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Academic-Career Counseling Based on the Brain Training Approach

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ABSTRACT

Objective: The objective of this investigation was to conduct academic and career counseling through the lens of a brain training approach.

Methods: The present study employs a qualitative research paradigm, specifically utilizing content analysis and a systematic comparative categorization framework. The scope of this research encompasses a comprehensive array of literature and resources pertinent to the domain of curriculum studies, alongside texts and empirical investigations situated within the realm of brain-based education. In light of the extensive assortment of both printed and digital materials, the time frame of 2010 to 2019 has been employed for analysis. The data underwent a tripartite analytical process characterized by open, axial, and selective coding, which were subsequently articulated in a model corresponding to the specified research inquiries.

Results: The findings from the analysis indicate that the curriculum counseling framework, informed by the brain training approach, comprises: motivation derived from the brain training methodology - physiological psychology - family counseling utilizing the brain training perspective - academic guidance - career counseling grounded in the brain training approach - assessments of intelligence and aptitude within the context of self-awareness and academic advising - personal development strategies informed by the brain training model - positive psychology as conceptualized through the brain training lens - social psychology framed by the principles of brain training - personality psychology as influenced by the brain training methodology - cognitive psychology informed by the brain training paradigm - and metacognitive psychology based on the brain training approach, alongside considerations of mental health challenges.

Conclusions: Overall, the evidence obtained from this study substantiates the significance of a neurocognitive educational methodology in the domains of academic and vocational counseling.

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Introduction

Curriculum consultation constitutes a systematic process designed to fulfill the objectives of the curriculum while enhancing student learning through the provision of specialized expertise in the domains of education, learning, and curriculum development directed towards administrators, educators, learners, and guardians. This process can be effectively realized by aligning the requirements, interests, and abilities of learners with the curriculum, thereby facilitating their identification of suitable educational trajectories (Salehi Seresht & Jafari Harandi, 2022). The field of curriculum consulting is intrinsically linked to professions such as educational planning specialists, educational administrators, learning consultants, and educational advisors. Numerous ambiguities persist regarding the delineation between academic counseling and curriculum counseling; it is imperative to recognize that the primary audience for curriculum consultation encompasses learners, educators, and trainers. Although these stakeholders may share overarching objectives, their levels of engagement and domains of activity differ markedly (Roodi et al., 2018). The paramount objective of counseling is to facilitate academic achievement. By recognizing and addressing students' challenges, fostering motivation and engagement, counselors can enhance students' performance; additionally, by discerning students' strengths and interests and steering them toward fields aligned with their aptitudes, they can mitigate the risk of academic failure while bolstering students' self-efficacy in their endeavors, ultimately contributing to societal advancement and prosperity (Ornstein & Hunkins, 2017). Should curriculum consultation function as a facilitator, it endeavors to maximize outcomes relative to curricular objectives while concurrently guiding learners in alignment with the curriculum. Within the framework of curriculum consultation, various stakeholders—including teachers, parents, the learning environment, and pedagogical methodologies—play critical roles. Moreover, in the context of curriculum consultation, pedagogical strategies are evaluated in accordance with curricular requirements as well as the educational objectives and levels, with assessment methods similarly tailored to these parameters. Overall, the purpose of curriculum consultation is to furnish expert advice and guidance pertaining to curriculum and instructional activities for learners, educational institution administrators, educators, and parents (Roodi et al., 2018). In educational settings, counseling services are typically characterized as preventive or intervention-oriented and of a short-term nature, operating within the broader framework of the educational program; however,

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curriculum consultation extends beyond these dimensions by employing theories, methodologies, and strategies from the discipline of curriculum studies to enhance and target the learning processes of students (Ebrahim Kafoori et al., 2015).

On the contrary, the brain-centered educational paradigm represents the implementation of a series of pertinent principles that enhance individuals' comprehension of the brain's functioning during the educational process. This innovative educational paradigm establishes correlations between neural functionality and pedagogical activities. Brain-based learning encompasses a holistic educational framework that leverages cutting-edge findings from neuroscience. Educational neuroscience, or brain-based education, is predicated on the intrinsic mechanisms by which the human brain acquires knowledge (Baratali et al., 2014). In light of the intricacies of contemporary existence and the specialization inherent in numerous professions today, consulting services occupy a crucial position. Scholars have consistently underscored the necessity for counseling services, particularly for students across diverse psychological, academic, and vocational dimensions, affirming their efficacy (Baratali et al., 2014). Conversely, one of the emergent pedagogical methodologies in the present global landscape is the brain training and brain-based learning approach. By elucidating the complexities of neural processes, researchers in brain-based education furnish a robust justification for the establishment of interactive and self-regulated learning environments. The creation of an enriching educational milieu, alongside a focus on students' emotional experiences during the learning process, the enhancement of attentional capacities, and the establishment of meaningful connections between new and prior knowledge are among the foundational principles of this approach.

The distinguishing characteristic of this methodology, in contrast to other contemporary educational frameworks (such as constructivist, exploratory, and project-oriented approaches), lies in its emphasis on the neurological underpinnings of these principles. When educators and specialists in the field of education become cognizant of the brain's architecture as the locus of learning and understand the optimal conditions conducive to effective learning, they align their pedagogical strategies and methodologies accordingly (Nowrozi et al., 2016). Numerous researchers have indicated a deficiency in metacognitive abilities within educational systems, positing that such skills are pivotal in navigating the complexities and comprehending the surrounding environment, while also recognizing the pressing need for accurate evaluative

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measures and effective pedagogical methods for imparting these competencies (Alvarez, 2018). Furthermore, a review of both Iranian and international researches related to the topic revealed the absence of extensive studies on academic and career counseling founded on the brain training paradigm, with only relatively adjacent subjects explored in this domain, including works by Soleimani Daud Lee et al. (2019), Zeqeibi Ghannad et al. (2020), Mahmoodi et al. (2019), Madani et al. (2019), Yarmohammadi et al. (2019), Einy et al. (2019), Gebresilase and Zhao (2023), Mulhern (2020), Alvarez (2018), and Flecha (2012), all of which emphasized the significant impact of academic-career counseling grounded in the brain training approach on students' academic endeavors.

Given the critical significance of this topic, numerous stakeholders, including administrators, educators, learners, guardians, and even educational and psychological counselors within educational institutions, encounter a myriad of challenges related to the processes of curriculum planning, implementation, and evaluation of both the curriculum and its associated elements; hence, it is imperative that the existing deficiencies in this domain are systematically addressed. The significance and exigency of this investigation can be articulated and analyzed from various vantage points. From one perspective, the nascent nature of the discipline of curriculum counseling, alongside the brain-based curriculum, coupled with the scarcity of adequate resources and documentation available in Persian, renders this research a vital contribution to the repository of knowledge in this area. Given that empirical studies conducted within this domain in the country are exceedingly scarce, this research endeavors to introduce novel theoretical frameworks and elucidations that will familiarize domestic scholars and students with fundamental concepts, thereby paving the way for further empirical investigations and the application of their findings. It further aims to enhance the prevailing educational conditions. The implications of this research within the educational system are that through academic-career counseling grounded in the brain training approach, it can facilitate the enhancement of knowledge and cognitive processes regarding the curriculum in theoretical contexts, while also providing a foundation for the practical application of the knowledge generated in this field. Consequently, in this study, the researcher aims to elucidate the question: what constitutes educational-career counseling based on the brain training approach?

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Material and Methods

In the present investigation, the qualitative research methodology employed is the content analysis within the framework of a comparative categorization system. Qualitative research encompasses a comprehensive, profound, and significant approach, which may even eschew instrumental methodologies in addressing issues, behaviors, and findings. The scope of inquiry in this study encompasses all literature and resources pertaining to curriculum planning counseling that adopt a brain training perspective. For the purposes of sampling within this domain, all pertinent articles and texts published between the years 2010 and 2019 were utilized. In this research endeavor, the technique of reviewing both printed and digital texts and resources available through libraries, databases, journals, and electronic books was employed for the purpose of data collection. The analytical methodology applied in this study involved the utilization of a comparative categorization framework within the subject coding approach, which employs the paragraph as the unit of analysis and is executed in three distinct phases: the initial phase of coding entails the conversion of data and phenomena into conceptual frameworks; to achieve this, data were initially " intersected". Phrases were organized according to semantic units for the purpose of affixing annotations and "concepts" (codes) to them. Initially, salient sentences pertinent to the research inquiry were extracted and cataloged in a tabular format, subsequently leading to the extraction and coding of detailed concepts from the text. In the subsequent phase, these codes were classified based on phenomena identified in the data that bore direct relevance to the current study. The resulting categories were subsequently re-associated with codes that embodied a higher level of abstraction than those generated in the initial phase. These codes serve to distinctly represent the content of the categories and fundamentally facilitate the retention of the category's reference. To formulate the titles and nomenclature for the codes, relevant works and literature within the fields of educational sciences and counseling were consulted. The second phase of coding represented the pivotal stage in which the categories derived from open coding were refined and delineated; among the categories established during the open coding phase, those that exhibited greater relevance in subsequent stages were selected, and common concepts were aggregated. Fundamentally, axial coding encompasses the process of interrelating more fundamental categories. This process necessitates a complex engagement in inductive and analogical reasoning, which unfolds across multiple stages. The third phase constituted selective coding; that is, axial

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coding was perpetuated at a more abstract level, and each category was duly labeled. In addressing ethical considerations, assurances were provided to the statistical samples that participation in the research is voluntary and devoid of coercion.

Results

In response to the research questions, the qualitative data collected from the qualitative content analysis process was analyzed in the form of open coding. The implementation of the open coding process on the collected qualitative data first led to the extraction of a large number of features and concepts, which were reduced and categorized based on the similarities and commonalities of the concepts and categories. At this stage, primary codes were identified. In the following, these extracted features and concepts were categorized into similar and coherent groups, and the network of themes was analyzed and revised several times, and finally the main categories were created.

Table 1. Codes extracted from the content of the texts in the field of academic-career counseling based on the brain training approach

Open codes	Axial codes	Core category
84 .The effect of metacognitive thought control training on academic progress 294 .Lack of metacognitive ability in educational systems 295 .Lack of detailed evaluation policies of metacognitive skills 296 .Lack of effective methods of teaching metacognitive skills. 310 .The relationship between the development of metacognitive skills and reading. 311 .The relationship between the development of metacognitive skills and writing.	Metacognitive strategies	Metacognitive psychology
228. The relationship between cognitive involvement and academic achievement **224.** Positive and significant correlation between cognitive engagement and academic progress	Cognitive engagement	
158. The relationship between the structure of academic engagement and academic performance **230.** Positive relationship between academic involvement and academic performance **237.** The significant effect of academic conflict on academic achievement **283.** Among the factors of academic progress, students' involvement in school experiences	Academic engagement	
225. Positive and significant correlation between emotional involvement and academic progress	Affective engagement	
226. Positive and significant correlation between behavioral involvement and academic progress	Behavioral engagement	
4. Exercise strategy affecting academic performance motivation	Exercise solution strategy	
103. The effect of academic emphasis on student academic success	Academic emphasis	
136. The effect of self-discipline motivation on academic progress	Self-regulation	

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231. Positive relationship between self-discipline and academic performance **137.** The effect of student's disciplinary status on academic performance **869.** Having order in the lives of successful students		Metacognitive psychology
152. Positive relationship between academic meaning and academic performance **245.** The relationship between meaningfulness and academic performance	Academic significance	
243. The effect of academic persistence on academic progress	Academic hardiness	
155. The effect of student motivation on academic performance **156.** The significant relationship between motivation and academic progress **157.** The relationship between motivation and academic performance **142.** The effect of motivational strategies on academic progress	Students' motivation	
8. The effect of motivation on academic progress **24.** The effect of academic progress motivation on academic self-efficacy **25.** The effect of academic achievement motivation on academic assignments **33.** The effect of high motivation in students on increasing academic progress **34.** The effect of high student motivation on reducing anxiety **282.** The relationship between achievement motivation and student success **786.** Having a high academic motivation in the student **787.** Having a high achievement motivation in the student **817.** Having motivation to achieve the goal	High student motivation	Motivation
18. The effect of competition on increasing academic performance **19.** The effect of competition on improving student educational results **20.** The effect of competition on reducing student procrastination **21.** The effect of competition on increasing motivation **22.** The effect of competition on student effort	Students' sense of competition	Motivation
149. The effect of epistemological beliefs on academic performance **150.** The positive effect of epistemological beliefs on motivation **151.** The positive effect of epistemological beliefs on performance **234.** The direct effect of epistemological beliefs on the student's academic performance	Epistemological beliefs	Epistemological beliefs
96. Using private classes to improve students' academic status and academic self-efficacy	Compensatory classes	Social educational activities
97. Using academic skills training workshops to improve students' academic status and academic self-efficacy **196.** The effect of students gathering on learning **195.** The effect of group work on learning	Group activities	Group-social activities
812. Participation of successful students in scientific discussions	Activity in scientific topics	
86. The effect of time management skills on academic progress **278.** Positive relationship between time management and quality of time **305.** The relationship between life success and students' ability to plan their time.	Time management skills	Psychology of time management

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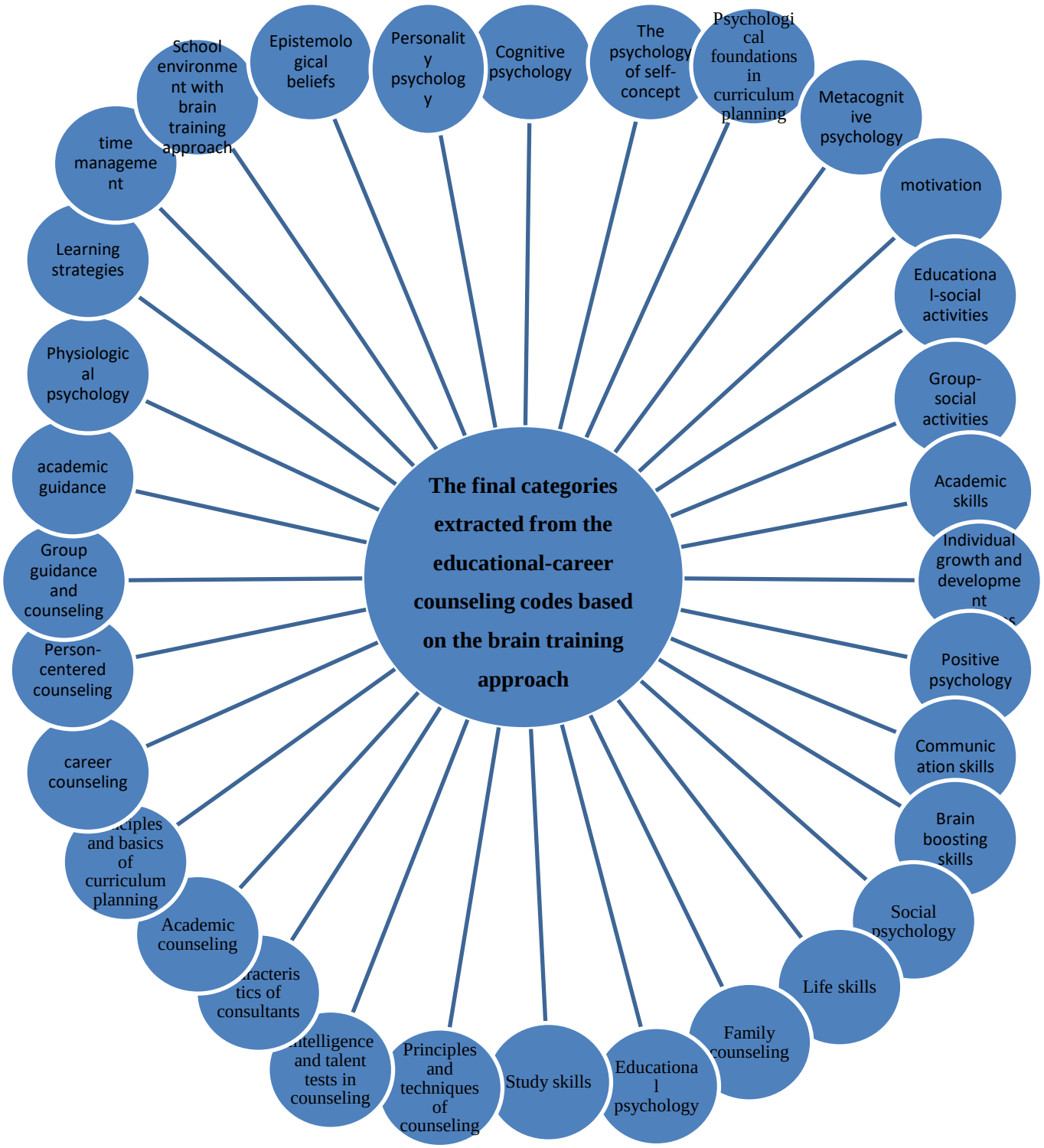

Figure 1. Academic-career counseling based on the brain training approach

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Discussion

The overarching objective of this investigation pertains to academic-career counseling predicated on a brain training paradigm. The findings derived from the analysis concerning academic-career counseling grounded in the brain training framework encompass: motivation informed by the brain training methodology - physiological psychology - familial counseling utilizing the brain training approach - academic - career counseling anchored in the brain training model - intelligence and aptitude assessments pertinent to self-awareness and academic guidance - strategies for personal growth and development informed by the brain training perspective - positive psychology as it relates to the brain training paradigm - social psychology through the lens of the brain training model - personality psychology aligned with the brain training approach - cognitive psychology as influenced by the brain training methodology - metacognitive psychology based on the principles of brain training and psychological traumas has been elucidated.

A critical domain wherein numerous individuals require consultancy is education and the academic challenges they encounter. Academic counseling is administered with the intention of preempting academic difficulties, during which individuals are instructed in essential academic competencies such as strategic academic planning, effective study methodologies, note-taking and summarizing techniques, attentive listening, resource utilization, and management. Furthermore, strategies for alleviating examination anxiety are provided. Additionally, given that career counseling equips students with valuable methodologies and insights regarding their capabilities, attributes, aspirations, and desires, it enhances academic motivation and alleviates their apprehensions concerning future educational and career trajectories.

Numerous organizations offering career counseling inflict substantial detriment upon individuals, with the nine principal adverse consequences of these entities including: insufficient emphasis on career counseling, lack of job analysis, inadequate assessment of individuals, unfamiliarity with self-identification and failure to maintain a psychological dossier, absence of a career counseling specialist on the central committee, non-utilization of career counseling experts, transformation of institutions into job placement agencies, and the ignorance of managers and job seekers regarding the consulted institutions. The selection of an academic field holds significant implications for an individual's future and success at various life stages. This consequential decision is often made during the most pivotal phase of adolescence. It is conceivable that students may select a field due

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to ignorance, obstinacy, neglecting fundamental criteria, and heeding erroneous influences such as the opinions of others, which may culminate in numerous challenges in the future. Should the chosen field not align with the student's innate talents and interests, the potential for personal flourishing will be severely compromised. An adept counselor or psychologist facilitates the identification of students' talents and interests, ultimately guiding them and their guardians in selecting the most suitable field through the administration of diverse standard assessments and personality evaluations.

One of the primary benefits of counseling in the selection of an academic discipline is that the alignment of the student's interests and inherent capabilities with the chosen field obviates subsequent challenges, such as diminished motivation and disinterest, which could adversely affect both the student and their guardians. The role of school counseling is vital and indispensable in the educational framework, necessitating that school counselors possess the requisite qualifications, expertise, and skills to facilitate the intricate interactions among the tripartite entities of student, family, and educational institution. By fostering an atmosphere of trust, counselors should enable students facing difficulties to articulate their concerns; furthermore, the quantitative and qualitative enhancement of counseling and guidance services within educational settings—particularly in light of the imperative to advance mental health and address the plethora of emerging societal challenges—serves as a salient indicator of institutional development and progress.

Educational and training programs epitomize the educational structure, and an analysis of various counseling requirements revealed that the demand for guidance in the realm of continuing education at the tertiary level and curricular design constitutes one of the paramount needs identified by students in this investigation. An effective academic advisor is obliged to allocate time for their students and elucidate strategies for enhancing learning and study methodologies. Counseling transpires within the context of an assistive process, wherein the counselor's intervention empowers the client to identify resolutions to their challenges, thereby equipping them to apply their capabilities in addressing future issues post-counseling (Hosseinian & Khodabakhshi, 2016). Ashrafi et al. (2017) posits that academic guidance and counseling encompass the support provided to individuals regarding all facets of their academic pursuits, facilitating the enhancement of their knowledge base and the augmentation of their technical and

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specialized competencies. Counseling is characterized as a reciprocal and goal-oriented dialogue, which commences when one participant encounters a problem and seeks a viable solution.

In addressing the limitations inherent in the research, it is essential to acknowledge that the expert community and its evolution may yield a modified version of this model; hence, the extrapolation of findings from this study should be approached with prudence. In light of the research findings, it is proposed that the implications derived from the efficacy of the educational package hold significant practical relevance for stakeholders within the education and training sector, particularly in relation to foundational documents, counselors, and educational psychologists. Through the training and implementation of this package, it is feasible to mitigate the adverse effects associated with education while simultaneously amplifying numerous beneficial outcomes in the educational landscape.

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Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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