satisfaction	.365***	.575***	.814	242.51

Note. *N* = 114. □ = Standardized Beta; R^2 = Model Explanatory Power; *F* = F-ratio. Significance levels: *p < .05, ***p < .001.

4.5.1 Analysis and Discussion

Multiple regression analysis reveals significant explanatory power. The Interaction and BPN together account for 81.4% of the variance in Satisfaction (F=242.51) and 61.3% in Engagement (F=87.76). BPN is a stronger predictor for both Engagement (□=.562) and Satisfaction (□=.575) compared to direct Interaction. The results provide strong empirical support for H4, confirming that BPN (Relatedness and

Competence) significantly mediate the relationship between instructor interaction and student outcomes. As a partial mediator this suggests Instructor-Student Interaction is effective when it functions as a need-supporter rather than content provider. This validates the Self Determination Theory (SDT) by Ryan & Deci (2000), that effective instructor interaction satisfies the relatedness and can build the competence necessary to master the course content. This explains why interaction leads to higher engagement and satisfaction. As Chiu (2021) states, engagement is not a byproduct of technology but is a result of the supportive learning environment. This aligns with Yang et al. (2025), suggesting that digital learning becomes successful when it empowers student's psychological well-being.

4.6 Summary of Hypothesis Testing

Table 7:summary of hypothesis testing results

Hypothesis	Path	Result
H1	Interaction → BPN	Supported
H2	Interaction → Engagement	Supported
H3	Interaction → Satisfaction	Supported
H4	BPN mediates Interaction → Engagement / Satisfaction	Supported (Partial)

4.7 Synthesis

This study confirms that all four hypotheses are statistically supported ($p < .05$). While instructor interaction directly impacts student engagement and satisfaction, its influence is significantly strengthened when it satisfies the needs for BPN, specifically relatedness and competence. For the rapidly evolving Indian digital landscape, moving towards a learner centric, need-supportive model is essential for achieving successful learning outcomes.

V: CONCLUSION

This study investigated the influence of instructor-student interaction on student engagement and satisfaction in short-term online courses among the Indian graduates by specifically examining the mediating role of basic psychological needs, relatedness and competence. By using a sample size of N=114 and utilizing a regression model, the research established two critical findings;

1) Direct Predictive Power: The instructor-student interaction is a powerful predictor of the basic psychological needs, the relatedness and competence (□ = .835), and both the student engagement (□=.719) and satisfaction (□ = .845).

2) The Mediating Mechanism: Mediation analysis confirms that the basic psychological needs, the relatedness and competence mediate the influence of instructor-student interaction on the student engagement and satisfaction. Instructor interaction acts as a catalyst that fulfills the student's innate psychological needs.

This concludes that academic excellence in short-term online courses in the Indian educational landscape flourishes when instructors transition from merely content providers to need-supporters By fulfilling innate psychological needs, the relatedness and competence the educators can reduce 'transactional distance' and foster the learner engagement and satisfaction.

5.1 Theoretical and Practical Implications

By bridging the Community of Inquiry (CoI) and Self Determination Theory (SDT) this research proves that 'Teaching Presence' is the primary driver for satisfaction of basic psychological needs, specifically relatedness and competence. It shifts the academic focus from whether the interaction matters to how it generates success through psychological pathways in short-term online learning specifically in the Indian educational landscape. Practically the institutions can focus on 1) The faculty training should shift from platform-based training to focus on interpersonal pedagogy that builds students confidence and empathy 2) The curriculum design should integrate interaction fostering models such as personalized feedback loops, structured check-ins 3) Institutions should recognize the quality of instructor-student interaction as

a Key Performance Indicator (KPI). Prioritizing the instructor-student interaction should be viewed as strategic investment for student success and persistence in online learning.

5.2 Limitations and Future Research

The study is limited by cross-sectional design and modest sample size of *N*=114, which may affect generalizability. Data collected by self-reported measures without accounting for external variables like prior GPA or socio-economic factors. Future studies should employ longitudinal design with larger sample size employing mixed method approaches that could identify specific instructor behaviors students find most supportive. Additionally, cross-disciplinary and cross-cultural analyses would determine if these needs vary across different academic subjects or global contexts.

REFERENCES

1. Amoozegar, A., Mousavi, S. H., & Farrokhnia, M. (2023). Instructional immediacy and online course satisfaction during the COVID-19 pandemic in Malaysian higher education: Mediation analysis of perceived learning. *Journal of Computing in Higher Education, 35*(2), 522–544.
2. Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a Community of Inquiry instrument: Testing a measure of the self-report model. *The Internet and Higher Education, 11*(3-4), 133–136. https://doi.org/10.1016/j.iheduc.2008.06.003
3. Bouchrika, I. (2026, January 5). *10 online education trends: 2026 predictions, reports & data*. Research.com. https://research.com/education/online-education-trends
4. Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-Deeder, J., Duriez, B., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion, 39*(2), 216–236. https://doi.org/10.1007/s11031-014-9450-1
5. Chiu, T. K. F. (2021). Applying the self-determination theory (SDT) to explain student's engagement in online learning during the COVID-19 pandemic. *Journal of Research on Technology in Education, 54*(Supp. 1), S1–S18. https://doi.org/10.1080/15391523.2021.1891998
6. Dang, A., Khanra, S., & Kagzi, M. (2022). Barriers towards the continued usage of massive open online courses: A case study in India. *The International Journal of Management Education, 20*(1), Article 100562. https://doi.org/10.1016/j.ijme.2021.100562
7. Das, K., & Das, P. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic in India. *International Journal on Orange Technologies, 2*(6), 5–10.
8. Deep, P. D., Chen, Y., Ghosh, N., & Rahaman, M. S. (2024). The influence of student–instructor communication methods on student engagement and motivation in higher education online courses during and after the COVID-19 pandemic. *Education Sciences, 14*(1), 33.
9. Dixson, M. D. (2015). Measuring student engagement in the online course: The Online Student Engagement scale (OSE). *Online Learning, 19*(4). https://doi.org/10.24059/olj.v19i4.561
10. Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2–3), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6
11. He, Y., Roslan, S., & How, S. P. (2025). Student-instructor interaction as predictor of student engagement in live online courses and recorded online courses. *International Journal of Academic Research in Business and Social Sciences, 15*(10), 173–187. https://doi.org/10.6007/IJARBSS/v15-i10/26596.
12. Kuo, Y. C., Walker, A. E., Belland, B. R., & Schroder, K. E. (2013). A predictive study of student satisfaction in online education programs. *The International Review of Research in Open and Distributed Learning, 14*(1), 16–44. https://doi.org/10.19173/irrodl.v14i1.1338
13. Maya, M., Anjana, V. M., & Mini, G. K. (2022). University student's perceptions of shifting between online and offline learning: Lessons from Kerala, India. *Asian Association of Open Universities Journal, 17*(3), 213–228
14. McNeill, L., & Bushaala, S. (2024). Establishing and maintaining effective online instructor presence: Graduate student perspectives. In C. O. Nja (Ed.), *Prime Archives in Education Research: 2nd Edition*. Vide Leaf.

15. Moore, M. G. (1989). Editorial: Three types of interaction. *American Journal of Distance Education, 3*(2), 1–7. https://doi.org/10.1080/08923648909526659
16. Richardson, J. C., Maeda, Y., Lv, J., & Caskurlu, S. (2017). Social presence in relation to student's satisfaction and learning in the online environment: A meta-analysis. *Computers in Human Behavior, 71*, 402–417. https://doi.org/10.1016/j.chb.2017.02.001
17. Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68
18. Suriyanarayanan, M., Aranganathan, P., Navalgund, N., Baligar, P., Hanji, S. V., & Mahantshetti, S. S. (2025). Unveiling student satisfaction in online learning: Leveraging artificial neural networks for predictive insights. *Journal of Engineering Education Transformations, 38*(2), 520–531.
19. Walker, S. L., & Fraser, B. J. (2005). Development and validation of an instrument for assessing distance education learning environments in higher education: The Distance Education Learning Environments Survey (DELES). *Learning Environments Research, 8*(3), 289–308. https://doi.org/10.1007/s10984-005-1568-3
20. Yang, Y., Chen, J., & Zhuang, X. (2025). Self-determination theory and the influence of social support, self-regulated learning, and flow experience on student learning engagement in self-directed e-learning. *Frontiers in Psychology, 16*, Article 1545980