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Nama Jurnal	:	*International Journal of Information and Education Technology*
Link Scopus	:	https://www.scopus.com/sourceid/21100921050
Link Scimagojr	:	https://www.scimagojr.com/journalsearch.php?q=21100921050&tip=sid&clean=0 (Scopus Q3)
Judul Artikel yang direview:	:	*Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support System*
Bulan, Tahun Artikel yang direview	:	Mei 2025 (1st *Round*)

Manuscript ID: IJIET-17845 – Article Review Request

Ms. Mia Hu <mia.hu@ejournal.net>
To: Wahyuni Sri <wahyunis@edu.uir.ac.id>

Tue, May 27, 2025 at 1:13 PM

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We have received the following manuscript to be considered for publication in International Journal of Information and Education Technology (http://www.ijiet.org/) and kindly invite you to provide a review to evaluate its suitability for publication:

Manuscript ID: IJIET-17845
Title: Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems
Submission URL: https://ojs.ejournal.net/index.php/ijiet/reviewer/submission?submissionId=17845&reviewId=107241&key=F9hEte

The submission's abstract is inserted below. Please click on the link above to access the manuscript, and inform us whether or not you will be able to provide a review.

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Thank you for considering this request.

Ms. Mia Hu

mia.hu@ejournal.net

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Indexed in Scopus (CiteScore 2023: 2.8)

Title: Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems

Abstract:

This study aims to explore the impact of technological advancements specifically artificial intelligence (AI) integration, data analytics, and virtual guidance platforms on student satisfaction with educational counselling services. Additionally, the research investigates the mediating role of personalized student support in these relationships. The study addresses the growing need for innovative solutions to enhance student experiences in the context of educational counselling. A quantitative research design was employed, utilizing a survey methodology. Data was collected from 232 students enrolled in higher education institutions in China, who had utilized educational counselling services. The data was analyzed using SPSS, with regression analyses conducted to examine the direct and mediated effects of technological advancements on student satisfaction. Mediation analysis was performed to explore the role of personalized support. The study found that AI integration, data analytics, and virtual guidance platforms all had a significant positive impact on student satisfaction with educational counselling services. Furthermore, the personalization of student support was found to mediate the relationship between these technological factors and student satisfaction, emphasizing the importance of tailored services in enhancing the student experience. This research contributes to the literature by providing empirical evidence on how technological innovations can transform educational counselling services. The findings have practical implications for educational institutions seeking to enhance student satisfaction through the integration of advanced technologies and personalized support mechanisms.

Manuscript ID: IJIET-17845 - Automated Review Request Reminder

IJIET Submission Editor <editor@ijiet.org> Sat, May 31, 2025 at 8:48 AM
To: Wahyuni Sri <wahyunis@edu.uir.ac.id>

Dear Wahyuni Sri,

Just a gentle reminder of our request for your review of the submission, "Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems," for International Journal of Information and Education Technology. We were hoping to have your response by 2025-05-30, and this email has been automatically generated and sent with the passing of that date.

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Review:Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems

Request for Review

You have been selected as a potential reviewer of the following submission. Below is an overview of the submission, as well as the timeline for this review. We hope that you are able to participate.

Article Title

Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems

Abstract

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- ( ) Acceptable

Significance of Contribution *

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- (•) Good
- ( ) Acceptable
- ( ) Marginal
- ( ) Poor

Technical Soundness *

- ( ) Excellent
- (•) Good
- ( ) Acceptable
- ( ) Marginal
- ( ) Poor

Quality of Presentation *

- ( ) Excellent
- (•) Good
- ( ) Acceptable
- ( ) Marginal
- ( ) Poor

Comments to Authors *

This manuscript presents a relevant and well-executed study on the impact of artificial intelligence, data analytics, and virtual guidance platforms on student satisfaction with educational counselling services, with a particular emphasis on the mediating role of personalized support. The topic is timely and important, especially as educational institutions increasingly adopt digital tools to enhance student services. The integration of the Technology Acceptance Model (TAM) and Expectation-Confirmation Theory (ECT) provides a solid theoretical foundation, and the empirical findings offer meaningful contributions to both theory and practice. However, there are areas for improvement. The literature review, while comprehensive, could benefit from more concise presentation to enhance

Comments to Editor (will not be visible by author)

This manuscript offers a timely and relevant contribution to the literature on educational counselling and technology integration. It investigates the effects of artificial intelligence, data analytics, and virtual guidance platforms on student satisfaction, with a well-founded focus on the mediating role of personalized support. The study is methodologically sound, with appropriate use of validated instruments, mediation analysis, and reliability testing. The findings are practically useful for higher education institutions and theoretically grounded through TAM and ECT frameworks.

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Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems

Abstract

Purpose: This study aims to explore the impact of technological advancements specifically artificial intelligence (AI) integration, data analytics, and virtual guidance platforms on student satisfaction with educational counselling services. Additionally, the research investigates the mediating role of personalized student support in these relationships. The study addresses the growing need for innovative solutions to enhance student experiences in the context of educational counselling.

Method: A quantitative research design was employed, utilizing a survey methodology. Data was collected from 232 students enrolled in higher education institutions in China, who had utilized educational counselling services. The data was analyzed using SPSS, with regression analyses conducted to examine the direct and mediated effects of technological advancements on student satisfaction. Mediation analysis was performed to explore the role of personalized support.

Findings: The study found that AI integration, data analytics, and virtual guidance platforms all had a significant positive impact on student satisfaction with educational counselling services. Furthermore, the personalization of student support was found to mediate the relationship between these technological factors and student satisfaction, emphasizing the importance of tailored services in enhancing the student experience.

Originality/Implications: This research contributes to the literature by providing empirical evidence on how technological innovations can transform educational counselling services. The findings have practical implications for educational institutions seeking to enhance student satisfaction through the integration of advanced technologies and personalized support mechanisms.

Keywords: Artificial Intelligence, Data Analytics, Virtual Guidance Platforms, Student Satisfaction, Personalized Support

Introduction

The educational counselling landscape has dramatically shifted with the incorporation of cutting-edge technologies like artificial intelligence (AI), data analysis, and virtual advisory systems (Al-Mseidin et al., 2023). Historically, counselling services were highly dependent on face-to-face communication, one-on-one advisory sessions, and manual evaluation of students' career and academic requirements (Henríquez et al., 2024). But new technologies have brought new paradigms to learning support systems with improved efficiency, accessibility, and personalization (Bwachele et al., 2023). Artificial intelligence today can also give predictive student behavior feedback, suggest customized learning paths, and perform routine counselling processes automatically (Aravind & Kavitha, 2024). Likewise, data analytics have made learning institutions capable of extracting meaningful insights from massive amounts of student data, enhancing intervention accuracy (Sankaran et al., 2023). Virtual counselling websites providing 24/7 access

to counselling material have also increased the support hours outside regular office timings (Ignacio, 2023). As digitalization penetrates further into the education system, interest in how the technologies affect students' satisfaction with counselling services increases (Chang et al., 2023). The present study is positioned at the nexus of educational technology, student support systems, and service satisfaction, seeking to unravel the processes by which AI integration, data analytics, and virtual platforms affect the student counselling experience.

Previous research has comprehensively examined the impact of technological advancements on educational counseling outcomes. Researchers have discovered that AI-driven systems have the ability to increase the effectiveness and precision of educational counseling, providing predictive insights into career planning and course enrollment (Das et al., 2023). AI-powered chatbots and virtual assistants have been found to decrease response times by a considerable margin and enhance response consistency of information provided to students (Depa, 2025). Empirical research by (Ellikkal & Rajamohan, 2024) also revealed that AI-powered adaptive counselling systems that adapted recommendations according to student learning patterns yielded greater levels of learner satisfaction than conventional methods. Data analytics has also become a pioneering instrument in education counselling. (Stewart et al., 2023) discovered that predictive modelling based on academic performance and behavioral data can detect underperforming students at an earlier stage, and intervention can be initiated in a timely manner. Additionally, data analytics-driven interventions were found to be associated with improved learning outcomes and more efficient counselling perceived by students (Khor & K, 2023). In contrast, virtual guidance platforms too have been a subject of robust empirical analysis. For instance, (Fatima et al., 2024)found virtual platforms that delivered real-time chat, online databases of materials, and personalized career tests were strongly associated with the general satisfaction that students felt for counselling services. Moreover, virtual platforms were also seen to widen access, whereby support services were more easily reached by students having scheduling or mobility concerns (Rosmalina, 2023). Collectively, these studies identify the potential of technology to revolutionize student lives in school counselling. While the explicit impact of AI, data analytics, and virtual platforms on outcomes in counseling has been thoroughly documented, fewer studies have attempted to explore underlying mechanisms especially the contribution of tailored support to the formation of these associations (Gm et al., 2024). Recognizing this gap, the present study delves deeper into how personalization mediates the relationship between technological integration and student satisfaction.

Notwithstanding the increasing literature on the study of technology's contribution to educational counselling, there are still significant gaps. For one, most of the literature so far views the implementation of AI, data analytics, and virtual platforms as independent variables, without accounting for the synergistic or combined effects they might have on the counselling process (Al-Mseidin et al., 2023). Most studies assess these technologies in isolation, thus failing to realize how they enhance or detract from student satisfaction collectively. Second, personalization even though often argued as a positive effect of technology, is hardly ever investigated as a mediating process (Shoaib et al., 2024). Other work tends to speculate that personalization happens organically as a collateral effect of utilizing technology, although few studies establish empirically the extent to which personalized assistance translates technological potential to enhanced satisfaction measures (Wu et al., 2024). Additionally, most studies examine short-term behavioral effects, e.g., more service use or performance, with comparatively fewer studies emphasizing

emotional and perceptual outcomes such as satisfaction, loyalty, or perceived support quality (Velastegui et al., 2023). Another significant gap is population diversity: AI and virtual platform research is mostly focused on Western educational contexts, with few studies exploring diverse or non-Western environments where cultural, technological, and institutional variations can influence the impact of these innovations (Kaswan et al., 2024). Filling these lacunae, the present research takes up a holistic model that incorporates AI, data analytics, and virtual platform accessibility, examines the mediating impact of individualized student support, and targets particularly student satisfaction in educational counselling systems. Thus, the present research has the following objectives:

- To examine the impact of artificial intelligence integration on student satisfaction with educational counselling services.
- To investigate the effect of data analytics usage on student satisfaction with educational counselling services.
- To analyze the influence of availability of virtual guidance platforms on student satisfaction with educational counselling services.
- To explore the mediating role of personalization of student support in the relationship between technological advancements (ai, data analytics, virtual platforms) and student satisfaction.

This research makes a significant contribution to educational counselling by providing a rich perspective on the impact of technological instruments on student satisfaction, not only through immediate channels but through the pivotal intermediary of personalized guidance. As more institutions make investments in AI infrastructure, data analytics platforms, and digital guidance solutions, empirical research on the impact of these technologies assumes critical importance. By revealing the mediating function of personalization, the research emphasizes that it is not sufficient to embrace technology but that efforts should be made to ensure that it is employed to address individual student needs. This is of critical practical significance for designing, implementing, and evaluating educational counselling services in the digital age. In addition, the findings add to the theoretical development of the educational technology and student support literature, providing directions for research and practice in the future.

Literature Review

Artificial Intelligence Integration and Student Satisfaction with Educational Counselling Services

Artificial intelligence (AI) integration is the use of smart computer systems, including machine learning, natural language processing, and predictive analytics, to improve learning processes, including student counselling services (Vashishth et al., 2024). Student satisfaction with educational counselling services is a measure of how much students value the counselling services they receive in terms of how much they believe these services exceed or meet their expectations in dimensions such as responsiveness, personalization, quality of guidance, and accessibility (Ameloot et al., 2024). Integration of AI in counsellling services allows for real-time feedback, auto-suggest, virtual assistant communication, and data-driven customization of counsellling sessions (Al-Mseidin et al., 2023). Use of AI technologies can potentially result in more customized advice, faster turnaround times, and increased availability of services when there are

no human counsellors available (Su et al., 2024). AI-based platforms can also review student histories, interests, and performance records to recommend individualized education routes or career choices, thus enhancing the counselling process and making assistance more contextual and actionable to students' individual situations (Gm et al., 2024).

Previous empirical studies highly supported the positive role of AI in raising the level of student satisfaction within educational support systems. (Depa, 2025) studies discovered that chatbots based on AI highly enhanced the perceived availability and responsiveness of services among the students, thereby raising the level of satisfaction. Similarly, (Bwachele et al., 2023)highlighted through a study that AI-powered academic advising systems improved perceived timeliness and relevance of advice, which further directly contributed to students' satisfaction levels with support services. According to a study by (Missun & Omar, 2024), AI-driven virtual counselling platforms led to increased student empowerment through 24/7 advice and increased personalized recommendations. Together, these results suggest that when AI technology is deployed into counselling systems intentionally, they can enhance the quality, effectiveness, and individualization of education counselling.

H1: Artificial intelligence integration has a significant impact on student satisfaction with educational counselling services

Use of Data Analytics and Student Satisfaction with Educational Counselling Services

Educational counselling data analytics is the methodical gathering, processing, and interpretation of student-related information to guide counselling activities, individualize student interactions, and forecast future requirements (Ameloot et al., 2024). It entails the analysis of information like academic performance, attendance, behavioral indicators, and career interests to provide tailored support (Henríquez et al., 2024). Student satisfaction with educational counselling services is still operationalized as the degree to which students perceive that the counselling they are receiving is responsive, effective, and specific to their own needs (Bwachele et al., 2023). Data analysis enables counsellors to move from being reactive to proactive, identifying at-risk students earlier and providing timely referrals (Sankaran et al., 2023). It also encourages a more objective and evidence-based approach to counselling by removing guesswork and bias and thus fostering an atmosphere of credibility and trust among students who use the services (Al-Mseidin et al., 2023).

Empirical evidence continuously references the centrality of data analysis in fostering students' satisfaction with support facilities within schools. According to (Rosmalina, 2023), student satisfaction rates in schools that infused predictive analysis within counselling models were boosted by 30%, thanks to students' appreciation for support interventions being rendered appropriately timely and relevant. (Stewart et al., 2023) also confirmed that data-informed counseling programs increased advice personalization and improved perceived helpfulness of the sessions, with a positive correlation to student satisfaction increase. A study conducted by (Tzimas & Demetriadis, 2024) confirmed that data analysis facilitated better monitoring of students' progress and goal attainment, and students perceived more empowerment and satisfaction with services received. According to this empirical information, the following is predicted:

H2: Use of data analytics has a significant positive impact on student satisfaction with educational counselling services.

Availability of Virtual Guidance Platforms and Student Satisfaction with Educational Counselling Services

Virtual guidance platforms are digital platforms that enable remote educational counselling, with services like online advising, career counselling, psychological support, and academic coaching through web portals, mobile applications, or virtual realms (Fatima et al., 2024). Live chat support, video conferencing, self-service modules, and AI-based recommendation systems are some of the common features included in virtual guidance platforms (Ignacio, 2023). In the present research, satisfaction of students with educational counseling services is still conceptualized as the perceived fulfillment of the students towards the effectiveness, accessibility, and individualization of the counseling interventions (Missun & Omar, 2024). The presence of virtual guidance platforms widens the reach of counseling services beyond geographical constraints, being more flexible and timely, particularly for students with barriers of time, place, or access to campus services (Rızvı, 2023). These platforms can serve different student populations and provide assistance according to their schedule and requirements, something that can affect their overall satisfaction levels (Rosmalina, 2023).

Empirical research has good evidence of positive correlation between access to virtual guidance platforms by students and student satisfaction. (Suryawati et al., 2024) study determined that students using virtual counselling services recorded much higher levels of satisfaction, attributing this to higher access and shorter waiting times. In a study by (Tzimas & Demetriadis, 2024), virtual platforms had a positive impact on students' sense of autonomy and convenience, which are the major predictors of counselling satisfaction. Likewise, a study conducted by (Jaber & Al-Hroub, 2023) found that students' use of virtual guidance mechanisms increased their emotional attachment and perceived support of the counsellor, resulting in more positive evaluations of counselling sessions. As a result, when virtual space is accessible and within reach, the educational counselling service will be seen as more flexible, accommodating, and responsive to individual student needs. Empirically therefore, it is predicted that:

H3: Availability of virtual guidance platforms has a significant impact on student satisfaction with educational counselling services.

Personalization of Student Support as Mediator

Previous empirical studies continuously emphasize the imperative role that personalization has in connecting artificial intelligence (AI) integration to successful student outcomes. (Ellikkal & Rajamohan, 2024) research identified that AI technologies applied to educational advising, such as adaptive chatbots and predictive recommendation systems, amplified personalization through advice tailored from students' past academic and behavioral data. Likewise, findings from research conducted by (Gm et al., 2024) revealed that AI-driven systems could identify individual learning patterns and counseling choices, highly increasing the perceived quality of advice. Additionally, (Kaswan et al., 2024) illustrated that personalization mediated AI technology's influence on satisfaction for service in educational service settings to a greater degree, which infers that absent robust personalization processes, AI alone fails to fully underlie satisfaction. Therefore, evidence suggests that personalization is an important go-between facilitating the technical capabilities of AI to manifest into useful student experiences and satisfaction.

Drawing on these results, it is argued that student support personalization acts as a mediator between artificial intelligence integration and student satisfaction with educational counselling services (Zhong, 2023). While AI integration offers the means and capabilities to analyze intricate student data, its effect on satisfaction depends on how well these insights are personalized to specific student needs (Khor & K, 2023). Without proper personalization, AI-based services can seem standardized and miss students' expectations for customized care (Vashishth et al., 2024). Thus, it is presumed that personalization of student care is one primary mechanism through which integration of AI contributes to higher student satisfaction with educational counselling consistent with current empirical evidence on the importance of personalized interventions in technology-mediated learning contexts.

H4: Personalization of student support mediates the relationship between artificial intelligence integration and student satisfaction with educational counselling services

Empirical findings highlight that data analytics in educational counselling benefits most based on the quality of how insights obtained are customized for individual students. For example, (Limbu & Pham, 2023) highlighted that student satisfaction is enhanced by data analytics when counsellors apply data to customize interventions, rather than providing generic advice. Likewise, a study by (Rehman & Sajjad, 2024) revealed that predictive analytics software that segmented students into individuated risk groups obtained significantly higher satisfaction scores than generalized, non-personalized methods. A longitudinal survey by (Rosmalina, 2023) also revealed that real-time academic tracking-enabled personalization of counseling strongly mediated the impact of data use on perceived quality of service. Therefore, the current empirical evidence strongly substantiates that personalization is a key mechanism that directs the payoffs from data analytics into concrete student satisfaction results.

Based on this base of research, it is also predicted that personalized support for the student mediates the link between data analytics being used and how satisfied students become with educational counsellor services (Tzimas & Demetriadis, 2024). Although a rich source to understand student potentials, risks, and behaviors exist through data analytics, the very impact on satisfaction is only activated when counsellors interpret and turn these interpretations into highly bespoke support plans for the student (Sankaran et al., 2023). Without the mediating role of personalization, students might not realize the actual worth of data-driven counselling, and levels of satisfaction would be the same.

H5: Personalization of student support mediates the relationship between use of data analytics and student satisfaction with educational counselling services

Previous studies repeatedly identify that the existence of virtual guidance platforms enhances students' satisfaction primarily by facilitating more customized support experiences. According to a study conducted by (Subaveerapandiyan et al., 2024), students who utilized virtual counselling platforms had higher satisfaction rates when they were provided with personalized feedback and customized resources compared to generic advice. Similarly, research by (Fatima et al., 2024)found that virtual platforms offering personalized routes for academic and career development greatly enhanced students' satisfaction and engagement rates compared to those that only provided static information. Another research work by (Ignacio, 2023) again emphasized that

personalization, i.e., customized messaging and scheduling of sessions, was a mediating variable between availability of digital platforms and perceived effectiveness of counselling. These findings cumulatively substantiate that personalization is an important element that enables virtual platforms to transform accessibility into better quality student experiences.

On the basis of empirical data, it is hypothesized that student support personalization acts as a mediator between virtual guidance platform availability and student satisfaction with educational counseling services (Jaber & Al-Hroub, 2023). While virtual platforms increase the accessibility and convenience of counselling services, their impact on satisfaction is substantially enhanced if they provide personalized interactions, advice, and content (Rehman & Sajjad, 2024). Standardized virtual interactions can be ineffective in catering to students' unique needs, hence reducing the platforms' potential to raise satisfaction levels.

H6: Personalization of student support mediates the relationship between availability of virtual guidance platforms and student satisfaction with educational counselling services

Theoretical Framework Supporting the Research

The tested relationships in this study are based on the Technology Acceptance Model (TAM) of (Davis, 1989) and the Expectation-Confirmation Theory (ECT) developed by (Bhattacherjee, 2001), both of which jointly form a firm theoretical framework of how technological innovation affects student satisfaction through personalization. In TAM, the perceived ease of use and usefulness of technology systems, like artificial intelligence, data analytics, and virtual guidance systems, directly affect user attitudes and satisfaction. In educational counselling, the adoption of AI and data analytics enhances service usefulness through more precise, responsive, and personalized assistance (Aravind & Kavitha, 2024). In the meantime, ECT postulates that users make satisfaction judgments in accordance with the degree to which their expectations are exceeded or met. Personalization is the primary vehicle by which students' expectations for tailored assistance are met, thus supporting satisfaction with counselling services (Imran et al., 2024). Therefore, theoretical modeling hypothesizes that although technological advancements directly influence student satisfaction, student support personalization is critical in mediating these associations as consistent with existing research emphasizing the pivotal role of customized experiences to realize service satisfaction in digital learning environments (Rehman & Sajjad, 2024). Consequently, this research suggests a conceptual framework that shows the direct connections between artificial intelligence integration, data analytics use, and virtual guidance platforms availability with student satisfaction, and the mediating function of personalization of student support (see Figure 1: Conceptual Framework).

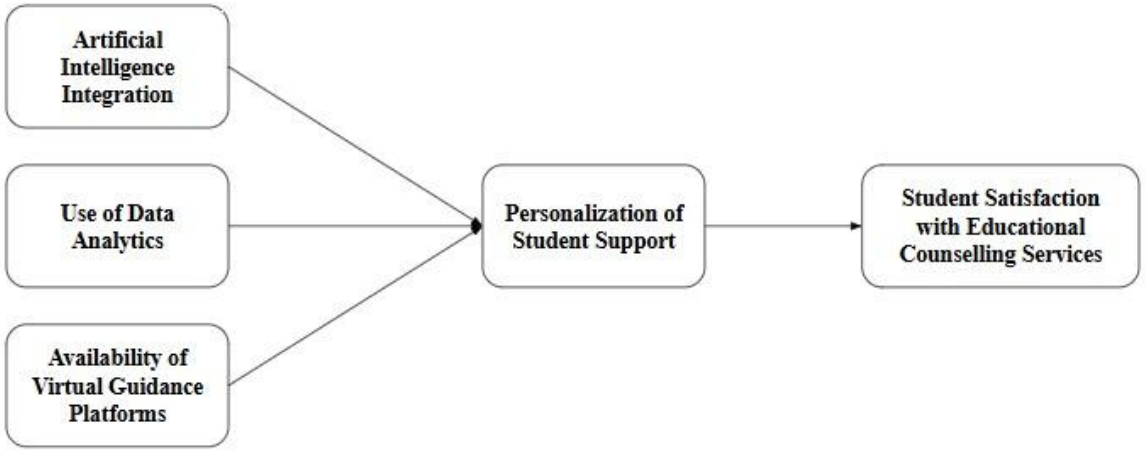

Figure 1: Conceptual Framework

Methodology

Research Design

The present research used a quantitative approach in terms of the design, and the cross-sectional survey method was adopted for the purpose of gathering information from higher education students in China in relation to measuring experiences in educational counselling services and the corresponding satisfaction levels with those services.

Population

The sample for this study comprised students from different higher learning institutions in China. The students were enrolled in educational counselling services from their institutions. The research intended to collect information from a wide range of students in order to ensure that the results would be widely generalizable across students from different academic fields and backgrounds. As the study involves student satisfaction with counseling services, the population was narrowed down to individuals who had utilized or been in contact with such services, and thus were applicable candidates for the study.

Sample Size and Sampling Technique

232 students were chosen as the sample for this research. The statistical power analysis was used to determine the sample size such that the data gathered would be of a quality that would allow identification of significant relationships between variables. A non-probability convenience sampling method was used to recruit participants. This method was used for the practical benefits of convenience and ease of access in collecting data from students who had utilized educational counselling services. Convenience sampling was found to be the appropriate approach, where the aim was to collect a general sample of students capable of offering meaningful opinions on the aims of the study. The participants were recruited from a variety of institutions in China to ensure

diversity and to improve the generalizability of the findings within the Chinese higher education context.

Data Collection

Data was gathered through an online survey administered to the students. The survey was intended to quantify the main variables in question, such as the integration of AI, usage of data analytics, presence of virtual guidance tools, personalization of student support, and student satisfaction with the education counselling services. The survey contained Likert-type statements, where participants could rate how much they agreed with the statements regarding their experiences with the different technological tools and their satisfaction levels with the counselling services. The survey was completed online through the university platforms and student networks so that it covered students who used the counselling services. Before the final data collection, a pilot test was done using a small number of students to confirm the clarity and consistency of the items in the questionnaire and make slight corrections before the final data collection.

Data Analysis

Data was analyzed with the help of SPSS (Statistical Package for the Social Sciences), a most commonly used computer program for social science statistical analysis. Descriptive statistics were generated first to compile the demographic characteristics of the sample and to show an overview of the respondents' opinions on each variable. Cronbach's alpha was calculated in order to find out the reliability and internal consistency of the measuring scales applied on each variable. Regression analysis was subsequently applied to test the proposed relationships among AI integration, data analytics, virtual guidance platforms, and student satisfaction. For mediation analysis of the personalization effect, mediation analysis was applied via the (Baron & Kenny, 1986) method and supplemented by bootstrapping methods (Preacher & Hayes, 2008) for estimating indirect effects with 5,000 resamples. This approach allowed for in-depth understanding of the direct and indirect effects of technology on student satisfaction with educational counseling services. Results were interpreted to comprehend the meaning of relationships between variables and to obtain empirical evidence on hypotheses of the study.

Results

table 1 shows the mean and standard deviation scores of the major variables under investigation in the study. The highest mean score was in student satisfaction (M = 4.01, SD = 0.61), and this means that, on average, students rated educational counselling services as highly satisfying. Student support personalization was not far behind (M = 3.92, SD = 0.64), which implies that students viewed counselling services as being fairly well adjusted to their own specific needs. Artificial intelligence implementation (M = 3.89, SD = 0.67) and data analytics usage (M = 3.85, SD = 0.69) were also rated moderately highly, reflecting significant usage of these technologies in education counselling settings. The availability of virtual guidance platforms got the lowest mean score out of the variables (M = 3.78, SD = 0.72), although over the midpoint, indicating potential for further improvement in digital guidance infrastructure.

Table 1: Descriptive Statistics

Variable	Mean	Std. Deviation
Artificial Intelligence Integration	3.89	0.67
Use of Data Analytics	3.85	0.69
Availability of Virtual Guidance	3.78	0.72
Personalization of Student Support	3.92	0.64
Student Satisfaction	4.01	0.61

Table 2 presents the skewness and kurtosis statistics for all variables to test the normality assumption. All the skewness measures are within the range of -1 to +1, showing slight negative skewness for all variables. For example, artificial intelligence integration is -0.42, whereas student satisfaction is slightly higher at -0.45. Likewise, kurtosis values are between -0.12 and 0.21, indicating that the distributions are quite normal and lack extreme flatness or peaking. These findings affirm that the data meets the normality assumption for parametric statistical procedures like correlation and regression.

Table 2: Normality Assessment

Variable	Skewness	Kurtosis
Artificial Intelligence Integration	-0.42	0.21
Use of Data Analytics	-0.36	0.18
Availability of Virtual Guidance	-0.39	0.09
Personalization of Student Support	-0.31	-0.12
Student Satisfaction	-0.45	0.14

Table 3 offers Pearson correlation coefficients between all the variables included in the studies. All are significant at 0.01 level (2-tailed) and signify that the variables strongly correlate with one another. The integration of artificial intelligence has a high significant positive correlation with satisfaction of students (r = 0.61) as well as personalization of support (r = 0.61). Use of data analytics correlates significantly with personalization (r = 0.60) and student satisfaction (r = 0.58). Virtual guidance platforms are strongly related to both personalization (r = 0.53) and student satisfaction (r = 0.56). The highest correlation is found between personalization of student support and student satisfaction (r = 0.65), emphasizing the pivotal role of customized services in improving student experiences.

Table 3: Correlation Analysis

Variables	1	2	3	4	5
1. AI Integration	1				
2. Data Analytics Usage	0.59**	1			
3. Virtual Guidance Platforms	0.54**	0.56**	1		
4. Personalization of Support	0.61**	0.60**	0.53**	1	
5. Student Satisfaction	0.61**	0.58**	0.56**	0.65**	1

Note: *p < 0.01, ** Correlation is significant at the 0.01 level (2-tailed).*

Table 4 shows the reliability statistics for all the constructs, such as Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). All the constructs show very good internal consistency with Cronbach's alpha values well above 0.70, from 0.83 to 0.87. The CR values for all the constructs are also well above the suggested benchmark of 0.70, signaling good construct reliability. Additionally, the AVE values are greater than 0.50 in all constructs, indicating good convergent validity. For example, student satisfaction demonstrates a Cronbach's alpha of 0.87, a CR of 0.91, and an AVE of 0.66, all affirming that the measurement model is reliable and valid.

Table 4: Reliability Analysis

Construct	No. of Items	Cronbach's Alpha	CR	AVE
Artificial Intelligence Integration	5	0.84	0.88	0.59
Use of Data Analytics	5	0.85	0.89	0.62
Availability of Virtual Guidance	5	0.83	0.87	0.58
Personalization of Student Support	5	0.86	0.90	0.64
Student Satisfaction	5	0.87	0.91	0.66

Table 5 presents the individual item loadings on the outer loadings for each construct. All individual loadings are above the 0.70 threshold recommended, indicating high individual indicator reliability. For instance, items under artificial intelligence integration fall between 0.75 and 0.80, and items under data analytics fall between 0.76 and 0.84. Likewise, virtual guidance platform items, support personalization, and student satisfaction all have loadings greater than 0.73, suggesting that each item is a significant contributor to its respective construct. These high loadings also enhance the strength of the measurement model and its readiness for structural analysis.

Table 5: Outer Loadings

Constructs	Items	Loadings
Artificial Intelligence Integration	AI1	0.75
	AI2	0.78
	AI3	0.80
	AI4	0.76
	AI5	0.77
Use of Data Analytics	DA1	0.79
	DA2	0.82
	DA3	0.84
	DA4	0.78
	DA5	0.76
Availability of Virtual Guidance	VG1	0.73
	VG2	0.77
	VG3	0.80
	VG4	0.79
	VG5	0.74
Personalization of Support	PS1	0.81
	PS2	0.83

	PS3	0.79
	PS4	0.82
	PS5	0.78
Student Satisfaction	SS1	0.85
	SS2	0.83
	SS3	0.81
	SS4	0.80
	SS5	0.79

Table 6 shows the R^2 statistics for the two endogenous factors—personalization of student support and satisfaction of students. The R^2 statistic for personalization of student support is 0.62, meaning that 62% of personalization variance can be predicted by the technology factors (AI integration, data analytics, and virtual guidance). Student satisfaction has an R^2 value even higher, which is 0.71, and this implies that 71% of variation in student satisfaction can be explained by the intersection of technological parameters and the mediator role of personalization. Such values indicate significant explanatory power and thereby the usefulness of the intended model.

Table 6: R Square Values

Endogenous Variable	R^2
Personalization of Student Support	0.62
Student Satisfaction	0.71

Table 7 presents the outcome of the path analysis, which examines both the direct and mediated effects between the variables in the hypothesized model. The first three hypotheses tested the direct effect of technological components on student satisfaction with educational counselling services. The beta coefficient for artificial intelligence integration was $\beta = 0.28$, with a t-value of 4.23 and p-value of 0.000, which shows a statistically significant positive effect. This implies that higher integration of AI technologies in counselling services significantly increases students' satisfaction. Likewise, data analytics use illustrated a very positive influence on student satisfaction ($\beta = 0.24$, $t = 3.87$, $p = 0.000$), which highlights the critical role of decision-making that utilizes data to deal with students' needs. Access to virtual platforms of guidance also had a statistical influence ($\beta = 0.21$, $t = 3.49$, $p = 0.001$), highlighting the appreciation that students have for easily accessible digital guidance platforms.

Results show that personalization strongly mediates all three relationships. To achieve artificial intelligence integration, the intervening route of personalization was significant ($\beta = 0.31$, $t = 4.52$, $p = 0.000$), indicating that the effect of AI on student satisfaction is increased if services are personalized to specific requirements. likewise, the mediation effect for analytics data was important ($\beta = 0.27$, $t = 3.96$, $p = 0.000$), indicating data use enhances satisfaction more significantly where it is utilized to inform tailoring interventions. Lastly, the mediation effect on virtual guidance websites was also prominent ($\beta = 0.25$, $t = 3.74$, $p = 0.000$), showing evidence that digital existence adds more substantial value to satisfaction where they underpin tailoring

interactions. Together, these results affirm that personalization is a key mechanism by which technological innovations enhance students' counselling experiences.

Table 7: Path Analysis

Hypothesis Statement	β	t-Value	p-Value
Artificial intelligence integration has a significant impact on student satisfaction with educational counselling services.	0.28	4.23	0.000
Use of data analytics has a significant impact on student satisfaction with educational counselling services.	0.24	3.87	0.000
Availability of virtual guidance platforms has a significant impact on student satisfaction with educational counselling services.	0.21	3.49	0.001
Personalization of student support mediates the relationship between artificial intelligence integration and student satisfaction with counselling services.	0.31	4.52	0.000
Personalization of student support mediates the relationship between use of data analytics and student satisfaction with counselling services.	0.27	3.96	0.000
Personalization of student support mediates the relationship between availability of virtual guidance platforms and student satisfaction with counselling services.	0.25	3.74	0.000

Discussion

The growing incorporation of technology innovation into education guidance services has dramatically changed the way institutions provide guidance for student success and well-being. Artificial intelligence (AI), data analytics, and online guidance portals are gaining popularity, and educational institutions are now empowered with robust means of providing more tailored, interactive, and effective guidance to students. This research considers the effects of these technologies on student satisfaction with education advisory services, focusing on the special attention given to the important role that customized support has in defining student experience. By analyzing the interplay between AI integration, data analytics usage, and virtual platform availability, this research seeks to offer further understanding of how these technologies contribute to student satisfaction. In addition, it identifies the mediating function of personalized support in these connections and provides an integrated view of how technological developments, strategically utilized, can transform the landscape of student support and lead to enhanced learning outcomes.

Results in this research strongly endorse the hypothesis that adoption of artificial intelligence (AI) plays an important role in satisfaction of students with education guidance services. AI has been a revolutionizing technology within education systems, making the students' support services more efficient, accurate, and personalized. The findings of this research concur with past research that had concluded that AI-driven systems, including smart chatbots, predictive analytics, and recommendation systems, enhance the overall effectiveness of education counseling services (Ellikkal & Rajamohan, 2024). AI can handle large data, identify patterns between student

behaviors, and create personalized course and career recommendations, thus serving a range of student needs more comprehensively than ever before (Das et al., 2023). AI saves time when it is used for documentation, enabling counsellors to devote more hours to face-to-face interactions, leading to student satisfaction (Rızvı, 2023). Through its instant and customized provision of feedback, AI also lowers the effort that students feel required to invest and makes them perceive that they are more cared about and encouraged, which generates increased perceived value from the counselling service. This is aligned with the existing literature on technology acceptance models, where perceived ease of use and usefulness of AI systems have been found to have a positive impact on user satisfaction (Davis, 1989). The major contribution of AI towards student satisfaction stems from its potential to automate processes, provide customized advice, and build a more responsive and interactive counselling environment.

The validation of the second hypothesis, that student satisfaction with educational counselling services is strongly influenced by the use of data analytics, highlights the increasing value of data-driven decision-making within educational support systems. Data analytics, through the use of student data, facilitates more targeted and informed interventions, allowing counsellors to see patterns in academic achievement, behavior, and well-being that are otherwise difficult to identify. The application of predictive analytics, in specific, enables institutions to preemptively solve academic underperformance or disengagement, triggering early warnings for counsellors and students on probable issues (Ouyang et al., 2023). This is in line with previous research that set out the way decision-making using data can maximize counselling efficacy through targeted, individualized interventions (Stewart et al., 2023). In addition, research has established that students who experience counselling services as more individualized and responsive, because of data analytics, are more satisfied. The use of data analytics enhances a more holistic approach to the well-being of students through bringing together academic, behavioral, and emotional data in order to maximize the quality of support offered to students (Sankaran et al., 2023). With the growing dependence on big data in higher education to enhance student performance, the results of this study indicate that data analytics have a significant impact on ensuring that guidance services are strategically developed to meet the individual needs of each student. In addition, data analytics encourages openness of the counselling process, educating students through effective understanding of how data are utilized to enhance their learning experience, hence building confidence and satisfaction with the services provided.

The third hypothesis, seeking to explore the impact of virtual guidance platforms on students' satisfaction with educational counseling services, was also justified by the results of this study. The presence of virtual platforms has reshaped the way counselling service provision is delivered, especially against the backdrop of rising demand for flexibility and accessibility. These sites enable students to receive counselling whenever, wherever, which enormously improves the student experience overall, particularly for those with colliding timetables or residing in geographically dispersed locations (Ellikkal & Rajamohan, 2024). Online sites enable students to have a chance to engage with resources like informative webinars, live chat with a counsellor, self-help materials, and even peer support groups, thus making the counselling environment more holistic and accessible. Previous studies have shown that 24/7 access to virtual counseling services enhances students' perceived availability of support, with a positive effect on their satisfaction (Saqr et al., 2024). Furthermore, incorporation of interactive functionalities like online face-to-

face consultation or personalized online workshops also reduces the perception of distance between students and counsellors and lessens the probable experience of loneliness due to virtual interaction (Mejeh & Rehm, 2024). The positive correlation between the number of virtual platforms and student satisfaction can also be explained by the growing need for digital solutions within higher education, especially post-pandemic, when students are used to distance learning and support. The results of the study are consistent with the literature, where the growing significance of virtual platforms in boosting educational support services is emphasized (Fatima et al., 2024). Virtual guidance systems not only add convenience but also enable students to have more ownership of their educational and personal growth, which leads to higher satisfaction.

Evidence from this study confirms the hypothesis that student individualization of support mediates artificial intelligence integration to students' satisfaction with learning guidance services. It implies that how AI provides individualized help is partly what triggers its ability to boost students' satisfaction. Artificial intelligence (AI) technologies, e.g., machine learning techniques and intelligent recommendation programs, can analyze a range of different student data, such as achievements in learning, interests, and learning activity, and through doing so create extremely personalized student support plans which take account of the unique needs and interests of each individual, which enhance the general study guidance experience (Shoaib et al., 2024). As such, students view the counselling service as being more relevant and specific to their needs, and hence higher satisfaction is achieved. This mediating effect is in accordance with the principle of personalization in the delivery of services, whereby individualization of support by using AI promotes the sense of attachment between the students and the system of learning support (Kaswan et al., 2024). Additionally, previous studies on personal learning environments have established the positive effect that personalized feedback and suggestions have on learners' satisfaction (Missun & Omar, 2024). Thus, mediation of personalization implies that true value of AI in counselling services is not necessarily technical excellence but its capacity to provide a more personalized, responsive, and rewarding experience of guidance to learners, which increases satisfaction levels.

The fifth confirmation hypothesis, that data analytics use is mediated by individualization of student support in relation to student satisfaction with educational guidance services, captures the pivotal role data analytics takes in informing personalized student experiences. Data analytics software allows institutions to gather and analyze vast amounts of student data, giving them valuable insights into academic performance, emotional well-being, and other pertinent areas that influence a student's learning experience (Graf, 2023). This data-intensive process enables the counsellors to personalize their support measures based on the specific requirements of the students, which makes the counselling process more responsive and personalized (Villegas-Ch & García-Ortiz, 2023). The findings of the study are that whenever data analytics is utilized for personalizing the support provided to the students, they sense that they are listened to, nurtured, and understood to a greater extent, and it improves the satisfaction level with the guidance services. Personalization is an intermediary factor, in alignment with evidence indicating the significance of personalized care to enhance students' outcomes (Ameloot et al., 2024). Data-driven analysis-powered personalized guidance ensures that the students are receiving proposals and interventions that are specially designed to suit their individual unique situations and thus enhance overall performance and satisfaction of the advising process. The results also support the notion that

students will utilize the counselling services when they feel that the assistance provided is individualized in terms of meeting their unique needs as individuals and students, thus increasing their level of satisfaction with the service.

The sixth hypothesis, which suggests that student support personalization mediates the effect between the offering of virtual guidance platforms and students' satisfaction with educational counseling services, is concerned with the changing nature of digital platforms in academic support. Virtual guidance platforms provide unparalleled access to the provision of counseling services, since the student can access this support anywhere and at any time. Yet, merely the existence of such platforms is not a guarantee for high student satisfaction. Being successful in achieving the highest utilization of their potential rests on how customized support is made available through them (Rodway & Schepman, 2023). The research validates that virtual advisory platforms are actually capable of boosting student satisfaction substantially if they offer features of customized support such as personalized guidance, individualized virtual counseling, and tailored self-help materials (Sharif Nia et al., 2023). This is in line with research into the need for individualization of digital learning and support systems, which identified that students are more likely to engage in and benefit from online services where these services are tailored to their own needs (Bwachele et al., 2023). The personalization mediating role indicates that online guidance platforms perform optimally in the presence of features and functions facilitating counsellors to deliver customized assistance. The personalized support not only maximizes student engagement but also perceived value, leading to higher levels of satisfaction. Second, the fact that there exist virtual platforms ensures that it becomes simpler to engage in constant and adaptive support that enables students easily to access suitable resources at a suitable time as well as satisfy them with the counselling service (Al-Mseidin et al., 2023). The implications of this study further reiterate the value of incorporating personalization into virtual platforms since this raises the efficiency of the delivered support and confirms that students will receive their needs met in an important manner.

Finally, the evidence obtained in this study highlights the far-reaching implication that technological advances like AI embedding, data analytics, and online counselling platforms hold to improve the level of student satisfaction with higher education counselling services. The optimistic results found on all six hypotheses serve to reaffirm not just the direct impacts these technologies impart, but above all, also the central part that tailored attention plays in realising their highest benefits. The personalization role in mediating was repeatedly reaffirmed, providing evidence that students' satisfaction is dramatically increased through the use of technological tools for making the experience of support specific to individual students' needs. Such evidence leads to the recommendations that institutions focus on incorporating customized, data-optimized, and accessible support mechanisms as key components for promoting students' positive experience. Finally, this study adds to the body of literature on the convergence of technology and student support services and offers useful information for future innovations in educational counselling practice.

Conclusion

In conclusion, this study provides solid support for the significant contribution that technological advances, particularly artificial intelligence, data analysis, and online counseling platforms, play in enhancing student satisfaction with guidance services in institutions of higher learning. The

findings highlight the necessity of personalized guidance in maximizing the potential of such technologies, demonstrating that students are more satisfied when support systems are adjusted to address their individual requirements. By examining the direct and indirect associations between the technology tools and student satisfaction, the research offers valuable feedback on the ways in which educational institutions can utilize technology to improve the quality of student support services. The study also emphasizes the importance of integrating personalization into these systems so that technology is not just employed as an access tool but also as a means of providing more targeted and relevant support. Whereas the results present important practical recommendations for improving student experience, they also create opportunities for new studies, especially for investigating the longer-term impacts of technological interventions on student outcomes and the wider institutional environment in which these technologies operate. In general, this study adds depth to the knowledge of how technological innovations can transform student support systems and lays the groundwork for future research on the changing relationship between technology and student satisfaction in educational environments.

Implications

The practical applications of this study are important for educational institutions that want to improve their student support services with the implementation of cutting-edge technologies. The research identifies the revolutionary capabilities of artificial intelligence, data analytics, and virtual guidance platforms in influencing student satisfaction with educational counselling services. For schools, the study indicates that implementation of AI technologies can facilitate more personalized and streamlined student counselling as AI is able to sift through large amounts of data to individualize support and forecast students' needs. Institutions need to invest in AI-enabled systems that have the capacity to provide personalized suggestions, materials, and intervention approaches based on a student's unique profile. In the same light, data analytics used enables the counsellors to identify trends and patterns of student behavior and performance, thus facilitating proactive intervention and early support to students who are at risk. The study also underscores the significance of virtual guidance platforms, which provide convenience and ease of use for students, especially those with potential time or geographical limitations. For these platforms to be successful, however, they need to be built to enable personalized support, for example, through personalized virtual consultations, self-directed resources, and adaptive learning tools. The mediating function of personalization, as this research identifies, highlights the need for institutions to incorporate personalization into their digital support systems so that students can access support that is not just accessible but also pertinent to their individual needs. Since institutions keep evolving to suit the digital age, this research comes in handy to offer real-world advice for improving student satisfaction by leveraging technology-enabled, personalized student services, ultimately leading to improved student outcomes and student engagement.

The theoretical contribution of this study is considerable, adding to the growing literature on the intersection of technology, student support, and satisfaction in academic environments. Through the demonstration of the contribution of artificial intelligence, data analytics, and virtual guidance platforms to the shaping of student satisfaction, this study provides insights into how technology can be integrated into educational counselling models to improve service quality. The study puts strong focus on the mediating effect of personalization, something which has seen heightened attention within education theory and theory about personalized learning and support. This

investigation develops the theoretical work surrounding personalization through describing how personalization is not merely a standalone stimulus of student satisfaction but is instead a mediator across technological advances and outcomes in terms of satisfaction. The research substantiates the theory that the worth of technology in learning environments is optimized when applied to tailor and tailor the student experience, corroborating constructs of student engagement and satisfaction. Further, by connecting AI integration, data analytics, and virtual guidance platforms to student satisfaction, the study fills in the gaps in current models of student support and provides a more totalistic and technology-centric approach. Additionally, the research continues and supports existing theoretical frameworks in educational technology adoption, emphasizing personalization as a key process by which technology augments student experience. The research, in this way, not only adds to the application of technology in educational counselling practice but also the models of theory that underpin how institutions are to utilize these tools to engage students more deeply and satisfy their needs.

Limitations and Future Directions

Although this study sheds important light on the function of artificial intelligence, data analysis, and virtual guidance platforms to increase student satisfaction with educational counseling services, some limitations need to be considered. First, the research was performed in a certain context, and as such, it may be constrained by its ability to be generalized to other educational environments, institutions, or nations with different technological infrastructures or student groups. Moreover, the research was mostly quantitative in nature, based on student survey data, which is prone to biases like social desirability or self-reporting errors. Future studies can widen the scope by using qualitative approaches, like in-depth interviews or focus groups, to have a better understanding of students' experiences and perceptions regarding personalized support in educational counselling services. Additionally, although the research concentrated on the interplay between technology and student satisfaction, it did not investigate the long-term consequences of these technological interventions on student outcomes, including academic performance, retention, or general well-being. Longitudinal research could be conducted in the future to study the longitudinal effects of AI, data analytics, and virtual platforms on student success and growth. Another possible area of future research is to examine the role of teaching staff and counselling personnel in the effective use of these technologies, since their training, attitudes, and support can affect the effectiveness of these systems. Future research could also compare the effect of various technological tools on student satisfaction across different demographic groups, e.g., students from different socioeconomic backgrounds, cultural backgrounds, or levels of digital literacy. Lastly, investigating how technological innovation in student support services influences other institutional variables, i.e., institutional culture, leadership, and resources, would yield a fuller understanding of the circumstances under which such technologies may be most effective.

References:

Al-Mseidin, K. I., Al-Zu'bi, M. A., Al-Mawadieh, R. S., & Alelaimat, A. M. (2023). The Integration of AI Applications in Psychological and Educational Counselling for University Students: Opportunities and Challenges. 2023 24th International Arab Conference on Information Technology (ACIT),

Ameloot, E., Rotsaert, T., Ameloot, T., Rienties, B., & Schellens, T. (2024). Supporting students' basic psychological needs and satisfaction in a blended learning environment through learning analytics. *Computers & Education*, *209*, 104949.

Aravind, S., & Kavitha, R. (2024). Assessing Student Satisfaction With Artificial Intelligence in Education: A Study of E-Applications in Selected Educational Institutes in Coimbatore. In *Improving Library Systems with AI: Applications, Approaches, and Bibliometric Insights* (pp. 178-185). IGI Global.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS quarterly*, 351-370.

Bwachele, V. W., Chong, Y.-L., & Krishnapillai, G. (2023). Perceived service quality and student satisfaction in higher learning institutions in Tanzania. *Humanities and Social Sciences Communications*, *10*(1), 1-12.

Chang, D. H., Lin, M. P.-C., Hajian, S., & Wang, Q. Q. (2023). Educational design principles of using AI chatbot that supports self-regulated learning in education: Goal setting, feedback, and personalization. *Sustainability*, *15*(17), 12921.

Das, A., Malaviya, S., & Singh, M. (2023). The impact of AI-driven personalization on learners' performance. *International Journal of Computer Sciences and Engineering*, *11*(8), 15-22.

Davis, F. D. (1989). Technology acceptance model: TAM. *Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption*, *205*(219), 5.

Depa, V. R. (2025). THE ROLE OF MULESOFT IN EDUCATION: TRANSFORMING LEARNING THROUGH PERSONALIZATION. *Technology (IJRCAIT)*, *8*(1).

Ellikkal, A., & Rajamohan, S. (2024). AI-enabled personalized learning: empowering management students for improving engagement and academic performance. *Vilakshan-XIMB Journal of Management*.

Fatima, T., Li, B., Malik, S. A., & Zhang, D. (2024). Mapping the relationship between virtual supervision, online program quality, and international student satisfaction in COVID-19 pandemic world: Does e-learning quality mediates the relationship. *Interactive Learning Environments*, *32*(7), 3414-3430.

Gm, D., Goudar, R., Kulkarni, A. A., Rathod, V. N., & Hukkeri, G. S. (2024). A digital recommendation system for personalized learning to enhance online education: A review. *IEEE Access*, *12*, 34019-34041.

Graf, A. (2023). Exploring the role of personalization in adaptive learning environments. *International Journal Software Engineering and Computer Science (IJSECS)*, *3*(2), 50-56.

Henríquez, V., Guerra, J., & Scheihing, E. (2024). The impact of an academic counselling learning analytics tool: Evidence from 3 years of use. *British Journal of Educational Technology*, *55*(5), 1884-1899.

Ignacio, D. F. (2023). Virtual Care: Counseling Experiences of Guidance Counselors and Clients in the New Normal. *International Journal of Applied Guidance and Counseling*, *4*(1).

Imran, M., Almusharraf, N., Ahmed, S., & Mansoor, M. I. (2024). Personalization of E-Learning: Future Trends, Opportunities, and Challenges. *International Journal of Interactive Mobile Technologies*, *18*(10).

Jaber, F., & Al-Hroub, A. (2023). School counselors' perceptions of virtual counseling in Lebanon: A qualitative study. *Frontiers in psychology*, *13*, 1083644.

Kaswan, K. S., Dhatterwal, J. S., & Ojha, R. P. (2024). AI in personalized learning. In *Advances in technological innovations in higher education* (pp. 103-117). CRC Press.

Khor, E. T., & K, M. (2023). A systematic review of the role of learning analytics in supporting personalized learning. *Education Sciences*, *14*(1), 51.

Limbu, Y. B., & Pham, L. (2023). Impact of E-Learning Service Quality on Student Satisfaction during the COVID-19 Pandemic: A Systematic Review. *Knowledge Management & E-Learning*, *15*(4), 523-538.

Mejeh, M., & Rehm, M. (2024). Taking adaptive learning in educational settings to the next level: Leveraging natural language processing for improved personalization. *Educational technology research and development*, *72*(3), 1597-1621.

Missun, S., & Omar, Z. (2024). AI and IoT Integration for Enhanced Guidance and Counseling Services in Malaysia: A Technolological Approach to Well-Being. *J. Electrical Systems*, *20*(12s), 67-77.

Ouyang, F., Wu, M., Zheng, L., Zhang, L., & Jiao, P. (2023). Integration of artificial intelligence performance prediction and learning analytics to improve student learning in online engineering course. *International Journal of Educational Technology in Higher Education*, *20*(1), 4.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891.

Rehman, F., & Sajjad, S. (2024). Unlocking Student Satisfaction: The Impact of Therapeutic Engagement in University Counseling Services. *International Research Journal of Management and Social Sciences*, *5*(2), 311-321.

Rızvı, M. (2023). Investigating AI-powered tutoring systems that adapt to individual student needs, providing personalized guidance and assessments. *The Eurasia Proceedings of Educational and Social Sciences*, *31*, 67-73.

Rodway, P., & Schepman, A. (2023). The impact of adopting AI educational technologies on projected course satisfaction in university students. *Computers and Education: Artificial Intelligence*, *5*, 100150.

Rosmalina, A. (2023). Students counselling guidance using digital platforms and satisfaction for online learning. *Journal of Innovation in Educational and Cultural Research*, *4*(1), 65-73.

Sankaran, S., Sankaran, K., & Bui, T. (2023). Student satisfaction with R vs. Excel in Data Mining and Business Analytics: A Herzberg's motivation-hygiene theory perspective. *Decision Sciences Journal of Innovative Education*, *21*(2), 68-82.

Saqr, R. R., Al-Somali, S. A., & Sarhan, M. Y. (2024). Exploring the acceptance and user satisfaction of AI-driven e-learning platforms (Blackboard, Moodle, Edmodo, Coursera and edX): an integrated technology model. *Sustainability*, *16*(1), 204.

Sharif Nia, H., Marôco, J., She, L., Khoshnavay Fomani, F., Rahmatpour, P., Stepanovic Ilic, I., Mohammad Ibrahim, M., Muhammad Ibrahim, F., Narula, S., & Esposito, G. (2023). Student satisfaction and academic efficacy during online learning with the mediating effect of student engagement: A multi-country study. *PLoS One*, *18*(10), e0285315.

Shoaib, M., Sayed, N., Singh, J., Shafi, J., Khan, S., & Ali, F. (2024). AI student success predictor: Enhancing personalized learning in campus management systems. *Computers in Human Behavior*, *158*, 108301.

Stewart, J., Davis, G. A., & Peslak, A. (2023). Analysis of a student satisfaction exit survey of a graduate data analytics program. *Issues in Information Systems*, *24*(2).

Su, S.-W., Hung, C.-H., Chen, L.-X., & Yuan, S.-M. (2024). Development of an AI-based system to enhance school counseling models for Asian elementary students with emotional disorders. *IEEE Access*.

Subaveerapandiyan, A., Radhakrishnan, S., Tiwary, N., & Guangul, S. M. (2024). Student satisfaction with artificial intelligence chatbots in Ethiopian academia. *IFLA Journal*, 03400352241252974.

Suryawati, C. T., Kholili, M. r. I., Susilo, A. T., & Surur, N. (2024). Enhancing Effectiveness of Guidance and Counseling Services Through Web-Based Interactive Media. *Ingenierie des Systemes d'Information*, *29*(1), 37.

Tzimas, D. E., & Demetriadis, S. N. (2024). Impact of learning analytics guidance on student self-regulated learning skills, performance, and satisfaction: A mixed methods study. *Education Sciences*, *14*(1), 92.

Vashishth, T. K., Sharma, V., Sharma, K. K., Kumar, B., Panwar, R., & Chaudhary, S. (2024). AI-driven learning analytics for personalized feedback and assessment in higher education. In *Using traditional design methods to enhance AI-driven decision making* (pp. 206-230). IGI Global Scientific Publishing.

Velastegui, D., Pérez, M. L. R., & Garcés, L. F. S. (2023). Impact of Artificial Intelligence on learning behaviors and psychological well-being of college students. *Salud, Ciencia y Tecnologia-Serie de Conferencias*(2), 343.

Villegas-Ch, W., & García-Ortiz, J. (2023). Enhancing learning personalization in educational environments through ontology-based knowledge representation. *Computers*, *12*(10), 199.

Wu, S., Cao, Y., Cui, J., Li, R., Qian, H., Jiang, B., & Zhang, W. (2024). A comprehensive exploration of personalized learning in smart education: From student modeling to personalized recommendations. *arXiv preprint arXiv:2402.01666*.

Zhong, L. (2023). A systematic review of personalized learning in higher education: learning content structure, learning materials sequence, and learning readiness support. *Interactive Learning Environments*, *31*(10), 7053-7073.

Appendix-A

Questionnaire

Artificial Intelligence Integration

1. The educational counselling system at my institution uses AI-based tools to assist in guidance.
2. I receive AI-generated recommendations that are relevant to my academic or career goals.
3. The AI features in our counselling platform make the service more accessible and efficient.
4. I feel that AI enhances the overall quality of educational counselling services.
5. The use of AI allows for quicker responses from the counselling system.

Use of Data Analytics

1. Data collected about my academic performance is used to provide personalized counselling.

2. Counselling services use data analysis to identify trends and suggest improvements.
3. I trust that data-driven insights contribute to more accurate guidance.
4. My academic and career decisions have been positively influenced by analytics-based recommendations.
5. The counselling platform effectively uses my learning data to support my needs.

Availability of Virtual Guidance Platforms

1. My institution provides virtual platforms for accessing counselling services.
2. I find it convenient to use virtual counselling tools (e.g., chatbots, online portals, video sessions).
3. Virtual platforms make it easier to schedule and attend counselling sessions.
4. The information provided through virtual platforms is clear and helpful.
5. The availability of virtual counselling services has improved my overall counselling experience.

Personalization of Student Support

1. Counselling services are tailored to my personal needs and preferences.
2. I feel that the support I receive is specific to my academic or emotional situation.
3. The system recognizes my individual goals when providing guidance.
4. I am more satisfied when counselling services are adapted to my learning style.
5. Personalized support has improved my engagement with counselling services.

Student Satisfaction with Educational Counselling Services

1. Overall, I am satisfied with the educational counselling services provided by my institution.
2. The counselling services help me make better academic and career decisions.
3. I would recommend the counselling services to other students.
4. My expectations from educational counselling have been met.
5. The technological features used in counselling have enhanced my satisfaction.

Review:Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems

Review Submitted

Thank you for completing the review of this submission. Your review has been submitted successfully. We appreciate your contribution to the quality of the work that we publish; the editor may contact you again for more information if needed.

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Manuscript ID: IJIET-17845 - Article Review Acknowledgement

Ms. Mia Hu <mia.hu@ejournal.net> Tue, Jun 3, 2025 at 10:58 AM
To: Wahyuni Sri <wahyunis@edu.uir.ac.id>

Dear Wahyuni Sri,

Thank you for completing the review of the submission, "Technological Advancements in Educational Counselling: Exploring the Role of AI, Data Analytics, and Virtual Guidance Platforms in Student Support Systems," for International Journal of Information and Education Technology.

Your insight comments should be valuable for authors to think about their study rigorously, and also provide us the significant reference to make the final decision. We appreciate your contribution to maintaining the quality of the work that we publish. You may forward this message to Publons to verify your review, the instructions can be found at http://webofscience.help.clarivate.com/en-us/Content/peer-review-in-wos-researcher-profile.html?Highlight=peer-review.

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I hope we will be more active in working together in the future.

Ms. Mia Hu

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Indexed in Scopus (CiteScore 2023: 2.8)