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## Rethinking Writing Support: Student Satisfaction and Writing Development in a Hybrid Model in UAE Higher Education

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**ABSTRACT:** *This study examines the effectiveness of a hybrid academic writing center (AWC) at a university in the United Arab Emirates. Using a quantitative, cross-sectional survey design (n=238), the research investigates the relationships between student satisfaction, service usage frequency, and perceived improvement in academic writing. It also compares student perceptions of online versus in-person support. Data were analyzed using ANOVA, paired t tests, and ordinal logistic regression. The findings indicate that sustained engagement (five or more visits) is a significant predictor of higher satisfaction and greater perceived writing improvement, regardless of academic major or year. Students perceived in-person services as significantly more effective than online alternatives, with service modality accounting for a substantial proportion of the variance in perceived effectiveness ( $\eta^2 = .25$ ). These results underscore the need for writing centers to foster continued face-to-face engagement while also enhancing online support to better serve the needs of international and multilingual student populations.*

**Keywords:** academic writing, hybrid writing center, online tutoring, student engagement, student satisfaction, UAE higher education, writing support

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## INTRODUCTION

An empirically based analysis of writing centers is necessary to inform university policymaking and ensure that these resources effectively meet student needs. Understanding the interrelationships between student satisfaction, service utilization, and writing improvement can help institutions make informed decisions about resource allocation, service design, and tutor training. The purpose of this research is to contribute to international conversation on digital and hybrid models of student engagement by offering empirical findings from a UAE higher education institution. In doing so, the study aims to help bridge the gap between theoretical models and practical implementation in academic support services.

Writing centers in higher education have undergone a radical shift, moving from predominantly remedial support services to essential academic resources that facilitate student learning and development. Carino (1995) traces the historical development of writing centers, showing how their early remedial positioning gradually gave way to more integrated and pedagogically sound roles within academic institutions. Contemporary writing centers are evolving beyond traditional models by re-evaluating established practices around space, time, and tutoring modalities to enhance accessibility and equity for a diverse student population, a shift accelerated by recent challenges such as the COVID-19 pandemic (Barron et al., 2022).

The current landscape of higher education, marked by increasing globalization, requires universities, especially in contexts such as the UAE, to support students from diverse linguistic and cultural backgrounds, many of whom

are not native English speakers. Empirical evidence of student satisfaction with writing centers in the Gulf region and their overall effectiveness has direct relevance to the present study. Previous investigations have touched on themes of student satisfaction, service usage, and perceived improvement in writing, providing an important regional context. However, there remains a need for more targeted research on the efficacy of hybrid writing support models. Findings from similar studies also inform the statistical approach employed in this research, including the use of Pearson correlation and linear regression to analyze patterns of student engagement and perception.

This study contributes to the writing center literature by providing empirical evidence from a Gulf-region higher education context, where multilingualism and international student enrollment are integral features of the academic environment. Although hybrid writing center models have been explored in Western and East Asian settings, quantitative research examining students' perceptions of service modality, satisfaction, and writing development remains limited in Middle Eastern contexts. By situating this investigation within a UAE institution, the study addresses this gap and contributes to broader discussions of accessibility, equity, and student engagement in hybrid academic support services.

This study aims to explore whether there is a relationship between student satisfaction, frequency of academic writing center (AWC) usage, and perceived improvement in academic writing skills. It also examines whether students view online and in-person writing support differently in terms of effectiveness. Using a cross-sectional quantitative design, data were collected from students who used the AWC services and analyzed using correlation, ANOVA, regression, and t test procedures. The research is guided by the following questions:

1. Does a relationship exist between student satisfaction and their frequency of using AWC services (both in-person and online)?
2. Does the type of AWC service (online vs. in-person) influence students' perception of effectiveness?
3. Does the frequency of using AWC services significantly predict students' perceived level of improvement in academic writing skills (low, moderate, high, or very high)?

To better understand how this study contributes to the evolving landscape of hybrid writing support, this review examines relevant theories, prior research on writing center effectiveness, and emerging models in multilingual higher education settings.

## **Hypotheses**

This case study primarily aims to investigate the connection between students' perceptions and how often they visit the AWC to make use of the services offered by the center. To achieve this aim, a thorough review of the literature resulted in the formulation of the following hypotheses.

- H<sub>1</sub>: There is a statistically significant relationship between student satisfaction and the frequency of using AWC services.
- H<sub>2</sub>: There is a statistically significant difference in students' perceived effectiveness between online and in-person AWC services.
- H<sub>3</sub>: There is a statistically significant predictive relationship between the frequency of using AWC services and students' perceived levels of improvement in academic writing skills.

## **LITERATURE REVIEW**

This literature review synthesizes research on the effectiveness of hybrid writing centers (WCs) in higher education, focusing on their impact on student satisfaction, service utilization, and writing development.

### **The Evolution of Writing Centers**

Barron et al. (2022) contend that the pedagogy of writing centers has evolved significantly, moving beyond a primary focus on error correction to embrace approaches that emphasize collaborative learning, critical thinking, and the holistic development of writers. This shift is further evidenced in their exploration of expanded tutoring modalities designed to enhance accessibility and equity within writing center services. Newsome et al.'s (2023) research explores the impact of a hybrid writing center model that combines online and face-to-face support, particularly for L2 postgraduate students. Their findings highlight students' preference for flexible, online options, underscoring the importance of hybrid models in addressing diverse needs and learning styles in contemporary writing centers.

Contemporary writing center practice is theoretically grounded in student-centered theories. Vygotsky's (1978) Zone of Proximal Development (ZPD) provides a fundamental theoretical basis, arguing that learning occurs best when students are assisted in carrying out activities that slightly exceed their independent abilities. Writing center tutors function as expert peers, offering assistance that enables the development of students' writing abilities. Nordlof (2019) builds on this by demonstrating how tutors can engage students within their Zone of Proximal Development through interactive dialogue that both challenges and supports their development. The cognitive apprenticeship model (Collins et al., 2018) posits that learning is facilitated through modeling, coaching, and articulation. Similarly, Bruner (1986) emphasizes the role of guided discovery in education, where students learn through culturally situated narratives and social interaction, principles that underlie the relational nature of writing center work. As Zou and Fu (2025) argue, international students rely heavily on institutional support networks to navigate the complexities of academic acculturation. In the UAE context, the writing center serves as a bridge where these social and academic strands meet. Writing center sessions provide a suitable environment

for implementing these principles. Specifically, tutors' model and facilitate students' verbalization of their understanding and cognitive processes. In problem-based learning contexts, ZPD has been applied to enhance professional practice through diagnostic teaching, authentic activities, and peer teaching to develop student autonomy (Harland, 2003). This sociocultural perspective aligns with activity theory, which frames writing as a tool-mediated activity situated within broader social contexts and emphasizes the interplay among tools, community, and goals in shaping writing practices (Russell & Williams, 2012).

The emergence of digital technologies has revolutionized the provision of writing support services in a significant manner. Online tutoring platforms have become an integral part of writing centers to provide improved accessibility and flexibility to students (Barron et al., 2022). Research has compared the relative merits of these modalities, with results that suggest that each holds the potential to yield gains, although variations in student experience and quality of feedback offered are more influential determinants of effectiveness (Tiruchittampalam et al., 2018). Hybrid writing centers, which explicitly combine face-to-face and online services, seek to exploit the advantages of both modes to deliver complete and equitable support to heterogeneous student bodies (Newsome et al., 2023).

With hybrid models of writing centers expanding, there is an urgency to understand the perceived and actual effectiveness of online support services compared with traditional in-person offerings. This section considers theoretical constructs surrounding online academic assistance, comparative research comparing the efficiency of writing centers on different modalities, and the statistical analysis approaches applied across such studies. Student engagement theoretical models in online learning environments can be utilized to enlighten us on the efficacy of online writing centers. Such concepts as social presence, meaning the feeling of being present and engaged with others in a virtual setting (Garrison et al., 2000), and cognitive engagement, meaning the degree of mental effort and commitment invested in the learning process (Chi & Wylie, 2014), are vital for successful online tutoring. Academic research shows that increasing social presence and stimulating cognitive involvement in online writing center sessions can produce positive educational outcomes. In contrast, face-to-face tutoring offers channels for more subtle nonverbal communication and immediate feedback, possibly influencing students' perceptions of effectiveness in different ways.

### **Student Engagement, Satisfaction, and Use**

Student satisfaction is a complex concept that is determined by numerous elements associated with the learning experience and the provision of support services. Astin's (1984) student involvement theory proposes that more academic and extracurricular activity engagement is associated with higher levels of satisfaction with the college experience overall. Tinto's (1993) Student Retention Model emphasizes the paramount importance of social and academic integration in fostering student success and satisfaction in general. In academic support services such as writing centers, factors such as accessibility, tutor quality,

responsiveness of the service, and perceived value of the help offered are likely to have a significant impact on student satisfaction (Bromley et al., 2016).

Studies examining the relationship between student satisfaction and writing center service usage typically employ statistical methods, such as Pearson's correlation, to determine the strength and direction of the linear relationship between the two. Linear regression analysis is also commonly used to determine whether the frequency of writing center visits can predict levels of student satisfaction. A good example of this includes a study conducted by Tiruchittampalam et al. (2018) in the context of postsecondary education in the UAE that investigated the effectiveness of writing center consultations on essay writing skills in L2 writers and likely acquired data on the satisfaction of the students concerning their usage rate.

Measuring the impact of writing center sessions on the academic writing capability of students can be accomplished in various ways. Some studies gauge students' progress over time by reviewing drafts of their writing before and after they attend the writing center. Others utilize students' self-reported perceptions of how much their writing capability has improved or their writing self-efficacy, defined as their belief in their capacity to complete writing tasks. Standardized written composition tests or analysis of performance scores on writing-intensive tasks can also be utilized to assess the effect of writing center participation on the acquisition of genuine writing competency (Salazar, 2021).

Statistical procedures play a key role in examining the effect of writing center services on academic writing abilities. Descriptive statistics, including means and standard deviations, may be employed in summarizing students' self-perceived improvement in writing abilities following the utilization of the writing center. One-way ANOVA (analysis of variance) is commonly used to establish perceived development in writing across various groups of users, such as students who make more frequent visits to the writing center compared to less frequent users and those who utilize different types of writing center services. Research employing these statistical analyses offers insights into the efficacy of writing centers in supporting the development of academic writing skills.

### **Effectiveness of Hybrid Models in Global Higher Education**

Empirical evidence of student satisfaction with the writing centers in the Gulf region and the effectiveness of the latter has direct relevance to the study suggested here. Newsome et al.'s (2023) Qatar-based empirical study of the hybrid model of a writing center's support for English academic writing proficiency among L2 postgraduates offers valuable insights into the challenges and opportunities of providing online and face-to-face support in a multicultural context. Likewise, Tiruchittampalam et al.'s (2018) UAE-based study assessing the efficacy of writing center consultations on L2 writers' essay-writing ability provides regional insight into the effects of these services. These investigations touch on areas of student satisfaction, service usage, and perceived improvement in writing, providing an essential context for the present study. The diverse cultural settings of the Gulf region present both different challenges and

opportunities for hybrid writing center models, requiring methods of student support that are both culturally sensitive and adaptable.

Empirical research on the relative effectiveness of online and face-to-face writing center services has produced mixed findings. Some research suggests that hybrid and online writing center models can support student learning effectively, with differences emerging primarily in patterns of use and perceived effectiveness rather than demonstrated learning outcomes (Newsome et al., 2023). Research to date suggests a positive relationship between satisfaction and usage, as well as notable differences in perceived effectiveness between online and in-person models. There is also a need to address writing support in multilingual and international contexts, particularly in the UAE. This study responds to that need by empirically examining how students in a hybrid writing center model perceive its impact on their academic development.

## **METHOD**

This case study employed a quantitative, cross-sectional survey design approach, which involves the collection, analysis, and interpretation of numeric data of the study (Creswell & Creswell, 2022). The research design of this case study adopted a correlational and comparative approach. It aims to examine potential relationships between two or more variables, either within the same population or between the same variables across two populations (Leedy & Ormrod, 2010; Curtis et al., 2016). In this case study, the researchers collected data through a structured survey instrument that captured students' satisfaction, frequency of service use, perceived effectiveness of online versus in-person support, and perceived improvements in academic writing without manipulating them. Then, the researchers analyzed the data using SPSS software to determine whether there is a statistical relationship or correlation between the students' perception and the frequent usage of AWC services.

### **Data Collection**

Our focus was on investigating the relationship between students' perceptions and how often they visit the AWC to use the services offered there. As such, a nonprobability sampling method was used, specifically a combination of convenience and purposive sampling. Convenience sampling was employed, as the participants were students who had access to the AWC. At the same time, purposive sampling was used to ensure that only students with potential experience or exposure to AWC services were included.

### ***Sampling***

The researchers identified a minimum sample size of 296 respondents based on the estimates outlined below. The estimated total student population at the institution at the time of data collection was approximately 1,272. We used this estimate as the total population for the study. The sample size was calculated

using a 95% confidence level, a 0.5 standard deviation, and a  $\pm 5\%$  margin of error, resulting in a minimum required sample size of 296 (Conroy, 2015). While the minimum recommended sample size was calculated at 296 students, the final number of completed responses was slightly lower (238 respondents). This outcome reflects a realistic limitation in the context of writing center service usage at the institution. The AWC predominantly serves first-year and early second-year students, who often require more structured support as they transition into university-level academic writing (Tiruchittampalam et al., 2018; Newsome et al., 2023). In contrast, fourth-year students, who typically have developed stronger academic writing skills, are much less likely to seek assistance from the AWC, leading to their complete absence from the final sample. Similarly, less than 1% of third-year students reported using AWC services, further reinforcing the trend that more advanced students perceive a reduced need for formal writing support. This pattern is consistent with findings from regional studies, which indicate that writing center engagement tends to be highest during the earlier years of undergraduate study, especially in multilingual and international educational settings (Newsome et al., 2023).

While convenience and purposive sampling were appropriate for capturing the perspectives of active users of the academic writing center, this approach may limit the generalizability of the findings beyond similar institutional contexts. Students who elected to use writing center services may differ from nonusers in motivation, academic confidence, or support-seeking behaviors. Consequently, the results should be interpreted as representative of engaged writing center users rather than the broader student population.

This study utilized anonymized program evaluation data routinely collected by the Academic Writing Center for service improvement and quality assurance. The research involved no intervention, no collection of identifiable personal information, and posed minimal risk to participants. Participation in the survey was voluntary, responses were collected anonymously, and no academic or administrative consequences were associated with participation.

### ***Instrumentation and Distribution***

The researchers constructed a questionnaire to elicit participants' perceptions of the effectiveness of the AWC at the institution. A structured, 4-point Likert-style questionnaire comprising 22 items was developed. The questionnaire included demographic items (3 items) and questions addressing students' perceptions of communication and support during their use of AWC services, both in person and online, as well as their perceived improvement in academic writing skills (19 items). Following data collection and cleaning, the underlying structure of the instrument was examined using exploratory factor analysis (EFA). Following EFA and item screening, 16 items were retained for scale reliability analysis.

Cronbach's alpha was applied to evaluate the reliability of the questionnaire (Cronbach, 1951). Under standard conditions, acceptable reliability is indicated by Cronbach's alpha values greater than .70 (Cheung et al., 2023; Youssef et al.,

2023). The overall Cronbach's alpha for the Likert-scale items in this study was .914, indicating excellent internal consistency (see Table 1).

**Table 1: Reliability Statistics**

Cronbach's Alpha	N of Items
.914	16

Factor-specific reliability analyses were also conducted based on the EFA results. Student Satisfaction with AWC Services and the Impact of its Services on Students' Academic Writing factor demonstrated very high internal consistency ( $\alpha = .939$ ). The Perceived Enhancement of Academic Writing Skills factor showed moderate internal consistency ( $\alpha = .539$ ), which is acceptable given the limited number of items loading on this factor and its focused conceptual scope. Reliability analysis was not conducted for the frequency of use of AWC services factor, as it consisted of a single item measuring behavioral frequency, for which internal consistency estimation is not applicable. Overall, these findings support the reliability of the instrument at both the global and factor-specific levels. As the study relied on self-reported perceptions of satisfaction and writing improvement, the results reflect perceived rather than objectively measured gains in academic writing performance.

### **Data Analysis**

Data collection involved the recruitment of 238 subjects who were all students at the institution and who were randomly dispersed across a number of disciplines as well as classes. While 19.7% of respondents were pursuing artificial intelligence, 18.1% were pursuing business administration, 14.7% were pursuing biotechnology, 7.6% were pursuing mechanical engineering, 7.6% were pursuing chemical engineering, and 7.1% were pursuing computer science. The remainder were distributed among Architecture (5.9%), Computer Engineering (5.5%), Electrical and Electronics Engineering (6.3%), Civil Engineering (3.8%), Mass Communication (2.1%), and Master of Education (1.7%). By academic year, 90.8% were first-year students, 7.1% were second-year students, 0.8% were third-year students, and 1.3% were graduate students. By use of AWC, 31.5% used the Writing Center 1–2 times in the semester, 34.9% used 3–4 times, and 33.6% used 5 or more times.

Using the quantitative approach employed in this study, an in-depth analysis was conducted with SPSS, a very powerful tool for quantitative data analysis. First, an exploratory factor analysis (EFA) was conducted to validate the constructs employed in the questionnaire, namely, those for student satisfaction, usage of services, and perceived acquisition of academic writing skills. This was conducted to detect patterns and correlations in survey data. Having determined the relevant factors, we performed a series of statistical tests that aligned with the research questions: Pearson correlation and linear regression to examine how student satisfaction relates to the frequency of AWC service use and one-way

ANOVA to examine the extent to which AWC services contribute to students' academic writing progress.

### ***Exploratory Factor Analysis***

An EFA is a statistical tool used to identify patterns within a set of observed variables. It is often employed by researchers to explore relationships among a large number of variables (Watkins, 2021). The analysis employed principal component analysis (PCA) as the extraction method, with a varimax rotation applied to simplify and clarify the factor structure. We chose PCA for its efficiency in summarizing the variance across multiple items and varimax rotation for its ability to produce orthogonal (uncorrelated) factors, aiding interpretability. Factors were retained based on eigenvalues greater than 1.0, a standard criterion in factor analysis for identifying components that explain meaningful variance. Additional consideration was given to the scree plot, which indicated a natural cutoff in the number of factors retained. Parallel analysis was not deemed necessary in this research, given that the eigenvalue and scree plot procedures were enough justification for factor retention based on the observed patterns of data.

The adequacy of the data for exploratory factor analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. The KMO value of .923 exceeded the recommended minimum threshold of .60, indicating that the data were suitable for factor analysis. Bartlett's test of sphericity was also significant ( $p < .001$ ), confirming sufficient intercorrelations among variables. Although parallel analysis was not conducted, the combination of the eigenvalues-greater-than-one criterion and scree plot interpretation provided adequate empirical justification for exploratory factor analysis.

### **Validity of the Questionnaire**

The authors applied a systematic approach to determine the validity of the research instrument. To determine the validity of the instrument, the construct validity principle was considered while it was being developed. The survey items were designed to map existing theoretical frameworks such as Vygotsky's Zone of Proximal Development (1978), Astin's Student Involvement Theory (1984), and Tinto's Model of Student Retention (1993), and face validity was checked by three domain experts. Each of the experts possessed a robust background in higher education, academic support services, and survey research and had a minimum of eight years of experience. It is aligned with Lynn's (1986) recommendation of using a small number of highly qualified experts for content validation judgment to assess the relevance and adequacy of survey items. The responses they provided were used to verify that the survey under items effectively measured the constructs being investigated and were suitable for the target population, thereby enhancing the overall validity of the instrument (Lynn, 1986; Anastasi, 1988). The development of the survey questions was informed by major theoretical ideas, such as Vygotsky's Zone of Proximal Development (ZPD), Astin's Theory of Student Involvement, and Tinto's Student Retention Model, in this way ensuring

that each question touched on the essential aspects of student engagement, academic support, and scaffolded learning.

Construct validity was assessed using exploratory factor analysis (EFA), which examined the underlying factor structure and item loadings. The EFA revealed a well-defined factor structure, with items loading significantly onto distinct factors representing various dimensions of student perceptions of writing center services and academic writing improvement, confirming the correlations between them. The Kaiser–Meyer–Olkin (KMO) test yielded a value of .921, indicating sampling adequacy, while Bartlett’s test of sphericity was significant ( $p < .000$ ), supporting the use of factor analysis. Factors were retained based on eigenvalues greater than 1.0 and the scree plot analysis, aligning with best practices in construct validation (Field, 2024). By combining expert review for face and content validity with statistical validation techniques, the study ensured both content and construct validity, enhancing the reliability and credibility of the questionnaire.

### ***Item Analysis***

To assess the survey instrument's consistency, an item-total analysis was conducted using SPSS. This analysis indicates how much each item contributes to the total scale and whether removing any item would improve or degrade it. The Cronbach's alpha for the entire 15-item scale was 0.902, indicating high reliability and consistency. The item-total correlation table presents valuable figures such as the corrected item-total correlation and Cronbach's alpha if the item is deleted (see Table 2 for item-total statistics). These statistics allow us to understand how well each item correlates with the overall concept and whether any item detracts from the scale's reliability. Most of the items had high-corrected item-total correlations (greater than 0.40), suggesting that they were strongly related to the general satisfaction and perceived improvement of AWC services.

One of them, "The online feedback I received to help me improve my writing was not helpful," had a very low corrected item-total correlation ( $r = 0.039$ ). Its removal would have slightly increased Cronbach's alpha. Despite this, the item was kept for theoretical reasons, as it was meant to express possible discontent with online comments, which is one aspect of the essential student experience under hybrid academic support systems. Keeping the negatively worded item made the survey express more varied student attitudes, including negative opinions, at the cost of making internal consistency somewhat weaker.

In summary, the item analysis shows that the instrument is reliable, as most items contribute to reliability. The findings confirm that the survey is sufficient for assessing students' satisfaction and improvement with the Academic Writing Center's online and face-to-face services.

### **Table 2: Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The writing center (both in-person and online) positively impacted my academic performance.	28.3613	45.312	.767	.905
It was easy to book an appointment for an online consultation or submit a document for online feedback.	28.5126	46.242	.624	.908
The available hours are convenient for both in-person and online services.	28.4160	46.084	.640	.908
The writing center, including its online services (e.g., ease of access, availability of consultants, response time, etc.), is accessible when I need it.	28.4580	45.464	.684	.906
The online feedback for improving my writing was helpful.	28.4706	45.280	.678	.906
The online feedback I received for improving my writing was not helpful.	27.2731	50.402	.039	.931
The writing tutors provided me with enough examples during the online revision to make the feedback actionable.	28.2563	44.630	.750	.904
The writing tutors provided me with clear explanations during the online revision to make the feedback actionable.	28.3403	44.977	.776	.904

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The writing center helped me improve my grammar and sentence structure (through both online and in-person services).	28.3571	45.319	.702	.906
The writing center helped me improve my development of ideas (through both online and in-person services).	28.3025	44.887	.717	.905
The writing center helped me improve my citation and referencing (through both online and in-person services).	28.3866	44.744	.716	.905
The writing center helped me improve my confidence in academic writing (through both online and in-person services).	28.2941	44.259	.800	.903
The quality of online feedback that I received from writing center consultants met my expectations.	28.4160	45.079	.701	.906
The in-person service is more effective than the Writing Center's online service.	28.2563	47.499	.321	.919
The Writing Center's online service is more effective than the in-person service.	27.8109	46.466	.385	.918
Overall, I feel that my academic writing skills have developed as a result of my experiences with the Academic Writing Center.	28.4832	44.023	.819	.902

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## RESULTS

The purpose of this analysis was to investigate the relationship between students' perceptions and how often they visit the AWC to use the center's services. The results provide insights into key aspects of awareness and accessibility of its services, quality of online services, and the perceived influence of AWC services on academic writing (online and in-person).

### Exploratory Factor Analysis

A total of three distinct factors with eigenvalues equal to or greater than 1.0 were identified. These findings validate the survey's effectiveness in measuring three unique dimensions of students' satisfaction and improvement in academic writing, preferences between service formats, and critical views of online feedback. The three-factor solution accounted for approximately 67% of the cumulative variance, with each factor meeting the eigenvalue >1 criterion. Table 3 presents the total variance explained, and Table 4 displays the rotated component matrix.

**Table 3: Total Variance Explained**

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	8.210	51.313	51.313
2	1.367	8.547	59.860
3	1.236	7.723	67.583

Extraction Method: Principal Component Analysis.

**Table 4: Rotated Component Matrix**

	Component
It was easy to book an appointment for an online consultation or submit a document for online feedback.	.734
The available hours are convenient for both in-person and online services.	.700
The writing center, including its online services (e.g., ease of access, availability of consultants, response time, etc.), is accessible when I need it.	.776
The quality of online feedback that I received from writing center consultants met my expectations.	.820
The online feedback for improving my writing was helpful.	.830
The online feedback I received for improving my writing was not helpful.	.825

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The writing tutors provided me with enough examples during the online revision to make the feedback actionable.	.732
The writing tutors provided me with clear explanations during the online revision to make the feedback actionable.	.759
The writing center helped me improve my grammar and sentence structure (through both online and in-person services).	.577
The writing center helped me improve my development of ideas (through both online and in-person services).	.563
The writing center helped me improve my citation and referencing (through both online and in-person services).	.546
The writing center helped me improve my confidence in academic writing (through both online and in-person services).	.670
The writing center (both in-person and online) positively impacted my academic performance.	.643
The in-person service is more effective than the Writing Center's online service.	.794
The Writing Center's online service is more effective than the in-person service.	.757
Overall, I feel that my academic writing skills have developed as a result of my experiences with the Academic Writing Center.	.663
Extraction Method: Principal Component Analysis.	
Rotation Method: Varimax with Kaiser Normalization. <sup>a</sup>	

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a. Rotation converged in 7 iterations.

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***Overview of Factors***

The exploratory factor analysis yielded a clear three-factor structure representing distinct but related dimensions of students' perceptions of academic writing center services. As summarized in Table 5, the factors capture (1) students' overall satisfaction with AWC services and perceived improvement in academic writing, (2) preferences between in-person and online service formats, and (3) critical perceptions of online feedback quality. The pattern of factor loadings demonstrates conceptual coherence across items related to accessibility, tutor support, writing development, and service modality while also distinguishing areas of dissatisfaction within the hybrid writing support model. Collectively, these factors support the construct validity of the survey instrument.

**Table 5: Overview of Factors**

Factor	Name	Description
1	Students' satisfaction and perceptions of improvement in academic writing skills	Factor 1 accounted for approximately 51.31% of the variance in the rotated factor solution. It included strong loadings from items related to appointment booking, accessibility, quality, and usefulness of online feedback, tutor explanations, and perceived improvement in grammar, idea development, citation, confidence, and overall academic performance. The global item reflecting students' overall development of academic writing skills also loaded strongly on this factor. Together, these items capture a comprehensive perception of AWC effectiveness and students' perceived academic writing development.
2	Student preferences between in-person and online formats	Factor 2 explained an additional 8.54% of the variance and was primarily defined by items indicating that in-person writing center services were perceived as more effective than online alternatives. Although several writing-improvement items demonstrated moderate cross-loadings with this factor, the dominant loading pattern reflects a distinct dimension related to students' preferences for service modality.
3	Disappointment with online feedback despite accessibility	Factor 3 accounted for an additional 7.72% of the variance. It included items reflecting dissatisfaction with the quality of online feedback and perceptions that online services were less effective than in-person consultations. This factor represents a critical evaluation dimension, highlighting a subgroup of students who, while benefiting from service accessibility, expressed concerns regarding the instructional value of online feedback.

Together, the three extracted factors accounted for 66.91% of the total variance, supporting the adequacy of the factor structure for representing students' perceptions of academic writing support services. This level of explained variance

exceeds the commonly recommended threshold of 60% for exploratory factor analysis in social sciences research (Hair et al., 2019).

**One-Way ANOVA: The Effect of AWC Usage Frequency on Perceived Academic Improvement**

A one-way ANOVA tested the effect of AWC usage frequency on students’ perceived academic improvement. In this analysis, the independent variable was categorized as follows:

- 1–2 times (low usage)
- 3–4 times (moderate usage)
- 5 times or more (high usage)

The dependent variable was students’ responses to the statement, ‘The writing center (both in person and online) positively impacted my academic performance,’ rated on a 4-point Likert scale (1 = Strongly Agree, 4 = Strongly Disagree).

The results revealed a statistically significant difference in perceived academic improvement among the three groups,  $F(2, 235) = 88.98, p < .001$ , with a large effect size ( $\eta^2 = .43$ ), indicating that 43% of the variance in perceived improvement was explained by AWC usage frequency. Although Levene’s test indicated a violation of the homogeneity of variance assumption ( $p < .001$ ), the analysis proceeded due to ANOVA’s robustness in large samples with reasonably balanced group sizes.

Post hoc comparisons using Tukey’s HSD test showed that students who used the AWC five times or more reported significantly greater academic improvement ( $M = 1.26$ ) than those who used it 1–2 times ( $M = 2.08$ ) or 3–4 times ( $M = 2.06$ ), both  $p < .001$ . However, no significant difference was found between the 1–2 and 3–4 usage groups ( $p = .957$ ). These findings suggest a strong positive association between a higher frequency of AWC use and students’ perceived improvement in academic performance (see Table 6).

**Table 6: One-way ANOVA Output**

Model Summary				
Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.429 <sup>a</sup>	.184	.174	.90884466

a. Predictors: (Constant), What year are you in, How many times have you used the writing center this semester? What is your major?

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.716	3	14.572	17.642	.000 <sup>b</sup>

Residual	193.284	234	.826	
Total	237,000	237		

a. Dependent Variable: REGR factor score 1 for analysis 1

How many times have you used ? b. Predictors: (Constant), What year are you in the writing center this semester? What is your major?

Model	Coefficients <sup>a</sup>				t	Sig.	Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficients	Beta			Tolerance	VIF
	B	Std. Error						
(Constant)	1.06	.275		3.88	.000			
1 What is your major?	.047	.053	.054	.902	.368	.980	1.02	
How many times have you used the writing center this semester?	-.521	.073	-.421	-7.13	.000	.998	1.00	
What year are you in?	-.149	.111	-.080	-1.34	.181	.980	1.02	

a. Dependent Variable: REGR factor score 1 for analysis 1

While the ANOVA confirmed that the frequency of AWC usage significantly impacts students' perceptions of academic improvement, it examined only a single predictor. To explore whether additional student characteristics, such as academic major and academic year, also contribute to perceived satisfaction and writing development, a multiple linear regression was conducted using Factor 1 as the dependent variable. The detailed ANOVA output, including mean differences across usage groups, is provided in Table 6.

### Ordinal Logistic Regression: Predicting Students' Perceived Improvement in Academic Writing Skills Based on the Frequency of AWC Usage

An ordinal logistic regression was conducted to determine whether the frequency of using AWC services significantly predicted students' perceived improvement in academic writing skills. Following a preliminary analysis, perceived improvement scores were recoded into four ordered categories (low, moderate, high, and very high) to address sparse data and enhance model stability while maintaining the ordinal structure necessary for this test. The four categories were coded as follows: 1 = low, 2 = moderate, 3 = high, and 4 = very high perceived improvement.

The results revealed that the overall model was statistically significant,  $\chi^2(2) = 69.640, p < .001$ , indicating that the frequency of AWC usage reliably predicted differences in perceived improvement levels. The model showed an acceptable fit based on the Pearson goodness-of-fit statistic ( $p = .094$ ) and explained approximately 30% of the variance in improvement perceptions (Nagelkerke  $R^2 = 0.299$ ). Although the Test of Parallel Lines was significant ( $p = .039$ ), suggesting a violation of the proportional odds assumption, the model was retained given theoretical coherence and stable parameter estimates.

The ordinal logistic regression analysis showed that students who used the AWC services more frequently were significantly more likely to report higher levels of perceived improvement in academic writing skills. Students who visited the AWC only 1–2 times had substantially lower odds of reporting higher improvement levels compared to those who visited five or more times ( $\text{Exp}(B) = 0.08, p < .001$ ). Similarly, students who visited 3–4 times also had lower odds compared to frequent users ( $\text{Exp}(B) = 0.09, p < .001$ ). These results highlight that an increased frequency of AWC usage is strongly associated with better self-reported academic writing development, emphasizing the critical role of sustained engagement in supporting students’ learning outcomes. The regression model summary, including pseudo-R-squared values and parameter estimates, is available in Table 7.

**Table 7: Ordinal Logistic Regression**

<b>Model Fitting Information</b>							
Model	-2 Log Likelihood	Chi-Square	df	Sig.			
Intercept Only	103.578						
Final	33.938	69.640	2	.000			
Link function: Logit.							
<b>Goodness-of-Fit</b>							
	Chi-Square	df	Sig.				
Pearson	7.922	4	.094				
Deviance	10.106	4	.039				
Link function: Logit.							
<b>Pseudo R-Square</b>							
Cox and Snell			.254				
Nagelkerke			.299				
McFadden			.155				
Link function: Logit.							
<b>Parameter Estimates</b>							
	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Threshold[Improvement level = 1.00]	1.250	.268	21,700	1	1.000	.724	1,776

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	[Improvement level = 2.00]	4.558	.384	141.257	1.000	3.806	5.310
	[Improvement level = 3.00]	6.153	.585	110.581	1.000	5.006	7,300
Location	[q0003=1.00]	2.529	.372	46.209	1.000	1,799	3.258
	[q0003=2.00]	2.395	.360	44.232	1.000	1.689	3.101
	[q0003=3.00]	0 <sup>a</sup>	.	.	0	.	.

Link function: Logit.

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a. This parameter is set to zero because it is redundant.

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Collectively, these findings demonstrate that the frequency of writing center usage significantly shaped students' perceptions of their academic writing improvement, highlighting the predictive value of ordinal logistic regression in educational research.

The findings of this study offer important insights into how students experience and perceive academic writing support in a hybrid model within the context of UAE higher education. Building on the results, this discussion interprets the findings through relevant theoretical frameworks and prior research. Two key findings emerged: (1) the critical role of sustained engagement in driving satisfaction and improvement and (2) the nuanced perceptions of online versus in-person support within a hybrid writing center. Although not explored in depth in the final analysis, several students expressed a preference for in-person writing center consultations, aligning with past research on the importance of direct interaction in academic support services.

## **DISCUSSION**

This study offers empirically grounded insights into how students experience and benefit from academic writing center support, with clear practical implications for writing center design and institutional policy. The findings move beyond descriptive evaluation by identifying patterns of sustained engagement and modality preference that can inform decisions related to resource allocation, tutor training, and the structuring of hybrid academic writing support services. In this way, these findings present actionable insights for institutions seeking to enhance the effectiveness and equity of writing center provision in multilingual higher education contexts.

Building on this quantitative foundation, the extracted factors provide a reliable structure for further analysis and align well with the study's conceptual framework. Factor 1, which centers on students' satisfaction with writing center services, including accessibility, feedback quality, and perceived improvement in academic writing, was used as a composite outcome variable in a subsequent one-way ANOVA to address RQ1 and an ordinal logistic regression analysis to address RQ3, which investigated the predictive relationship between usage frequency and perceived improvement levels. Factor 2 captured a more complex experience: while some students appreciated the convenience of online support,

they reported dissatisfaction with the quality of feedback, highlighting the need to refine virtual consultation practices to better meet diverse learner needs.

### **Sustained Engagement as a Predictor of Student Satisfaction and Writing Development**

These findings directly address H1 and H3 by demonstrating that sustained AWC engagement is associated with higher satisfaction and predicts perceived improvement in academic writing. The clearest finding from this study is that frequent use of the Academic Writing Center (AWC) significantly predicts both student satisfaction and self-reported improvement in academic writing. Students who engaged five times or more had significantly higher odds of reporting greater writing development gains than those with limited or moderate use. This trend held true regardless of students' academic major or year, indicating that the benefits of AWC engagement are broadly distributed across disciplines and levels of study.

This finding reinforces the foundational arguments of Astin's (1984) student involvement theory, which posits that student learning and personal development are directly proportional to the quality and quantity of student involvement. Similarly, Tinto's (1993) model of student retention highlights the importance of academic integration in fostering student satisfaction and persistence. The current study confirms that when writing centers are positioned as accessible and consistent support systems, they can play an important role in facilitating academic integration. Notably, we found this to be true even in multilingual and multicultural contexts, such as those found in UAE institutions.

The use of ordinal logistic regression further reinforced these findings by demonstrating that the frequency of AWC engagement significantly predicted students' perceived levels of improvement in academic writing skills. Students who visited the writing center more frequently were substantially more likely to report higher improvement categories, even after accounting for variations in academic major and year. This predictive relationship highlights not merely a correlational trend but also a meaningful directional association, where sustained writing center engagement actively supports students' perceptions of their academic growth. These results strengthen the argument for designing writing center initiatives that prioritize longitudinal and scaffolded student participation.

Moreover, this finding affirms prior research asserting that repeated engagement with writing centers leads to improved writing outcomes (Salazar, 2021; Tiruchittampalam et al., 2018). What our study adds, however, is a Gulf-based, hybrid-context perspective. In this context, the writing center serves as both a resource for struggling writers and as a partner in academic development. This reframes the writing center's function from remedial to developmental, challenging the persistent perception that academic support services are "only for students in trouble."

The absence of significant differences by major or academic year also carries important implications for institutional policy. This suggests that writing centers are not discipline-bound in their impact and may be especially valuable for STEM

and professional program students, who may receive less structured writing instruction within their core curricula. This aligns with Barron et al.'s (2022) call to "rethink writing center work" and extend writing support equitably across campus populations.

From a design perspective, these findings support a strategic push for longitudinal engagement models in writing center programming. Rather than promoting one-time visits or drop-in consultations, institutions may consider implementing scaffolded writing support plans, whereby students are encouraged, or even incentivized, to engage at multiple points across the semester or academic year. Embedding practices within advising, first-year programs, or capstone courses could normalize academic support as essential.

### **Perceived Effectiveness and Design Limitations of Hybrid Writing Center Models**

This pattern provides support for H2, indicating a statistically significant perceived difference between online and in-person AWC services. Although hybrid academic support models are often valued for their flexibility and accessibility, the findings of this study suggest a more differentiated student experience, with in-person writing center services perceived as more effective than online alternatives. The observed difference was associated with a large effect size ( $\eta^2 = .25$ ), indicating that service modality accounted for a substantial proportion of the variance in students' perceived effectiveness ratings. In-person consultations may allow for more nuanced verbal and nonverbal communication, more immediate dialogic interaction, and greater opportunities for relational trust-building between tutors and students. These interactional features may be particularly salient in higher education contexts where relational trust plays an important role in student engagement, as is often the case in Gulf and Arab educational settings. This interpretation is consistent with Muthuswamy and Varshika's (2023) findings, which highlight how cultural distance and language barriers can shape help-seeking behaviors among international students and may contribute to a preference for face-to-face academic support.

From a theoretical standpoint, the Zone of Proximal Development (Vygotsky, 1978) and the Cognitive Apprenticeship model (Collins et al., 2018) both highlight the importance of scaffolded, interactive learning in student development. When translated to a digital context, the success of such scaffolding depends not only on the content of the feedback but also on how the interaction is structured and on whether the student feels supported, understood, and guided through dialog. In asynchronous feedback models, this scaffolding can easily breakdown, particularly if the feedback lacks clarity, personalization, or actionable suggestions. Thus, while digital access solves logistical barriers, it may introduce cognitive or motivational barriers if not intentionally designed to replicate the dialogic features of in-person sessions.

The nuance of this dynamic was revealed more fully in the factor analysis, which identified a distinct subgroup of students who, despite appreciating the accessibility of online services, expressed disappointment with the quality of

online feedback. This finding complicates the prevailing assumption that hybrid models inherently meet the needs of all students. This suggests that accessibility alone is not a sufficient metric of success; effectiveness must also be evaluated in terms of how well students are supported in their learning processes. Notably, this subgroup's experience aligns with broader research on social presence and cognitive engagement in online learning environments (Garrison et al., 2000; Chi & Wylie, 2014), which shows that when students feel disconnected from their tutor or unclear about how to improve, their engagement and ultimately their outcomes may suffer.

For institutions, these findings carry several strategic implications. First, they indicate a need to invest in modality-specific tutor training, ensuring that tutors are equipped not only to provide feedback but also to do so effectively in virtual formats. Second, writing centers may consider offering students greater agency in choosing their preferred modality or even combining modalities, for example, receiving written comments followed by a live video consultation. Third, there is an opportunity to reframe online writing support not as a second-best alternative but as a distinct pedagogical environment with its own principles of engagement, interaction, and responsiveness.

Ultimately, these findings underscore that hybrid models are not neutral. They are experienced differently by students based on factors such as learning preferences, digital literacy, and prior experience with academic writing. A successful hybrid writing center must therefore do more than offer parallel services; it must design for equity, quality, and connection across modalities.

Together, these findings advance our understanding of writing center effectiveness in hybrid, multilingual higher education environments. They affirm the value of sustained, scaffolded engagement in promoting both student satisfaction and perceived academic development, regardless of academic discipline or level, and reveal important design considerations for ensuring that hybrid models serve all learners equitably. As institutions in the Gulf and beyond continue to navigate post pandemic learning ecosystems, the results underscore a need to balance flexibility with intentionality, ensuring that writing support services are not only accessible but genuinely impactful. Future research could explore these dynamics across institutions or examine the long-term outcomes of hybrid academic support.

### **Limitations and Delimitations**

While this study provides important insights into student perceptions of hybrid writing center services, certain limitations must be acknowledged. First, the study relied on self-report survey data, which may be subject to social desirability bias or inaccuracies in how students perceive their academic improvement. As participation was limited to students who had previously accessed Academic Writing Center services, the findings may reflect the perspectives of students who are more inclined to seek academic support. Accordingly, the results should be interpreted as representative of engaged AWC users rather than the broader student population. Second, the sample was restricted

to one institution, which may limit the generalizability of findings to other higher education contexts, particularly outside the UAE or the Gulf region. Third, participation in the study was voluntary, which may have further contributed to self-selection effects within the sample. Additionally, while exploratory factor analysis (EFA) supported the construct validity of the instrument, the absence of parallel analysis is noted as a methodological limitation, and future research could strengthen factor retention decisions by employing this technique.

Delimitations of the study were also established to focus the research scope. The study included only students who had accessed AWC services during the selected academic term, excluding those who had not engaged with the center. Moreover, the investigation centered on perceived improvement rather than measuring objective academic writing performance through assessments or writing samples. The sample was further limited to users of either online or in-person AWC services, aligning with the research aim of evaluating experiences within a hybrid academic support model. These choices were made intentionally to allow for a targeted exploration of student experiences within a specific institutional and service-use context.

## Implications

In light of the study's findings, several recommendations can be made to enhance the effectiveness of hybrid writing centers. Institutions should consider implementing structured, longitudinal engagement plans that encourage students to interact with writing support services regularly throughout their academic journey, not only at the beginning stages. Additionally, training programs tailored for online tutors should emphasize building a social presence and providing clear, personalized feedback to mitigate dissatisfaction with virtual services. Writing centers may also benefit from offering students flexibility in choosing or combining in-person and online consultations to better align with diverse learning preferences. Future research should explore how these recommendations influence long-term academic writing development across different institutional contexts.

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- None
- Some sections, with minimal or no editing
- Some sections, with extensive editing
- Entire work, with minimal or no editing
- Entire work, with extensive editing

*During the preparation of this manuscript, the author(s) used an AI language model (Gemini by Google and Grammarly) to assist with editing and formatting. The AI was used to improve language and clarity. The author(s) reviewed and take full responsibility for all content, including the final text, analyses, and conclusions, which are the product of the authors' own research and intellectual work.*

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REFERENCES

- Anastasi, A. (1988). *Psychological testing* (6th ed.). Macmillan.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25(4), 297–308.
- Barron, N., Grimm, N., & Gruber, S. (2022). Rethinking writing center works to transform a system of white supremacy. In N. Barron, N. Grimm, & S. Gruber (Eds.), *Redesigning writing centers for antiracist work* (pp. 3–22). University Press of Colorado.
- Bromley, P., Northway, K., & Schonberg, E. (2016). Transfer and dispositions in writing centers: A cross-institutional, mixed-methods study. *Across the Disciplines*, 13(1), 1–15. <https://doi.org/10.37514/ATD-J.2016.13.1.01>
- Bruner, J. S. (1986). *Actual minds, possible worlds*. Harvard University Press.
- Carino, P. (1995). Early writing centers: Toward a history. *The Writing Center Journal*, 15(2), 103–115.
- Cheung, G. W., Cooper-Thomas, H. D., Lau, R. S., & Wang, L. C. (2024). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations. *Asia pacific journal of management*, 41(2), 745-783.
- Chi, M. T. H., & Wylie, R. (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational Psychologist*, 49(4), 219–243. <https://doi.org/10.1080/00461520.2014.965823>
- Collins, A., Brown, J. S., & Newman, S. E. (2018). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In *Knowing, learning, and instruction* (pp. 453-494). Routledge.
- Conroy, R. (2015). Sample size: A rough guide. Retrieved from [http://www.beaumontethics.ie/docs/application/sample\\_size\\_calculation.pdf](http://www.beaumontethics.ie/docs/application/sample_size_calculation.pdf).
- Creswell, J. W., & Creswell, J. D. (2022). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334.
- Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. *Nurse Researcher*, 23(6), 20–25. <https://doi.org/10.7748/nr.2016.e1382>
- Field, A. (2024). *Discovering statistics using IBM SPSS statistics*. Sage publications limited.
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The internet and Higher Education*, 2(2–3), 87–105. [https://doi.org/10.1016/S1096-7516\(00\)00016-6](https://doi.org/10.1016/S1096-7516(00)00016-6)
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Harland, T. (2003). Vygotsky's zone of proximal development and problem-based learning: Linking a theoretical concept with practice through action

- research. *Teaching in Higher Education*, 8(2), 263–272.  
<https://doi.org/10.1080/1356251032000052483>
- Leedy, P. D., & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed.). Pearson Education.
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, 35(6), 382–385.
- Muthuswamy, V. V., & Varshika, G. (2023). Analysing the influence of cultural distance and language barriers on academic performance among international students in higher education institutions. *Journal of International Students*, 13(3), 415–440.
- Newsome, M., Mollazehi, M., Zidani, M., Sheik, R., & Amiry, J. (2023). A writing center's hybrid approach to supporting English academic writing skills among L2 postgraduates. *Online Learning*, 27(4), 486–507.  
<https://doi.org/10.24059/olj.v27i4.3688>
- Nordlof, J. (2019). Vygotsky's zone of proximal development and writing center practice. In J. Mackiewicz & R. D. Babcock (Eds.), *Theories and methods of writing center studies: A practical guide* (pp. 23–32). Routledge.
- Russell, D. R., & Williams, A. L. (2012). Activity theory and its implications for writing instruction. In J. Petraglia (Ed.), *Reconceiving writing, rethinking writing instruction* (pp. 51–78). Erlbaum.
- Salazar, J. J. (2021). The meaningful and significant impact of writing center visits on college writing performance. *The Writing Center Journal*, 39(1–2), 55–96. <https://www.jstor.org/stable/27172214>
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Tiruchittampalam, S., Ross, A., Whitehouse, E., & Nicholson, T. (2018). Measuring the Effectiveness of Writing Center Consultations on L2 Writers' Essay Writing Skills. *Languages*, 3(1), 4.  
<https://doi.org/10.3390/languages3010004>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Watkins, M. W. (2021). *A step-by-step guide to exploratory factor analysis with SPSS*. Routledge.
- Youssef, N., Saleeb, M., Gebreal, A., & Ghazy, R. M. (2023, July). The internal reliability and construct validity of the evidence-based practice questionnaire (EBPQ): Evidence from healthcare professionals in the Eastern Mediterranean Region. In *Healthcare* (Vol. 11, No. 15, p. 2168). MDPI.
- Zou, Y., & Fu, S. (2025). Navigating academic acculturation among international students: Peer network, advising, and field-specific challenges in STEM and non-STEM fields. *Journal of International Students*, 15(8), 161–184. <https://doi.org/10.32674/72tbze06>

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