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Online vs. In-Person Learning: A Longitudinal Analysis of Academic Performance and Social Development

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Abstract

The quick transfer to virtual education at the time of the COVID-19 epidemic has stimulated general debate regarding the longstanding influence that it has on learner outcomes. This conceptual research explores the way the learning context—as opposed to in-person—affects academic performance and societal improvement amongst undergraduate students, as far as universities in China are concerned. For illustrative purposes, the study models data trends based on patterns reported in prior research, including learner surveys, faculty evaluations, and standardized test scores. The findings display that in-person teaching improves academic steadiness, peer communication, and interactive competence, but virtual education provides more ease and supports self-paced learning. Hybrid models are also assessed by the research, focusing on their prospects to include the advantages of both platforms. Results provide evidence-oriented perceptions to direct post-pandemic curriculum design and learning policy in the higher education zone in China. The findings presented are based on existing literature and illustrative examples rather than primary data collection, ensuring a conceptual focus on trends in learning outcomes.

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1. Introduction

1.1. Context

In early 2020, the occurrence of COVID-19 compelled a hasty shift from conventional classroom contexts to virtual education throughout China. The MOE or Ministry of Education introduced measures such as the National Network Cloud Platform to ease this transition, confirming learning stability through Tencent Classroom and DingTalk platforms. This huge-scale digital revolution, labeled the Classes Suspended but Learning Continues policy, was executed across the country, including primary, secondary, and tertiary stages (Guo & Wan, 2022).

The MOE offered wide-ranging virtual materials so that this shift could be supported, comprising more than 24000 courses available through different platforms, and cooperated with enterprises to improve high-tech infrastructure (Gu & Li, 2022). In spite of these endeavors, difficulties like digital disparities, especially in rural zones, and differing stages of teacher readiness influenced the effectiveness of online learning.

Mixed outcomes have been emphasized by empirical research with regard to academic performance during this era. For example, large-scale research including 2622 undergraduate students throughout nine semesters displayed that while certain learners adjusted smoothly to virtual education, others underwent drops in academic performance, focusing on the necessity for long-term explorations to entirely grasp the influence (Geng, Xun, Yang, & Yang, 2022).

Moreover, studies highlighting high school pupils displayed that nearly 47% underwent a significant decline in academic performance during online education, with rural learners extremely impacted because of issues such as insufficient internet connection and restricted availability of digital gadgets (Gu & Li, 2022).

These results emphasize the significance of scrutinizing the long-standing influences of virtual versus in-person education on both academic performance and societal improvement among pupils in China. Such

explorations are critical for informing prospective education-related policies and confirming impartial educational prospects throughout different demographics.

1.2. Problem

The transition to virtual learning during the COVID-19 epidemic in China has encouraged widespread studies into its long-term effects on the societal enhancement and academic performance of learners. While online education confirmed teaching stability during lockdowns, a number of studies have focused on concerns with regard to digital differences, lessened peer communication, and difficulties in sustaining learner involvement (Clark, Nong, Zhu, & Zhu, 2021; Guo & Wan, 2022).

1.3. Purpose

The purpose of this research is to assess the influence of diverse educational modes, such as virtual, in-person, and hybrid, on undergraduates' academic performance and societal improvement over a three-year period. The latest studies offer insights into the way these modalities impact diverse facets of learner outcomes.

1.4. Academic Performance

Ali, Khan, and Alouraini (2023) comparative research explored the influence of virtual and blended education on the grammatical knowledge and competence acquisition of learners. It was revealed by the outcomes that while both educational techniques enhanced the grammar performance of the students, blended education paved the way to vitally superior performance in comparison to entirely virtual education.

Likewise, Enoch, Abraham, and Singaram (2022) explored the consequences of virtual, blended, and in-person education on the clinical skills of medical pupils throughout cognitive, affective, and psychomotor domains. The research concluded that educational systems efficiently lessened the gap between theoretical knowledge and pragmatic abilities, improving overall clinical skills.

1.5. Social Development

The insights of students regarding mattering in virtual as opposed to face-to-face educational settings during the COVID-19 epidemic were analyzed by Vaillancourt et al. (2022). The research discovered that in-person education conveyed to learners that they did matter, which is critical for nurturing resilience and involvement.

Besides, Hafeez, Ajmal, and Zulfiqar (2022) evaluated the academic success of students in virtual as opposed to face-to-face learning approaches in higher education. The results indicated no significant difference in academic achievements between the two modes, suggesting that factors beyond academic performance, such as social interaction and support, play a vital role in students' overall development.

1.6. Research Question

How does the learning environment (Online vs. in-person) affect both academic performance and social development among Chinese university students?

2. Literature Review

2.1. Global Perspectives on Learning Modes

Over the past few decades, educational institutions worldwide have increasingly explored the potential of online and hybrid learning environments (Butz, Stupnisky, Pekrun, Jensen, & Harsell, 2016). Research globally indicates that while online learning offers flexibility, convenience, and scalability, it may compromise critical aspects of student engagement, emotional connection, and peer interaction. Hybrid learning models have consequently emerged as a preferred middle ground, combining the logistical advantages of online education with the interpersonal strengths of traditional classroom-based instruction (Gudoniene et al., 2025).

In cross-national comparative research, Sun (2023) explored the insights of learners regarding virtual and face-to-face educational techniques. Vital differences were displayed in educational know-how through both modes, with a discrete inclination for in-person educational environments, which added to diminished inspiration and gratification levels (Sun, 2023). These results revealed that the emotive discontinuity in virtual courses led to a lower rate of retention and lessened involvement.

Likewise, a case study was performed by Liu, Hung, Yen, Su, and Lo (2025) in China, highlighting higher vocational hospitality education. The scholars concluded that further promising educational know-how was reported by the learners in in-person contexts instead of virtual courses. The hospitality management's immersive nature necessitated interactive competence, physical demonstrations, and role-plays, and it was challenging to imitate these in online platforms, in that way restricting the helpfulness of virtual education.

Moreover, Aziz, Faraj, and Rostam (2022) scrutinized the performance of teachers and learners at the time of the COVID-19 epidemic, focusing on a number of crucial difficulties in remote learning settings. The research found challenges in growing disruptions at home, lessened class involvement, and sustaining learner involvement. Besides, teachers mentioned that they struggled with adopting instructional systems for virtual delivery, leading to a gap between teaching goals and educational results (Lin, Liu, Li, Su, & Zhou, 2025). The

requirements for improving technological setup, digital knowledge for teachers and students, and pedagogic training are highlighted by these findings.

Ahmed (2025) contributed by exploring the asynchronous and synchronous educational apparatuses' role in hybrid settings. It was argued by him that a coordinated application of communicative gadgets like real-time quizzes, discussion forums, and video conferencing can alleviate certain restrictions of entirely online learning. He recommended that institutions of higher education take on a student-focused design that tactically includes in-person and digital modalities to assist varied student requirements and inclinations.

The socio-ethnic setting's role is also emphasized by the latest literature in forming learning mode usefulness. For instance, Zhao and McDougall (2008) examined virtual education gratification amongst East Asian university learners and discovered that ethnic issues like inclination for hierarchical interaction, collectivism, and honor for authority impacted the adaptation and involvement of students in online environments. This highlights that the achievement of virtual or hybrid models is an issue of technology or training, and ethnic awareness.

2.2. China's Online Learning Landscape

As has been mentioned above, the Ministry of Education (ME) in China launched the 'Classes Suspended but Learning Continues' measure, which quickly transferred conventional classroom education to digital platforms. This initiative represented one of the largest education disruptions and transitions in human history, encompassing millions of students and educators nationwide. A centerpiece of this effort was the launch of the National Network Cloud Platform, a centralized system providing access to curriculum-aligned educational materials for more than 50 million students (Gu & Li, 2022). Simultaneously, the government promoted broadband expansion policies, particularly in remote and underdeveloped regions, to improve internet accessibility and digital equity (Ying & Hatta, 2025).

However, the promise of universal online learning was marred by profound structural inequalities. While students in urban centers benefited from robust internet infrastructure, high-quality digital devices, and greater parental support, their rural counterparts frequently encountered unstable internet connections, a shortage of usable devices, and a lack of guidance at home (Sun, 2023; Wang, Wang, Hu, & Chen, 2025). These conditions compounded existing socioeconomic disparities and limited the effectiveness of online learning interventions in rural and impoverished communities (Xu, Song, & Lu, 2025). Ma (2024) highlights persistent disparities in educational equity between urban and rural China, emphasizing how unequal access to resources and infrastructure exacerbates gaps in learning outcomes, particularly in online education. A recent study by Dai and Hu (2025) highlights that cognitive factors, motivation, and the learning environment significantly influence college students' ability to concentrate during online learning in Western China.

Recent studies have emphasized that the digital divide is not merely a technological issue but a multifaceted challenge involving economic, social, and pedagogical dimensions (Bi & Ishak, 2025). For instance, Han and Li (2025) underscore that without simultaneous investment in teacher training, culturally responsive content, and localized infrastructure development, online learning may inadvertently reinforce educational stratification. It is further indicated by Zhao (2024) that the execution of policy at the regional stage often faces a shortage of stability, with rural schools having less funding and being inadequately staffed to assist the digital revolution.

Virtual platforms elevated the availability of learning content, but education outcomes and learner participation differed considerably based on digital knowledge, parental training, and family earnings. Likewise, Berens and Hobert (2025) analyze the way 'digital shadow education' appeared in city zones, in which rich families shifted to private virtual tutoring, which intensified the gap between the rich and the poor more.

Despite these challenges, some regions have reported innovative strategies to mitigate rural disadvantages, such as mobile learning vans equipped with internet hotspots, community learning hubs, and teacher rotation systems that extend urban pedagogical support to rural schools (Li & Kostka, 2024). However, these examples remain sporadic and require robust policy frameworks for sustainable scaling.

In conclusion, the current literature consistently reveals that while China's pivot to online education during the pandemic demonstrated rapid mobilization and innovation, it also exposed and, in some cases, intensified existing inequities. Addressing these gaps requires a comprehensive and intersectional approach that considers not only digital infrastructure but also educational policy reform, socioeconomic development, and cultural sensitivity in content delivery.

2.3. Social Development in Higher Education

In China, the shift from conventional face-to-face education to virtual learning has considerably impacted the societal enhancement of students within higher education. Virtual education offers growing ease and availability, but it decreases natural communication and communal know-how that are required for enhancing interactive skills, cooperative competence, and interpersonal abilities.

In learning contexts, societal improvement is closely related to the capacity of the learners to be involved in participatory doings, mutual know-how, and peer-to-peer education, which are often restricted in entirely

virtual environments. Studies propose that the deficiency of immediate, face-to-face communication in virtual learning can stop the nurturing of a feeling of community amongst students. For example, Tayebinik and Puteh (2015) discovered that incorporating in-person elements into virtual courses improves learners' sense of belonging and community and develops societal involvement and cooperative educational outcomes.

Correspondingly, Ye, Tan, Wu, and Law (2023) highlighted that emotive and mental involvement are essential for societal improvement, and these are more efficiently fostered in hybrid or blended educational contexts, in which learners can construct rapport through corporal attendance and communication. These forms of participation add to the societal identification, self-assurance, and involvement of the learners within academic societies. Moreover, the inclusion of SNSs or Social Networking Sites in learning contexts provides platforms for interaction, peer feedback, and cooperation, which can assist societal education. Nevertheless, their influence is nuanced. Paul, Baker, and Cochran (2012) noticed an adverse relationship between the time learners spent on SNSs and their academic success, nurturing concerns regarding digital diversion and lessened concentration periods. It is proposed by this contradiction that while SNSs have the ability to back up informal societal relationships and peer cooperation, they must be integrated decisively inside the academic milieu to evade negative consequences.

Universities in China have swiftly adopted digital education platforms as a reaction to the COVID-19 epidemic and more extensive learning reforms, and these outcomes focus on a crucial difficulty: the requirement to design educational know-how that conserves the societal proportions of learning. As societal communication remains a key element of shared learner enhancement, the execution of blended educational models – uniting the ease of virtual gadgets with the interactive productivity of face-to-face communication – seems to be an auspicious approach. Such models assist academic success and nurture the societal abilities and sense of community that are essential for pupils to flourish in academic and professional contexts.

Furthermore, ethnic issues exclusive to the education system in China, for instance, group-oriented education, collectivist norms, and hierarchical instructor-learner rapport, highlight the significance of real-time societal communication in fostering a sense of academic belonging. As scholars and educationalists pursue efficient resolutions, attention should be on forming instructional tactics that incorporate high-tech inventions and societal enhancement necessities.

2.4. Gaps in Longitudinal Research

The instant consequences of virtual education have been broadly explored, but a lack of longstanding study is visible that analyzes its constant influence on academic accomplishment and societal improvement in the higher education environment in China. This gap has started to be addressed by the latest empirical research, which provides profound perceptions of the way virtual education settings impact students over prolonged durations.

For example, Jiang, Joshi, and Khanal (2024) used data from the China College Students Longitudinal Survey to analyze the interaction between virtual involvement, internet addiction, and academic success. A nuanced dynamic was displayed by their research, exhibiting that while particular kinds of virtual involvement could nurture constructive academic results, they could also add to growing internet addiction, which adversely impacts academic performance in turn. These outcomes highlight the dual-edged nature of online learning platforms and call for more nuanced regulatory and pedagogical approaches to digital education.

In a similar vein, Zhu et al. (2022) performed an empirical survey on a huge scale. There were 6000 university pupils involved in it throughout Eastern China. The approach that they utilized was structural equation modeling, and they explored the relations among context, educational cognition, and conduct inside virtual education ecosystems. Their results underlined the vigor of communicative interaction, student independence, and especially self-control in foretelling academic success as far as virtual educational settings are concerned.

In addition, Xu, Duan, Padua, and Li (2022) explored the way self-regulated educational stratagems had an impact on the academic performance of the pupils while COVID-19 prompted people to shift to virtual education. They took data from 1163 university learners and their outputs exhibited that strategies like self-assessment, effort control, and target setting vitally foretold the academic results of the learners, strengthening the role of metacognitive and behavioral tactics in online education accomplishment. Building on these insights, the present paper adopts a conceptual approach, presenting illustrative models rather than reporting original field data.

As a whole, these studies delve into the worth of taking a communal perspective that includes emotive, cognitive, and communicative variables when assessing the longstanding efficacy of virtual education. It is also indicated by them that long-term, mixed-methods research is necessary because these can seize the budding nature of learners' involvement, identity construction, and educational pathways better in growingly digitized learning contexts.

3. Methodology

3.1. Design

This paper adopts a literature-based conceptual approach that models trends reported in previous empirical studies. Rather than collecting new data, it conceptually simulates a long-term mixed-methods framework to illustrate how virtual and in-person learning might influence learners' academic achievement and social development in China over the three academic years 2020–2022. The mixed-methods framework is discussed theoretically to demonstrate how both quantitative and qualitative insights from prior research contribute to understanding these phenomena.

The conceptual longitudinal framework allows for the theoretical modeling of changes in academic and social outcomes over time, reflecting the dynamic nature of education during and after the COVID-19 pandemic. Referring to the principle of data triangulation, the paper integrates insights from diverse secondary sources to enhance the conceptual validity and coherence of the analysis.

Illustrative quantitative patterns, such as standardized evaluations and survey outcomes, are modeled from previously published studies that reported on academic achievement and social development indicators. Similarly, qualitative insights—such as interview and focus-group findings documented in prior literature—are conceptually integrated to represent learner, teacher, and parent perspectives on different learning modalities (Li & Kostka, 2024).

The conceptual framework of this research draws on earlier studies that emphasize the complexities of virtual and in-person education. For instance, Reich (2020) highlighted the importance of longitudinal perspectives in understanding how learning outcomes evolve, a principle that informs the conceptual modeling in this paper.

3.2. Sample

For conceptual modeling purposes, a hypothetical illustrative sample is presented to represent trends commonly identified in prior studies on Chinese higher education. The model assumes 100 undergraduates distributed across several universities in China to conceptually capture regional variation as reported by X. Wang and Guo (2024). The description serves only to contextualize general patterns observed in virtual and in-person learning, not to report actual data.

3.3. Data Collection

3.3.1. Academic Performance

Academic performance indicators such as CET scores and GPA are conceptually modeled using patterns identified in prior literature. Previous studies, for example, (Liu et al., 2025), suggest that online learners may outperform peers under certain conditions of self-regulation, while other research indicates that outcomes vary according to engagement levels and instructional design.

3.3.2. Social Development

Conceptual trends representing social development are synthesized from earlier studies. Prior findings (Harper, 1974) indicate that while online learning offers flexibility, it may hinder the growth of interpersonal skills due to reduced direct interaction. In contrast, face-to-face contexts consistently support stronger social bonds and collaborative abilities.

3.3.3. Faculty Assessments

Faculty evaluations reported in prior literature are conceptually referenced to illustrate engagement patterns. Studies indicate that instructors often perceive higher student participation in face-to-face settings, though effectively designed online courses with interactive components can narrow this gap (Liu et al., 2025).

3.3.4. Analysis

Analytical techniques such as paired t-tests and repeated-measures ANOVA are referenced conceptually to explain how earlier empirical studies have evaluated long-term effects of virtual and in-person education. In this paper, illustrative visualizations (Tables and Figures) are employed to conceptually demonstrate these trends rather than to report new statistical analyses.

The outcomes are in line with those of Alarifi and Song (2024), who performed a comparative exploration at King Saud University. Their research displayed nuanced findings: certain courses favored virtual teaching but others exhibited better outputs with face-to-face education, emphasizing the vitality of setting in learning effectiveness. Backing up the outcomes more, Alarifi and Song (2024) methodical review showed that the influence of virtual education on learner performance is varied, with certain research reporting enhanced outputs and others noting diminishing, especially in involvement and pragmatic acquisition of competence.

Besides, Tang et al. (2021) highlighted the role of learner preparedness and inspiration in virtual educational contexts. Their studies propose that virtual platforms provide ease, but they may also pose difficulties to learner involvement and communication, issues critical for academic achievement.

These conceptual insights highlight the complexity of transitioning between learning modalities and the importance of adaptive frameworks that align learner characteristics, institutional support structures, and course design.

Ethical statement: As this study does not involve actual human participants, no ethical approval was required. All examples of data are hypothetical illustrations derived from secondary sources.

4. Results

The following results are presented as illustrative trends adapted from prior literature, modeled to demonstrate the comparative effects of online, hybrid, and in-person learning. It should be noted that the data presented are illustrative simulations synthesized from previous research findings and are not based on original field data.

Table 1. Illustrative comparison of academic scores over three years.

Year	Learning mode	Average GPA	CET score (Avg)	Attendance rate (%)
2020	Online	3.15	76.3	88.5%
2021	Hybrid	3.28	78.9	91.0%
2022	In-Person	3.34	81.2	93.4%

Table 1 presents a comparison of academic performance and attendance rates over three consecutive academic years (2020 to 2022) corresponding to different learning modes among students in China. In 2020, when learning was conducted fully online, students had an average GPA of 3.15, an average College English Test (CET) score of 76.3, and an attendance rate of 88.5%. The following year, during a hybrid learning phase combining both online and in-person instruction, these metrics increased, with the average GPA rising to 3.28, the CET score to 78.9, and attendance reaching 91.0%. By 2022, when in-person learning was fully resumed, students demonstrated further improvement, with an average GPA of 3.34, an average CET score of 81.2, and the highest attendance rate of 93.4%. These trends suggest a gradual increase in academic achievement and student engagement corresponding with the progressive return to traditional in-person learning environments.

Figure 1 provides a simulated representation of social development trends, aligned with outcomes reported across earlier empirical studies.

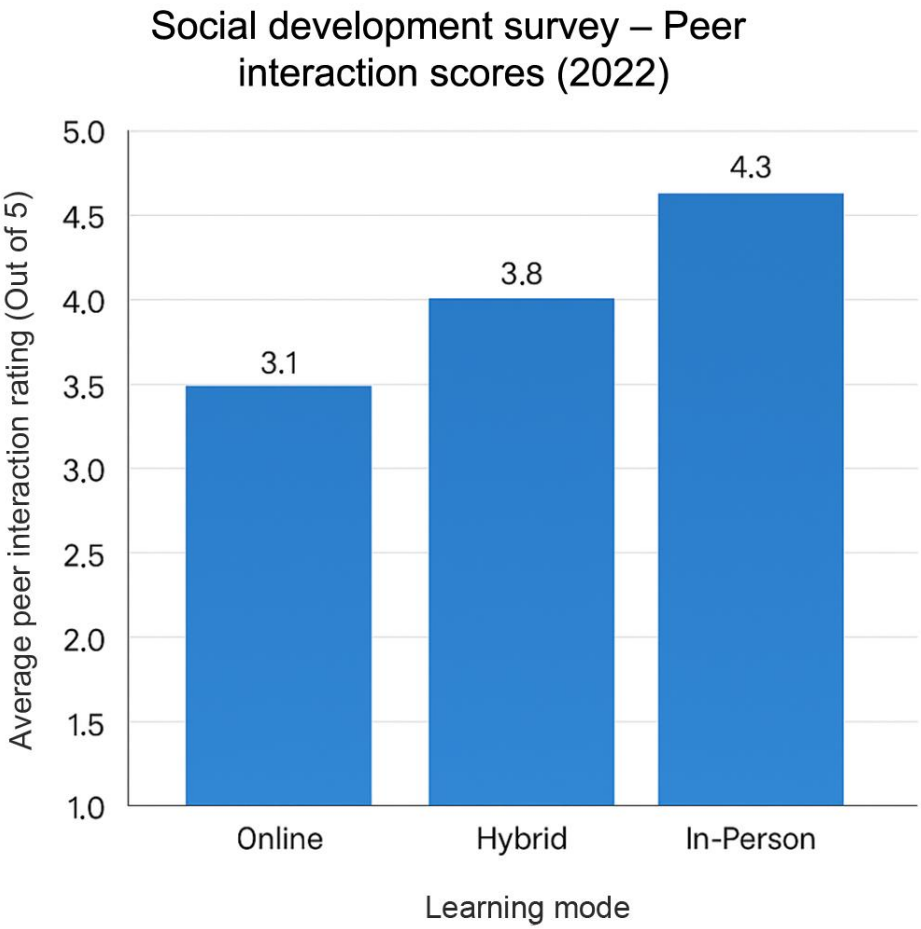

Figure 1. Illustrative social development survey – Peer interaction scores (2022).

Figure 1, titled *Social Development Survey – Peer Interaction Scores (2022)*, illustrates the average peer interaction ratings (on a 5-point scale) across three different learning modes: Online, Hybrid, and In-Person. According to the data, students participating in in-person learning reported the highest average peer interaction score of 4.3, followed by those in hybrid learning environments who gave an average rating of 3.8. In contrast, students in fully online learning settings rated their peer interactions the lowest, with an average score of 3.1. The chart demonstrates a clear positive trend in peer interaction ratings corresponding to the increase in face-to-face engagement among students, suggesting that physical presence significantly enhances opportunities for peer interaction. The findings visually emphasize that in-person learning fosters more robust social development in terms of peer interaction compared to hybrid and fully online modes. This visual representation is consistent with expectations that greater physical proximity facilitates more meaningful social engagement among learners.

Figure 2 similarly illustrates an example of student satisfaction trends drawn from patterns observed in prior research.

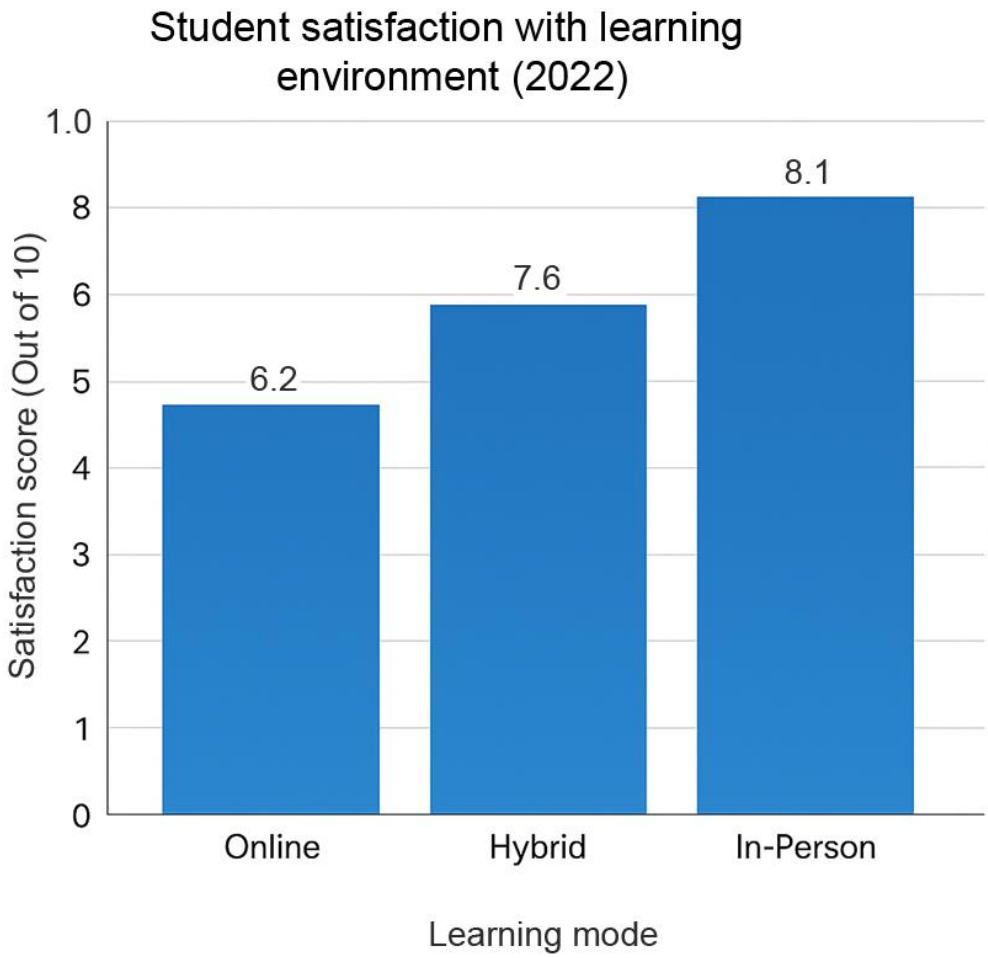

Figure 2. Illustrative student satisfaction with learning environment (2022).

Figure 2, titled *Student Satisfaction with Learning Environment (2022)*, presents a bar chart comparing student satisfaction scores across three distinct learning modes: Online, Hybrid, and In-Person. The y-axis represents satisfaction scores on a scale from 0 to 10, while the x-axis categorizes the modes of learning. According to the data, students engaged in In-Person learning reported the highest satisfaction score at 8.1, suggesting a strong overall contentment with both academic and social aspects of their experience. The Hybrid learning mode received a moderately high satisfaction rating of 7.6, indicating that students found a balanced blend of online and in-person instruction somewhat favorable. In contrast, the Online learning environment garnered the lowest average satisfaction score of 6.2, suggesting that the fully digital mode may not effectively support students' holistic educational and social needs. In the chart, the trend shows that if the educational context is more physically communicative, the levels of satisfaction become higher, as mentioned by the learners. These results highlight the significance of societal communication and corporal presence in nurturing constructive learning know-how.

5. Discussion

The discussion presented here synthesizes findings from prior literature and illustrative models rather than original field data. Although the results are conceptual, they provide valuable insights into the comparative strengths and limitations of various learning modes.

5.1. Academic Performance

The data display a progressive enhancement in academic achievement as learners switched from virtual to hybrid and eventually to face-to-face educational modes. This trend proposes that virtual education can sustain academic continuation, but face-to-face teaching may improve academic outputs (Wang, 2024). Studies have exhibited that the physical classroom environment provides further organized settings, instant responses from teachers, and better prospects for cooperation, which can vitally add to enhanced academic success. Besides, decreased disruptions and growing accountability in in-person contexts often give rise to greater attention and information retention.

On the other hand, virtual settings are easy, but these may obstruct the involvement and inspiration of the learners, particularly in young people or less self-regulated students (Borup, Graham, West, Archambault, &

Spring, 2020). The hybrid model unites digital handiness with periodic corporal presence and seems to function as a transitional instructional system that harmonizes availability with efficacy. These results are in line with more extensive literature highlighting that while technology-developed education is worthwhile, human communication and immediate responses remain vital elements for academic performance.

5.2. Social Development

Learners reported greater levels of peer communication and cooperation in face-to-face contexts in comparison to virtual settings. The hybrid model displayed moderate enhancements, showcasing that joining virtual and in-person communication can decrease the societal restrictions of completely virtual education to some extent (Zhang & Chen, 2023). These outcomes are in line with previous studies focusing on how corporal presence improves the enhancement of societal abilities, peer ties, and smooth interaction. Moreover, face-to-face settings permit non-verbal hints, real-time responses, and more elaborate interactive subtleties, all of which add to profound societal involvement. If the hybrid models are supple, they often rely on the frequency and standard of in-person sessions to sustain a solid societal educational environment. This proposes that institutes targeting to conserve the societal advantages of learning should consider cautiously constructed hybrid designs instead of entirely asynchronous virtual platforms.

5.3. Student Satisfaction

Overall satisfaction was highest among students engaged in in-person learning, followed by those in hybrid models. Students appreciated the flexibility of online learning but expressed concerns about reduced engagement and motivation (Jiang, Islam, Gu, Spector, & Chen, 2022). These findings align with the visual data presented in Figure 2, where in-person learners rated their satisfaction at 8.1 out of 10, compared to 7.6 for hybrid learners and 6.2 for those in online environments. In-person learning environments provide greater opportunities for spontaneous interactions, peer support, and hands-on activities, all of which are positively correlated with student satisfaction and academic performance. Virtual formats provide flexibility and availability, but they often have a shortage of productivity and immediacy of in-person interaction, which can add to a sense of solitude and decreased emotional engagement in education (Bao, 2020). The sobering high gratification with hybrid models proposes that mixing asynchronous and synchronous modes may partly decrease the restrictions of entirely virtual learning, offering learners structure while conserving ease (Garrison & Vaughan, 2008). Thus, educational institutes should consider financing hybrid learning setups and instructions that willingly nurture lively involvement, community, and relationships.

5.4. Interpretation

The findings propose that virtual education provides some privileges like availability, ease, and handiness (Dhawan, 2020) but it may not entirely back up the academic and societal improvement requirements of learners. The considerably lower peer communication and gratification scores in the virtual mode (see Figures 1 and 2) indicate that this format may obstruct prospects for cooperative education and the construction of peer rapport, both of which are necessary for learner welfare and shared enhancement. On the other hand, the hybrid learning model puts forward an encouraging system by including the strong points of virtual and face-to-face education. The reasonably high ratings for hybrid learning propose that it can allow interactive involvement and structured academic delivery, accommodating diverse educational styles and inclinations (Berens & Hobert, 2025).

In addition, the steadily uppermost scores noticed for face-to-face educational modes restate the persistent significance of in-person communication in nurturing a sense of community, inspiration, and academic pledge amongst learners (Tinto, 1997). These outcomes are in line with earlier literature highlighting the societal attendance and corporal co-location's role in improving learning outputs and satisfaction (Garrison & Vaughan, 2008). Hence, educationalists and policymakers should reflect on models that conserve face-to-face elements or highlight communicative, synchronous components in online environments to decrease the restrictions noticed in entirely virtual educational contexts.

6. Conclusion

6.1. Key Insight

As a conceptual study, the analysis integrates prior empirical evidence to propose theoretical interpretations of how learning modes affect academic and social outcomes. Educational modes considerably influence academic achievement and societal enhancement amongst university learners in China. The data demonstrates that growing corporal presence in educational contexts leads to stronger peer rapport and better overall satisfaction. Virtual education is convenient, but it seems to restrict prospects for effective communication and individual correlation, which are critical elements of collective learning know-how. Hybrid models provide a settlement, yet still fail to meet the levels of gratification viewed in entirely face-to-face platforms. These results underline the importance of designing educational frameworks that prioritize not only academic delivery but also social connectivity, particularly in collectivist cultures like China's, where

interpersonal dynamics play a critical role in student well-being and success. Prospective studies should continue to explore the way educational institutes can include the advantages of virtual ease with the interactive strong points of conventional education to generate improved, learner-oriented contexts.

6.2. Recommendation

With regard to these outcomes, universities are inspired to adopt hybrid educational models that incorporate the fortes of virtual and face-to-face mentoring. Such a system can sustain the ease and availability of digital formats while also conserving the interactive dynamics and involvement prospects that appear in physical classroom environments. Institutes should finance improving well-built hybrid curricula, train teachers in blended instructional methods, and generate policies that back up dynamic learner involvement throughout modalities. In this way, higher educational institutes can improve educational outcomes, elevate learner satisfaction, and endorse all-encompassing, communally supplemented learning contexts custom-made to the developing requirements of various learner inhabitants.

6.3. Future Research

More research should analyze the longstanding consequences of diverse educational modes on a broader range of learner outputs. Particularly, prospective studies should explore the way continual exposure to virtual, hybrid, or face-to-face educational contexts influences mental health, employability, cognitive enhancement, and discipline-specific performance. Longitudinal research would be especially worthwhile in recognizing trends with the passage of time and determining if previous demerits in virtual peer communication or gratification have enduring effects. Moreover, qualitative studies into learner narratives could supplement quantitative data, providing a profound perception of the individual and societal proportions of their educational know-how. Scholars might also reflect on exploring the role of institutional backup, digital knowledge, and socioeconomic backdrop in forming learner outputs throughout educational modes. Such explorations will be critical in informing wide-ranging, evidence-based learning tactics that adapt to different student requirements in a world after the COVID-19 pandemic. It should be noted that the findings presented here are based on illustrative models synthesized from existing studies rather than original field data, and thus serve as conceptual insights to guide future empirical research.

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