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Comparative Analysis of Academic Self-Efficacy and Quality of Life among Students with special needs and General education students in Secondary Schools

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Abstract

This study adopts a descriptive-comparative approach to explore differences in academic self-efficacy and quality of life among 471 secondary school students in Ismailia Governorate, including 221 students with special needs and 250 general education peers. Data were collected using the Academic Self-Efficacy Scale and the World Health Organization Quality of Life – BREF (WHOQOL-BREF) instrument. Statistical analyses included independent samples *t*-tests, one-way ANOVA, multiple regression, and multivariate analysis of variance (MANOVA). Results showed no significant difference in academic self-efficacy between students with special needs (M = 67.81, SD = 13.62) and general education students (M = 67.93, SD = 10.67), t (156.70) = –0.076, p = .940. However, a significant difference was found in quality-of-life scores, favoring general education students, favoring General education students (M = 92.35, SD = 9.06) over their peers with special needs (M = 86.21, SD = 14.37), t(318) = –4.628, p < .001. The MANOVA results indicated no significant multivariate effect for student type on combined dimensions, Wilks' Lambda = 0.993, F (9, 210) = 0.156, p = 0.998, partial η^2 = 0.007. Nonetheless, a significant univariate difference was observed in study skills, where General education students outperformed their peers with special needs (F = 39.190, p = .000). These findings underscore the need for targeted interventions to support the academic skills and well-being of students with special needs, including enhanced study strategies, inclusive infrastructure, and psychosocial support within secondary education settings.

Introduction:

Academic self-efficacy and quality of life are two interrelated psychological constructs that significantly influence students' academic and personal development, particularly in inclusive educational settings. Academic self-efficacy refers to a student's belief in their capacity to organize and execute academic tasks successfully, and it has been strongly linked to improved learning outcomes and resilience (Usher & Pajares, 2008; Honicke & Broadbent, 2016). Quality of life, meanwhile, encompasses individuals' perceptions of their well-being across physical, psychological, social, and environmental dimensions, and it plays a critical role in students' ability to function and thrive in academic environments (Sirgy et al., 2007).

The global movement toward inclusive education has emphasized the need to create equitable environments that support diverse learners, including those with special needs (Florian & Black-Hawkins, 2011). Students with special needs frequently encounter barriers that affect their academic engagement and emotional well-being, necessitating tailored educational and psychological interventions. Research has shown that fostering academic self-efficacy in these students leads to better academic performance and improved adaptive behaviors (Prince & Nurius, (2014).

Students with high self-efficacy demonstrate greater persistence, more effective learning strategies, and increased academic motivation, factors that are essential for overcoming educational challenges (Zimmerman, 2000; Talsma et al., 2018). In inclusive classrooms, supportive practices such as differentiated instruction and social-emotional learning contribute significantly to building self-efficacy among all learners (De Boer et al., 2011).

However, disparities remain. Students with special needs often report lower quality of life compared to their peers, especially in psychological and environmental domains, which may negatively influence their academic self-efficacy (Browne et al., 2020). By contrast, students General education are more likely to benefit from stable support systems and accessible academic structures. These differences highlight the importance of understanding how academic self-efficacy and quality of life intersect across diverse student populations.

While previous research in the Arab context has addressed either academic self-efficacy or quality of life among students with special needs, few studies have examined both constructs simultaneously or conducted comparative analyses between students special needs and General education at the secondary school level. For example, Abu Aisha (2020) found a moderate positive correlation between perceived self-efficacy and quality of life among students with special needs in Gaza, highlighting the psychological and emotional aspects. Similarly, Al-Ghaly (2019) revealed that students with special needs at King Abdulaziz University reported lower scores in physical environment and participation dimensions, indicating institutional barriers. In addition, Assiri (2019) focused on academic self-efficacy differences across gender and academic levels among university students in Al-Baha but did not explore students with special needs. Al-Suhaimi (2021) demonstrated that school quality-of-life indicators such as teacher-student relationships significantly predicted academic self-efficacy among secondary students. Ahmadi and Ahmadi (2020) emphasized the mediating role of school belonging in shaping students' life satisfaction, especially among those with learning difficulties

However, these studies either focused on university populations, addressed each construct separately, or lacked detailed dimensional analysis. None offered an integrated comparative investigation involving inclusive secondary school settings. From an international perspective, Goodall et al. (2022) highlighted systemic and institutional barriers that limit academic engagement among students with special needs in mainstream educational settings. Moreover, Lindsay and McPherson (2012) underscored the importance of support and inclusive classroom practices on both academic self-efficacy and well-being. Shogren et al. (2017) demonstrated how quality-of-life domains, including psychological health and school participation, are significant predictors of academic self-efficacy in students with special needs.

These studies differ from the current one in key aspects: while most focused on special needs (e.g., hearing or learning), younger age groups, or used single-variable designs, this study adopts a multidimensional comparative framework, uses updated scales (Hitches et al., 2022; WHOQOL-BREF), and targets secondary-level students in inclusive Egyptian schools. Thus, it aims to address both theoretical and contextual gaps in the literature by offering empirical insight into how quality of life and self-efficacy intersect across student types.

Study problem:

Although academic self-efficacy and quality of life have been widely studied, limited research has compared these dimensions between special needs and 30 General education students in university settings. The current study was motivated by preliminary findings from an exploratory field investigation involving 30 university students with special needs and 30 General education students. The results indicated that 60% of students with special needs demonstrated low academic self-efficacy, compared to 25% among regular peers. Similarly, 70% of students with special needs reported a low quality of life, especially in psychological and social aspects, while only 40% of General education students expressed similar concerns. Difficulties in social interaction were particularly evident, as 65% of students with special needs reported struggles in forming meaningful relationships within the academic environment.

These findings highlight critical disparities that may affect students' academic engagement and emotional well-being. Goodall et al. (2022) noted that students with special needs often face systemic and institutional challenges that hinder their successful academic integration and long-term satisfaction. Additionally, Ahmadi and Ahmadi (2020) emphasized that students' sense of belonging, and school-related support significantly influence their life satisfaction, reinforcing the role of psychosocial factors in shaping educational experiences.

While existing studies often explore academic self-efficacy and quality of life independently, there remains a lack of integrated comparative analysis between students special needs and general education. Given the increasing emphasis on inclusive education, bridging this gap is essential to designing effective academic and emotional support systems.

Accordingly, this study aims to explore the differences in academic self-efficacy and quality of life between students special needs and general education, using data from the current sample. It also seeks to provide practical recommendations to enhance inclusive practices, support student well-being, and promote academic success for all learners, regardless of their needs or backgrounds.

Research Questions:

1. What is the level of academic self-efficacy among students with special needs?
2. What is the level of academic self-efficacy among General education students?
3. How do students with special needs perceive their quality of life?
4. How do General Education students perceive their quality of life?
5. Are there statistically significant differences between students with special needs and General education students in the overall dimensions of academic self-efficacy and quality of life?
6. Are there statistically significant differences between students with special needs and General education students in each dimension of academic self-efficacy and quality of life?
7. To what extent do the quality-of-life dimensions predict or influence the academic self-efficacy dimensions among students with special needs?
8. To what extent do the quality-of-life dimensions predict or influence the academic self-efficacy dimensions among General Education students?

Significance of Study

Theoretical Significance:

1. The study contributes to educational and psychological literature by examining the relationship between academic self-efficacy and quality of life among secondary school students special needs and general education.
2. It highlights specific differences in the dimensions of academic self-efficacy and quality of life, enriching theoretical understanding within the context of inclusive education.

Practical Significance:

1. The findings provide evidence-based data that can support educational decision-makers in improving learning environments for integration of students in secondary schools.
2. The study identifies areas requiring academic and psychological support, which can assist teachers and specialists in designing appropriate interventions.
3. It offers practical indicators for enhancing school quality of life and boosting academic self-efficacy among all students.

Literature Review:

Academic self-efficacy and quality of life have garnered considerable attention in educational and psychological literature, particularly in relation to students with special needs. Despite this attention, there remains a limited understanding of the intersection between these two variables, especially within inclusive education contexts. The present study aims to bridge this gap by exploring the relationship between academic self-efficacy and quality of life among students with special needs and their peers in General education.

First: Academic Self-Efficacy

The concept of academic self-efficacy, as formulated by Bandura (1997), refers to an individual's belief in their ability to successfully perform academic tasks and overcome challenges. This belief system has a significant impact on students' motivation, effort, and psychological resilience in the face of challenges. Low self-efficacy is associated with feelings of helplessness, avoidance of difficult tasks, and challenges in coping with academic stress (Shogren et al., 2017).

Conversely, enhancing self-efficacy is linked to improved academic performance, greater independence, and better psychological well-being. When students believe in their ability to succeed academically, they become more engaged, confident, and better integrated into the learning environment (Schunk & Pajares, 2002). Studies indicate that students with special needs often exhibit lower levels of academic self-efficacy compared to their typically developing peers (Lynch & Gussel, 1996), which may hinder their academic progress and adaptation within school settings.

Academic self-efficacy and quality of life are not separate constructs; rather, they interact dynamically. Students who perceive their quality of life positively, especially in areas such as emotional support and social inclusion, often demonstrate higher levels of academic self-efficacy. Conversely, high self-efficacy enhances coping mechanisms and psychological stability, which contributes to greater overall life satisfaction.

In a recent study by Bjornson and Perry (2025) conducted on a sample of children with severe developmental disabilities, including intellectual disabilities, autism spectrum disorder, and

cerebral palsy, it was found that school life satisfaction was among the strongest predictors of overall quality of life. The results, based on statistical path analysis, indicated that self-efficacy served as a mediating variable in the relationship between school satisfaction and perceived quality of life. These findings highlight the importance of fostering a sense of competence among this group to strengthen their psychological and social adjustment in educational environments. The study also underscores the critical role of school climate and psychological support in improving the well-being of students with high-support needs.

Applying Bronfenbrenner's ecological systems theory enables a deeper understanding of the contextual factors influencing both academic self-efficacy and quality of life. This theory outlines multiple layers of environmental influence on the student, ranging from the microsystem (e.g., family and school), to the mesosystem (e.g., family-school relationships), to the exosystemic (e.g., educational policies and community services), and finally to the macrosystem (e.g., broader cultural attitudes toward disability). These interrelated environments shape the student's experiences and self-perceptions, particularly among those with special needs. For example, positive peer interactions within the microsystem can enhance self-confidence, while inclusive educational policies within the exosystemic may reduce systemic barriers that hinder student inclusion and academic success.

Within this framework, recent literature suggests that the effectiveness of these systems in enhancing self-efficacy and quality of life depends on their integration and responsiveness to students' needs. A recent study by Perera (2024) found that the lack of coordination between the microsystem and ecosystem, such as poor communication between families and schools or limited implementation of inclusive education policies, was associated with lower levels of motivation and self-efficacy among students, particularly in under-resourced educational settings. In contrast, an integrated, multi-level educational environment that allows students to engage positively with their academic and social surroundings contributes to a sense of psychological safety, enhances adaptability, and improves both educational and personal quality of life, especially for vulnerable groups such as students with special needs.

The Importance of Academic Self-Efficacy for Students with Special Needs

1. Boosting Self-Confidence: High academic self-efficacy enhances students' confidence and encourages active participation in both academic and extracurricular activities (Hampton & Mason, 2003).
2. Improving Academic Outcomes: Belief in one's abilities typically leads to better academic performance and more effective management of academic stress (Shogren et al., 2017).
3. Enhancing Social Interaction: Self-efficacy contributes to improved communication skills with peers and teachers, reducing social isolation and fostering relationships (Klassen, 2002).

Factors Influencing Academic Self-Efficacy in Students with Special Needs

- Social Support: Emotional and academic support from family and teachers plays a critical role in strengthening students' confidence in their abilities (Wentzel, 1998).
- Inclusive Educational Environments: Environments that promote equality and provide individualized resources help to enhance self-efficacy (Schalock et al., 2008).
- Constructive Feedback: Positive guidance from teachers helps build trust and motivates continued academic engagement (Hattie & Timperley, 2007).

Several empirical studies have confirmed these findings. For instance, Klassen (2002) showed that students with learning difficulties who had high self-efficacy achieved better academic and social outcomes. Hampton and Mason (2003) highlighted similar results among students with visual impairments, while Shogren et al. (2017) found that high self-efficacy significantly impacted both quality of life and academic satisfaction in students with mild intellectual disabilities. Among the most effective strategies to enhance self-efficacy are individualized education plans, psychological support, and active learning methods that emphasize achievable goals (Kolb, 2014).

A study by Abu Aisha (2020) reported a significant correlation between perceived academic self-efficacy and quality of life among students with special needs. The findings emphasized that social support and a sense of school belonging were key contributors to improving quality of life in this group, reinforcing the importance of educational environments in shaping students'

perceptions of their abilities and potential. Similarly, a study by Al-Rasheed et al. (2025) showed that interactive educational programs based on the STREAM approach contributed to the development of multiple dimensions of self-efficacy among secondary school students, including academic skills, self-regulation, and perseverance. These results reflect the role of classroom environments and modern teaching methods in building self-confidence.

These two studies help address a gap in previous literature, which often examined either self-efficacy or quality of life in isolation, without exploring the relationship between the two within a comparative framework involving students special needs and general education. They also underscore the importance of considering cultural and educational specificities within local contexts, as the nature of support and educational experiences available differs significantly from those addressed in international studies. Accordingly, the current study aims to fill this gap by providing a comparative analysis of the relationship between academic self-efficacy and quality of life among secondary school students, based on field data from the local educational environment.

Despite growing research interest in academic self-efficacy and quality of life within educational contexts, most studies have examined these two variables separately. Some have focused on factors influencing self-efficacy, such as prior experience or social support, while others have explored quality of life as a reflection of mental health or the quality of school relationships. This segmentation in research limits our ability to understand the reciprocal relationship between the two variables, especially in educational settings that include students from diverse backgrounds and with varying needs.

Second: Quality of Life

Quality of life refers to an individual's overall perception of their physical, psychological, and social well-being. Ahmadi and Ahmadi (2020) indicated that a sense of school belonging serves as an important mediator between school-related factors and overall life satisfaction. Studies consistently show that students with special needs experience lower quality of life, particularly in psychological and social dimensions (Abu Aisha, 2020; Lynch & Gussel, 1996), due to limited support, marginalization, and restricted participation in school life.

The educational environment plays a pivotal role in shaping students' quality of life. Mental health, peer relationships, and resource availability significantly influence students' satisfaction with school and their ability to thrive. High academic self-efficacy is associated with a greater quality of life and goal attainment, whereas low self-efficacy may lead to reduced social interaction and diminished overall well-being (Bandura, 1997).

Aliedan et al. (2023) also emphasized that disability support services in universities, alongside family and peer support, are strong predictors of students' quality of life. Physical self-esteem was identified as a key mediating factor, reflecting the interconnection between psychological factors and educational settings.

The present study is grounded in three core theories that provide an interpretive framework for understanding the relationship between academic self-efficacy and quality of life among secondary school students, both students with special needs and general education:

1. Self-Efficacy Theory – Bandura (1997)

This theory posits that individuals' beliefs about their capabilities are the primary determinants of their behavior, effort, and persistence when facing challenges. Academic self-efficacy is a critical factor in shaping student motivation, particularly for those with special needs who may encounter additional barriers in learning environments. However, applying this theory within Arab contexts presents challenges; recent studies suggest that highly centralized educational systems limit opportunities for experimentation and autonomy, reducing the effectiveness of fostering self-efficacy through Bandura's original model (Fan & Williams, 2010). Comparative studies (Gebauer et al., 2021) have also shown that sources of self-efficacy vary across cultures, necessitating adaptation of the theory and its tools to local contexts to ensure valid and meaningful interpretations.

2. WHOQOL Quality of Life Model – World Health Organization (1995)

This model conceptualizes quality of life as a subjective evaluation of one's physical, psychological, and social well-being, within a specific cultural and contextual setting. It offers a multidimensional framework for assessing students' satisfaction with their school life, social

relationships, and psychological support. However, some literature notes that tools derived from this model are used in healthcare settings and are not always adapted to fit educational environments, which can reduce their explanatory power when applied to school students, especially those facing integration or social interaction challenges.

3. Self-Determination Theory – Deci, et al., (2017)

This theory emphasizes three fundamental psychological needs: autonomy, competence, and relatedness. Fulfillment of these needs is considered essential for intrinsic motivation, personal growth, and quality of life. The theory is particularly relevant for students with special needs, as educational environments that meet these needs can improve academic engagement and self-confidence. It also offers a foundation for understanding the reciprocal relationship between social support and school climate on one hand, and academic self-efficacy and quality of life on the other, within an integrated framework that combines motivation with psychological and social context.

Promoting Academic Self-Efficacy and Quality of Life

1. **Targeted Educational Interventions:** Programs focusing on emotional regulation, social skills development, and academic support can improve both self-efficacy and quality of life. Inclusive environments further encourage the engagement of students with special needs (Bandura, 1997).
2. **Individualized Academic Support:** Tailored academic assistance based on individual student needs can enhance achievement and contribute to overall well-being (Shogren et al., 2017).

Although the literature includes numerous studies on either self-efficacy or quality of life independently, research linking both variables in comparative frameworks involving general education and special needs students remains limited. Most existing studies tend to focus on a single group or variable, making it difficult to understand the integrated interaction between these elements in inclusive educational environments.

The present study seeks to bridge this gap by providing empirical evidence on how quality of life factors influences academic self-efficacy among different student populations. It also aims

to offer practical recommendations for developing inclusive educational settings that support both academic success and psychological well-being.

Reports by Hehir et al. (2019) and the U.S. Department of Education (2021) underscore the importance of inclusive policies, teacher training, and assistive technologies in promoting inclusion and removing barriers for students with special needs. Previous research has also noted that commonly used assessment tools are often generic and fail to capture the complex interactions between social, emotional, and academic variables.

Despite increased interest in inclusive education within policy frameworks, few studies have directly measured the actual impact of inclusion on the psychological and educational outcomes of students with special needs. A field study conducted in Cairo found that inclusive schools continue to face “organizational, cultural, and personal barriers” that hinder the psychological and academic empowerment of these students (Barriers to Including Children with Disabilities in Egyptian Schools, 2021).

Within this context, the current study is among the few that directly assess the impact of school inclusion on academic self-efficacy and quality of life among secondary school students. It contributes to uncovering nuanced differences between general education and special needs students and highlights the need for context-specific, well-designed interventions. The findings are expected to inform the restructuring of educational policies and support systems to ensure more equitable and effective learning experiences for all students.

Methodology and Procedures

Study Design This study adopted a descriptive comparative design to examine differences in academic self-efficacy and quality of life between General education students and students with special needs. The design enabled the investigation of variable relationships across distinct populations. Data were collected using electronic questionnaires distributed via Google Forms, ensuring accessibility and accuracy in data collection.

Study Sample The total sample consisted of 471 secondary school students from the Governorate of Ismailia. Of these, 221 were students with special needs (Students in inclusive

education) enrolled in four inclusive schools, while 250 were general education students selected from mainstream classrooms; data collection was conducted over three consecutive academic years, from 2022 to 2025. This extended time frame ensured diversity in the sample and enhanced the validity and generalizability of the findings across different cohorts.

The students with special needs were enrolled in mainstream public schools that follow an inclusive education model. Each learner had previously been identified by a school-based inclusive education team as requiring educational and social support because of cognitive or developmental challenges. Mental-age assessments, conducted with standardized tools such as the Stanford-Binet Intelligence Scale, formed part of the eligibility criteria for inclusion in the study sample. Among students with mild intellectual disabilities, results indicated that their mental ages assessed using the Stanford-Binet Intelligence Scale ranged between 8 and 12 years, distributed as follows: 8 years (25%, 55 students), 9 years (30%, 66 students), 10 years (20%, 44 students), 11 years (15%, 33 students), and 12 years (10%, 22 students). Despite chronological ages ranging from 15 to 18 years, this mental age assessment allowed for a more tailored understanding of their learning capacities and developmental needs.

In contrast, students with hearing impairments or specific learning disorders may exhibit normal or near-normal cognitive potential. In such cases, learning difficulties often stem from challenges in language processing, sensory access, or specific academic skills rather than reduced intellectual functioning. This discrepancy between cognitive ability and academic achievement is a key characteristic of learning disabilities.

Participant Profile – Students with special needs

The group of students with special needs (n = 221) included 125 students with mild intellectual special needs, 55 students with hearing impairments, and 41 students with specific learning difficulties. These categories were selected based on their prevalence in inclusive educational settings and their relevance to the constructs of academic self-efficacy and quality of life.

These classifications were based on official medical and educational records provided by the Ministry of Education and the inclusion support teams within the participating schools. All

participants were enrolled in inclusive classrooms and received varying levels of academic and social support tailored to their individual needs.

General education students were selected using stratified random sampling from corresponding classes to match the integration group in terms of grade level and gender. The breakdown of the regular student group was as follows:

- First secondary grade: 90 students (36%)
- Second secondary grade: 80 students (32%)
- Third secondary grade: 80 students (32%)

The total sample consisted of 471 secondary school students from the Ismailia Governorate, comprising 250 general education students and 221 students with special needs. The latter group included: 88 students with mild intellectual disabilities,72 students with specific learning disorders, and 61 students with hearing impairments.

These categories reflect the most commonly integrated disability types within inclusive educational settings and were selected based on their relevance to the constructions under study. Regarding gender distribution, the sample maintained a balanced representation across both groups. Among general education students, 132 were females (52.8%) and 118 were males (47.2%). In the group of students with special needs, 106 were females (48.0%) and 115 were males (52.0%). This distribution supported a valid comparative analysis of academic self-efficacy and quality of life across genders, minimizing potential bias.

The inclusion of Students in inclusive education in mainstream public schools represents a significant step toward educational equity. These students face cognitive and social challenges that impact both academic self-efficacy and perceived quality of life. Addressing these challenges through inclusive strategies is critical to providing a supportive learning environment tailored to their individual needs.

Study Instruments

1. Academic Self-Efficacy Scale: The study employed the Academic Self-Efficacy Scale developed by Hitches et al. (2022), which measures students' confidence in achieving academic goals, coping with academic demands, and regulating their academic performance.
2. Quality of Life Scale (WHOQOL-BREF): The short version of the World Health Organization's Quality of Life scales (WHOQOL-BREF, 1996), adapted by Abdul Salam Hussein Al-Khamisi (2022), and was used to assess four domains: physical, psychological, social, and environmental well-being. The scale consists of 26 items rated on a five-point Likert scale.

Instrument Reliability and Validation

To ensure the validity and reliability of the instruments used in this study, both the Academic Self-Efficacy Scale and the WHOQOL-BREF Quality of Life Scale were culturally and linguistically adapted to suit the Egyptian educational context. The face validity of both instruments was confirmed through expert review by (8) in the fields of educational psychology and statistics.

Furthermore, internal consistency was assessed using Cronbach's alpha. The Academic Self-Efficacy Scale achieved a reliability coefficient of 0.85, while the Quality-of-Life Scale yielded a coefficient of 0.88, both indicating high internal consistency and suitability for application within the current study sample. Upon data collection, statistical analysis was conducted using specialized software. Specifically, IBM SPSS Statistics version 29 (2023) was used to perform the following analyses:

- ANOVA: to compare mean differences among subgroups.
- Regression analysis: to explore the predictive relationship between academic self-efficacy and quality of life.

In addition, Mplus version 8.14 (2023) was employed to conduct MANOVA, assessing the combined effects of group membership on multiple dependent variables.

Ethical Considerations the study adhered to ethical standards, including:

- Obtaining informed consent from parents of participating students.
- Providing clear explanations of the research purpose and procedures to participants.
- Ensuring data confidentiality and restricting data use solely to research purposes.

Results and Discussion:

Question 1: What is the level of academic self-efficacy among students with special needs?

This Question aims to measure and evaluate the academic self-efficacy level among students with special needs by examining various components. The summarized results provide insights into how students perceive their academic capabilities across four dimensions:

Table 1

Academic Self-Efficacy among Students with Special Needs – Academic Performance Component

Item	Mean	Std. Deviation	Skewness	Kurtosis
I am preparing for exams.	3.40	0.83	-0.29	0.37
I perform well in exams.	3.33	0.66	-0.46	1.09
I find time for studying.	3.20	0.60	-1.08	1.39
I get the grades I desire.	2.42	1.08	-0.22	-1.26
I manage my time effectively.	2.47	1.27	-0.09	-1.39
I balance my studies and work.	3.35	1.21	-0.39	-0.09
I coordinate my attendance with study time.	3.04	0.84	-0.50	-0.14
I perform well during tough study periods.	3.02	0.89	-0.43	0.11
I receive evaluations on time.	3.49	1.46	-0.76	-0.30
Multiple tests occur in the same week.	3.95	0.97	-0.94	0.94
I completed my assignments.	2.93	0.76	-0.52	1.20

Table (1) clearly illustrates the average scores for most items, suggesting moderate confidence levels in exam preparation, time management, and task completion. However, items like “I get the grades I desire” and “I manage my time effectively” scored lower, indicating challenges in self-evaluation and time regulation. This reflects the need for targeted interventions

in planning and academic resilience strategies. The findings in Table (1) indicate the need for academic planning and self-regulation support.

Table 2

Academic Self-Efficacy among Students with special needs – School Interaction Component

Item	Mean	Std. Deviation	Skewness	Kurtosis
I ask questions in class.	2.16	1.09	0.55	-0.10
I participate in discussions.	2.40	1.23	0.21	-0.69
I speak with the teacher.	2.15	0.97	0.52	-0.23
I make friends at school.	3.31	0.91	-0.65	0.05

Table (2) clearly illustrates that students reported low engagement in classroom interactions, particularly in asking questions or speaking with teachers. These scores may reflect communication anxiety or limited inclusion in classroom dynamics. Building supportive and inclusive class environments could foster more active participation. The findings in Table (2) highlight the importance of enhancing inclusive classroom practices to improve student interaction.

Table 3

Academic Self-Efficacy among Students with special needs – Study Skills Component

Item	Mean	Std. Deviation	Skewness	Kurtosis
I have good reading/writing skills.	3.67	1.02	-1.01	0.80
I search for my tasks.	3.64	0.71	-0.53	0.61
I understand what I read.	3.73	0.71	-1.11	2.24
I follow the required reading.	3.45	1.05	-0.70	0.37

Table (3) shows that this dimension received higher scores, especially in reading comprehension and task tracking. However, there remains room for improvement in consistent academic follow-up. Strengthening metacognitive strategies could help students maintain focus and autonomy in learning.

Table 4

Academic Self-Efficacy among Students with special needs – School Mobility Component

Item	Mean	Std. Deviation	Skewness	Kurtosis
I get help/information from school.	3.09	1.14	-0.36	-0.33
I speak with school staff.	2.44	0.98	0.29	-0.49
I understand school rules.	3.27	1.04	-0.46	-0.05

Table (4) shows that the mobility dimension yielded mixed results. Students reported feeling informed about school systems but showed lower scores in staff communication and understanding of school policies. These findings suggest that while logistical access exists, there may be barriers in relational or communicative support.

Based on Tables (1) to (4), which present the descriptive statistics of academic self-efficacy dimensions among students with special needs, the results reveal a number of academic and behavioral challenges.

In academic performance, students show a moderate level of exam preparedness (mean = 3.6) and exam performance (mean = 3.33), with most responses clustering at level 3. This suggests general competence but also highlights a need for enhanced support to reach higher performance levels. Time management appears notably weaker (mean = 3.20), indicating difficulty organizing tasks, due to cognitive overload or a lack of structured planning strategies.

Regarding interaction in school, students report low engagement in classroom questioning (mean = 2.16) and discussions (mean = 2.40). Communication with teachers is also limited (mean = 2.15), pointing to potential social or emotional barriers. These findings underscore the importance of fostering inclusive environments that promote confidence and open dialogue.

In contrast, study skills emerged as a relative strength. Students scored highly in reading and writing (mean = 3.67), locating assignments (mean = 3.64), and reading comprehension (mean = 3.73). These results may reflect the benefits of academic accommodation or digital learning tools that support information processing.

Mobility in school remains a concern. Although students moderately access help and information (mean = 3.09), interaction with school staff (mean = 2.44) and understanding of school rules (mean = 3.27) are limited. These areas point to the need for clearer communication systems and accessible administrative support.

In summary, while students with special needs demonstrate cognitive potential and solid study habits, they continue to face obstacles in time management, classroom participation, and institutional navigation. These insights highlight the necessity of responsive educational environments that incorporate assistive technologies, structured routines, and targeted social-emotional support to bridge existing gaps.

Question 2: What is the level of academic self-efficacy among General education students?

This Question aims to assess and evaluate the academic self-efficacy of General education students by examining various components. The analysis includes factors such as exam preparation, exam performance, study habits, and time management skills. A table is provided to show the components, items, frequencies, means, standard deviations, variances, skewness, and kurtosis, which together offer a comprehensive picture of the academic self-efficacy levels among General education students.

Table 5

Academic Self-Efficacy among General Education Students – Academic Performance Component

Item	Mean	Std.	Variance	Skewness	Kurtosis
I prepare for exams	3.2	1.15	1.31	-0.36	-0.62
I perform well in exams	3.27	0.95	0.91	-0.64	0.45
I find time for studying	3.07	1.08	1.18	-0.43	-0.42
I get the grades I desire	2.6	1.11	1.23	-0.14	-0.81
I manage my time effectively	2.63	1.15	1.33	0.12	-0.67
I balance my studies and work	3.19	1.13	1.29	-0.47	-0.39
I coordinate my attendance	3.12	1.1	1.22	-0.29	-0.51
I perform well during challenges	2.98	1.15	1.33	-0.44	-0.73
I receive evaluations on time	2.95	1.25	1.56	-0.25	-0.94
Multiple tests in same week	4.09	0.83	0.69	-1.14	2.44
I complete my assignments	2.89	1.01	1.03	-0.13	0.01

Table (5) includes data on students' exam preparation, exam performance, study time, achievement of desired grades, time management, and ability to manage stress during exams. The results reveal moderate levels of academic preparation and performance among General education students, with average scores ranging from 2.60 to 3.27. However, notable challenges are evident in time management and achieving desired grades, suggesting a need for targeted interventions to enhance organizational and performance skills. The findings in Table (5) highlight the necessity of structured academic planning programs that address time use and goal-setting strategies.

Table 6

Academic Self-Efficacy among General education students – School Interaction Component

Item	Mean	Std. Deviation	Variance	Skewness	Kurtosis
I ask questions in class	2.24	1.13	1.28	0.5	-0.66
I participate in class discussions	2.39	1.27	1.61	0.34	-1.1
I speak with the teacher	2.5	1.17	1.36	0.29	-0.78
I make friends at school	2.91	1.17	1.38	0.06	-0.77

Table (6) presents student responses regarding their participation in classroom discussions, asking questions, communication with teachers, and peer relationships. Interaction within the school environment appears limited, with low means for asking questions and classroom participation. These findings point to potential hesitancy or lack of engagement in class, underlining the importance of creating a more inclusive and supportive learning environment. The results in Table (6) underscore the need to promote student voice and build classroom trust to enhance participation.

Table 7

Academic Self-Efficacy among General Education Students – Study Skills Component

Item	Mean	Std. Deviation	Variance	Skewness	Kurtosis
I have good reading/writing skills	3.84	0.91	0.82	-0.84	0.85
I search for my tasks	3.91	0.85	0.73	-1.02	1.74
I can understand what I read	3.91	0.82	0.67	-1.08	2.27
I follow the required reading	3.59	1.03	1.05	-0.94	0.83

Table (7) covers reading and writing abilities, task searching, and reading comprehension. General education students demonstrate strong academic literacy, with high scores across all study skills items. These strengths could be leveraged to support weaker areas like interaction and time management through peer-led initiatives or academic mentoring. The results in Table (7) highlight the potential of using academic strengths to support broader skill development.

Table 8

Academic Self-Efficacy among General Education Students – School Mobility Component

Item	Mean	Std. Deviation	Variance	Skewness	Kurtosis
I get help and information	2.99	1.18	1.38	-0.32	-0.79
I speak with school staff	2.14	1.14	1.29	0.69	-0.48
I understand school rules	3.4	1.11	1.23	-0.53	-0.04

It is clear from Table (8) that students report moderate ability to navigate the school system, though communication with staff is notably weak. Improving administrative communication and student support services may enhance students' sense of belonging and confidence in accessing school resources.

According to Table (5) to Table (8), the results indicate variability in the level of academic self-efficacy among General education students across different dimensions. In terms of academic performance, the overall mean for exam preparation was 3.20 with a standard deviation of 1.15, reflecting a moderate ability to prepare for exams. The results also showed that exam performance had a mean of 3.27 with a standard deviation of 0.95, indicating moderate confidence in their performance. Regarding effective time management, the mean was 2.63 (SD = 1.15), reflecting challenges in organizing academic tasks. Additionally, students demonstrated an average level in balancing study and work (mean = 3.19, SD = 1.13), while achieving the desired grades was one of the most challenging aspects (mean = 2.60, SD = 1.11). Moreover, students reported significant pressure when taking multiple tests in the same week, with a mean of 4.09 and a low standard deviation (0.83), indicating a high level of challenge in this area.

In the domain of interaction within school, the results reveal a marked decline in both academic and social participation. The mean for asking questions in class was 2.24 (SD = 1.13),

while the mean for participating in classroom discussions was 2.39 (SD = 1.27). Additionally, the mean for communicating with teachers was 2.50 (SD = 1.17), reflecting hesitance in direct interactions with instructors. On the social front, the means for forming friendships in school was 2.91 (SD = 1.17), indicating challenges in achieving social integration within the school environment.

Regarding study skills, the findings reveal that General education students exhibit an elevated level of academic self-efficacy in this area. The mean for improving reading and writing skills was 3.84 (SD = 0.91), and the mean for searching for assignments was 3.91 (SD = 0.85), reflecting a strong reliance on self-directed research skills. Moreover, reading comprehension showed a mean of 3.91 (SD = 0.82), suggesting high confidence in understanding academic content.

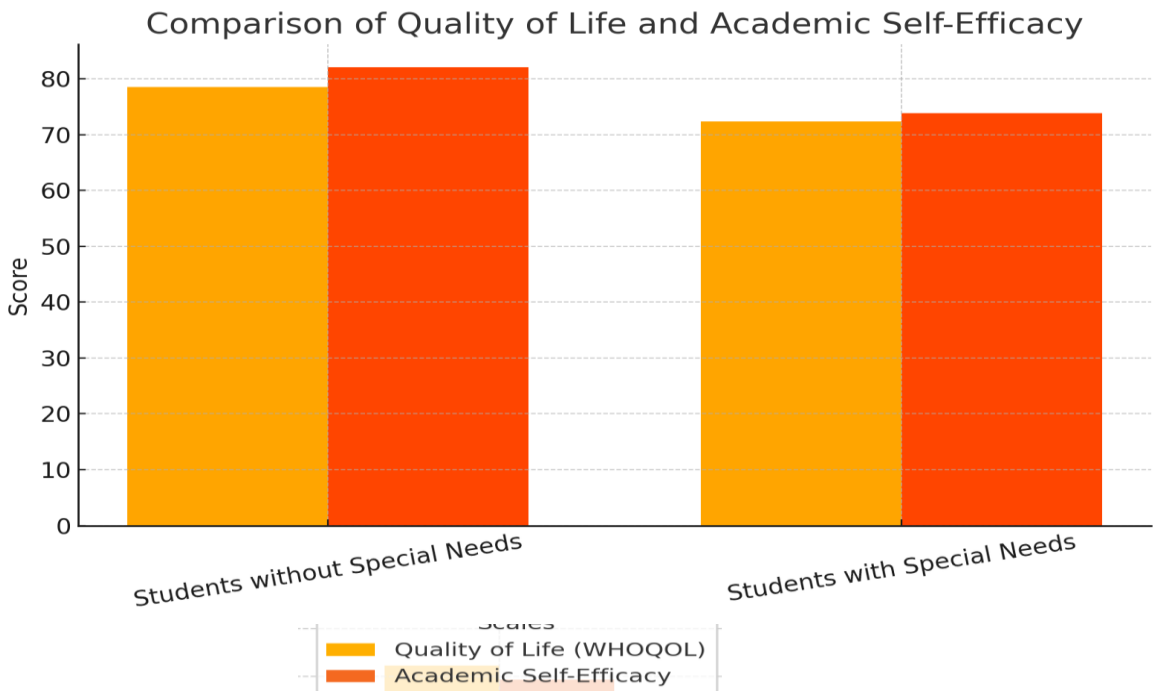
In terms of mobility within the school, students recorded a moderate mean of 3.09 (SD = 1.18) in obtaining help and information from the school. The means for interacting with school staff was 2.14 (SD = 1.14), indicating limited communication with administrative services. Regarding understanding school regulations, the mean was 3.40 (SD = 1.11), reflecting an acceptable level of organizational awareness within the school.

Overall, these results reflect varied levels of academic self-efficacy among General education students. Although they perform well in study skills, they face challenges in time management, school interaction, and classroom participation, highlighting the need for developing supportive strategies to enhance these aspects.

The results showed significant differences between students with special needs and those in general education in both academic self-efficacy and quality of life. Students in general education scored higher on both measures. Figure 1 displays the average scores of the two groups on the WHOQOL-BREF and Academic Self-Efficacy scales.

Figure 1

Mean scores of students special needs and general education on Quality of Life and Academic Self-Efficacy scales.



Question 3: How do students with special needs perceive their quality of life?

This section analyzes the quality of life among students with special needs by examining four key domains: physical health, psychological health, social relationships, and environmental conditions. The descriptive statistics provide insights into the students' self-perceptions and experiences across these dimensions.

Table 9

Descriptive Statistics for Quality-of-Life Variable among Special Needs -Overall Quality of Life & General Health

Item	Mean	Std. Deviation	Skewness	Kurtosis
How would you rate your overall quality of life?	3.78	0.71	-0.6	0.56
How satisfied are you with your health?	4.27	0.93	-1.82	3.9

It is clear from Table (9) that students with special needs reported important levels of satisfaction with their overall quality of life (M = 3.78) and general health (M = 4.27). The negatively skewed distributions suggest that most students rated these aspects positively, reflecting a powerful sense of well-being in this core domain.

Table 10

Descriptive Statistics for the Quality-of-Life Variable among Special Needs -Physical Health

Item	Mean	Std. Deviation	Skewness	Kurtosis
To what extent does your physical condition limit you in performing your work?	2.33	0.99	0.77	0.32
How much support do you need to continue your daily life?	3.16	0.97	-0.21	0.34
Do you feel you have enough capacity and energy to carry out daily tasks?	3.13	1.01	-0.36	0.0
How well are you able to get around?	3.13	1.07	0.02	-0.64
How satisfied are you with your sleep?	3.73	0.89	-0.55	-0.33
How satisfied are you with your ability to work?	4.05	0.8	-0.97	1.05

It is clear from Table (10) that although satisfaction with sleep (M = 3.73), daily assignments (M = 3.87), and work ability (M = 4.05) was notably high, other items such as physical limitations (M = 2.33) and support dependency (M = 3.16) highlight the continuing challenges students face in terms of physical mobility and energy. These results call for supportive interventions to enhance physical functioning and reduce daily barriers.

Table 11

Descriptive Statistics for Quality-of-Life Variable among Special Needs -Psychological Health

Item	Mean	Std. Deviation	Skewness	Kurtosis
How much do you enjoy life?	2.95	0.88	0.11	0.49
To what extent do you feel your life has meaning?	3.09	1.12	-0.26	-0.59
How easily can you concentrate on things?	3.25	0.72	0.17	1.5
Are you satisfied with your bodily appearance?	3.67	0.96	-0.44	-0.18
How satisfied are you with yourself?	4.42	0.71	-1.43	2.69
How often have you felt sad, depressed, or anxious?	3.44	0.95	-0.46	0.05

It is clear from Table (11) that while students showed strong self-esteem (M = 4.42) and satisfaction with bodily appearance (M = 3.67), lower means for life enjoyment (M = 2.95) and perceived life meaning (M = 3.09) reveal emotional vulnerabilities. Mental concentration and emotional balance varied, indicating a need for psychological and motivational support.

Table 12

Descriptive Statistics for the Quality-of-Life Variable among Special Needs - Social Relationships

Item	Mean	Std. Deviation	Skewness	Kurtosis
How satisfied are you with your personal relationships?	4.09	0.84	-0.73	0.05
How satisfied are you with your sex life?	3.8	0.86	-0.12	-0.82
How satisfied are you with the support you get from friends?	4.15	0.62	-0.57	1.57

As shown in Table (12), the social dimension received some of the highest ratings, particularly in support from friends (M = 4.15) and personal relationships (M = 4.09), indicating strong social inclusion. However, variability in satisfaction with sexual life (M = 3.80) suggests that intimacy and emotional connection may be an overlooked aspect needing greater attention.

Table 13

Descriptive Statistics for the Quality-of-Life Variable among Special Needs -Environment

Item	Mean	Std. Deviation	Skewness	Kurtosis
How safe do you feel in your daily life?	3.24	0.94	-0.62	0.51
How would you rate the health services in your environment?	3.45	0.83	-0.44	0.32
How capable are you of meeting your daily needs?	3.31	0.95	-0.27	0.36
How available is the information you need for daily life?	3.2	0.7	-0.3	0.95
To what extent do you have opportunities for leisure and relaxation?	2.95	0.75	-0.43	0.05
How satisfied are you with your living conditions?	4.24	0.83	-1.04	0.67
How satisfied are you with the health and social care you receive?	3.82	0.9	-0.7	-0.13
How satisfied are you with your opportunities for leisure/travel?	3.84	0.83	-0.66	0.14

As shown in Table (13), environmental aspects such as living conditions (M = 4.24) and access to social care (M = 3.82) were rated favorably. Yet, lower scores in leisure opportunities (M = 2.95), access to information (M = 3.20), and daily safety (M = 3.24) point to inequalities in accessibility and quality of life resources. These findings emphasize the importance of inclusive urban design and tailored services.

As shown in Table (9) to (13), the General Health dimension revealed that the overall quality of life mean score was 3.78 (SD = 0.71), indicating stable and positive evaluations among participants. The majority (61.8%) rated their quality of life at level 3, while 21.8% gave a lower rating of 2. For satisfaction with health, the mean score was 4.27 (SD = 0.93), reflecting greater variability: 47.3% of participants reported being “very satisfied” (rating of 1), whereas 41.8% reported a lower satisfaction level of 2. These findings suggest a good perceived quality of life among students with special needs, with some individual and environmental factors influencing their health evaluations.

Emerging research emphasizes that general health, encompassing both physical and psychological dimensions, along with access to adequate healthcare, is a core determinant of quality of life among individuals with special needs. Silván-Ferrero et al. (2020) highlighted the significant influence of psychological variables such as internalized stigma and personal resilience on the mental health aspects of life satisfaction. Their findings underscore the essential role of psychological support in addressing the emotional challenges faced by individuals with physical impairments.

Similarly, Akca et al. (2021) found that individuals’ perceptions of medical care, along with the accessibility and quality of healthcare services, are key factors influencing overall well-being. Limited access to appropriate care was associated with reduced life satisfaction and a diminished sense of security. The impact of global crises on this vulnerable population was further demonstrated by Asdaq et al. (2024), who reported a sharp increase in anxiety and depressive symptoms during the COVID-19 pandemic due to disruptions in integrated healthcare services. These findings were echoed by Kim et al. (2024), who noted a correlation between deteriorating physical and psychological health during the pandemic and lower quality of life among individuals with special needs.

On a more optimistic note, Alyahya et al. (2023) provided evidence that emotional and social support networks play a critical role in improving the well-being of university students with special needs. Their study revealed that such support mechanisms reduce psychological stress and foster self-confidence, enhancing quality of life.

In summary, these findings collectively indicate that enhancing quality of life for individuals with special needs requires a multifaceted approach that prioritizes physical and mental health while ensuring equitable access to responsive healthcare services. Policymakers and institutions should aim to implement integrated strategies that combine medical care with psychological and social support to promote sustainable well-being within this population.

Question 4: How do General Education students perceive their quality of life?

About Question (4), which aims to assess the quality-of-life level among General education students, descriptive statistics were conducted to examine their perceived well-being across the dimensions of the WHOQOL-BREF scale. These dimensions include physical health, psychological health, social relationships, and environmental conditions. The descriptive results are summarized in Tables (14) to (18).

Table 14

Descriptive Statistics for the Quality-of-Life Variable among General education students - Overall Quality of Life & General Health

Item	Mean	Std. Deviation	Skewness	Kurtosis
How would you rate your overall quality of life?	3.5	0.7	-0.1	3.5
How satisfied are you with your health?	4.2	1.1	1.9	4.2

As shown in Table (14), the results reflect moderate to high satisfaction with the general quality of life and overall health among General education students.

Table 15

Descriptive Statistics for the Quality-of-Life Variable among General Education Students - Physical Health

Item	Mean	Std. Deviation	Skewness	Kurtosis
To what extent does your physical condition limit you in performing your work?	2.3	1.0	-0.9	2.3
How much support do you need to continue your daily life?	3.2	0.9	0.1	3.2
Do you feel you have enough capacity and energy to carry out daily tasks?	3.2	1.2	0.0	3.2
How well are you able to get around?	2.9	1.2	-0.7	2.9
How satisfied are you with your sleep?	3.0	1.9	-1.5	3.0
How satisfied are you with your daily ASSIGMENTS?	3.4	1.9	-1.2	3.4
How satisfied are you with your ability to work?	3.6	1.6	-1.4	3.6

As shown in Table (15), the results indicate moderate levels of physical health satisfaction, with challenges in work capacity and mobility. While satisfaction with sleep and ability to carry out tasks shows relative strength, items such as physical limitations and dependency on support remain areas needing intervention.

Table 16

Descriptive Statistics for Quality-of-Life Variable among General Education Students - Psychological Health

Item	Mean	Std. Deviation	Skewness	Kurtosis
How much do you enjoy life?	2.9	0.9	0.0	2.9
To what extent do you feel your life has meaning?	3.1	1.1	-0.4	3.1
How easily can you concentrate on things?	3.3	0.9	0.2	3.3
Are you satisfied with your bodily appearance?	3.4	1.2	-0.3	3.4
How satisfied are you with yourself?	3.9	1.6	-0.6	3.9
How often have you felt sad, depressed, or anxious?	3.8	1.0	0.5	3.8

As shown in Table (16), students reported positive psychological well-being, particularly in self-perception and concentration. However, feelings of sadness or anxiety were notably present and may require targeted emotional support.

Table 17

Descriptive Statistics for the Quality-of-Life Variable among General Education Students - Social Relationships

Item	Mean	Std. Deviation	Skewness	Kurtosis
How satisfied are you with your personal relationships?	3.6	1.7	-1.2	3.6
How satisfied are you with your sex life?	3.1	2.1	-1.6	3.1
How satisfied are you with the support you get from friends?	3.6	1.8	-1.1	3.6

According to Table (17), social relationships appear strong, with satisfactory levels of personal and social support. However, satisfaction with sexual life showed more variability among responses.

Table 18

Descriptive Statistics for the Quality-of-Life Variable among General Education Students - Environment

Item	Mean	Std. Deviation	Skewness	Kurtosis
How safe do you feel in your daily life?	3.2	1.2	-0.4	3.2
How would you rate the health services in your environment?	3.3	0.9	0.2	3.3
How capable are you of meeting your daily needs?	3.3	1.0	0.2	3.3
How available is the information you need for daily life?	3.3	0.8	0.4	3.3
To what extent do you have opportunities for leisure and relaxation?	2.9	1.0	-0.4	2.9
How satisfied are you with your living conditions?	3.9	1.7	-0.4	3.9
How satisfied are you with the health and social care you receive?	3.2	1.5	-1.4	3.2
How satisfied are you with your opportunities for leisure/travel?	3.2	1.6	-1.4	3.2

As shown in Table (18), environmental quality indicators such as access to information and living conditions were rated positively. Nevertheless, concerns remain regarding leisure opportunities and satisfaction with health and social care services.

Comprehensive Summary of Table (14) TO (18) the statistical findings presented in Table (9) highlight the multidimensional nature of quality of life among General education students. These results reflect a range of experiences shaped by physical health, psychological well-being, social relationships, and environmental factors.

The overall quality of life yielded a mean of 3.5 (SD = 0.7), indicating moderate satisfaction levels and a concentrated distribution of responses. The near-zero skewness (–0.1) suggests a balanced perception, with no strong inclination toward extreme positive or negative ratings.

Regarding general health satisfaction, students reported a high amount of 4.2, demonstrating strong self-reported wellness. The significant negative skewness (–1.5) implies that most students perceived their health as good to excellent.

On the other hand, perceived health limitations on work performance received a mean of 2.3, reflecting that while most students felt capable, a noticeable subgroup reported impairments. The mean score for capacity to conduct daily tasks was 3.2, and mobility was slightly lower at 2.9, indicating that some students experience physical challenges.

Within the psychological dimension, scores were mixed. Enjoyment of life recorded a modest mean of 2.9, and sense of meaning reached 3.1, both pointing to moderate emotional fulfillment. Notably, mental concentration scored 3.3, and body image satisfaction reached 3.4, suggesting better psychological functioning in these areas. Self-esteem was high at 3.9, whereas negative emotions (e.g., sadness, anxiety) averaged 3.8, indicating that most students rarely experienced such distress, though variation exists.

In terms of social well-being, satisfaction with personal relationships and friend support both averaged 3.6, reflecting solid social integration. However, satisfaction with emotional life, particularly sexual life, was lower at 3.1, revealing a potential area of dissatisfaction.

Finally, the environmental dimension yielded moderate ratings. Feeling safe averaged 3.2, and satisfaction with health services stood at 3.3. These scores show that while students are not highly dissatisfied, there is room for improvement in their living and support conditions.

In conclusion, the findings suggest that while General education students report moderate to high satisfaction in areas such as health and social relationships, there is noticeable room for

improvement in psychological resilience and environmental support. Targeted interventions, particularly those promoting mental health and emotional well-being, could significantly enhance students' overall quality of life.

Question (5): Are there statistically significant differences between students with special needs and General education students in the overall dimensions of academic self-efficacy and quality of life?

To address Question (5), a multivariate analysis of variance (MANOVA) was conducted to determine whether there were statistically significant differences between students with special needs and their regular peers across the combined dimensions of academic self-efficacy and quality of life. This approach allows for the simultaneous comparison of multiple dependent variables to assess the overall group effect. The results are presented in Table (19).

Table 19

Multivariate Tests of the Effect of Student Type (Special Needs vs. Regular) on Academic Self-Efficacy and Quality of Life Dimensions

Multivariate Test	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Wilks' Lambda	0.993	0.156	9	210	0.998	0.007
Pillai's Trace	0.007	0.156	9	210	0.998	0.007
Hotelling's Trace	0.007	0.156	9	210	0.998	0.007
Roy's Largest Root	0.007	0.156	9	210	0.998	0.007

As shown in Table (19) The multivariate analysis of variance (MANOVA) revealed no statistically significant differences between students with special needs and their regular peers across the combined dimensions of academic self-efficacy and quality of life, Wilks' Lambda = 0.993, $F(9, 210) = 0.156$, $p = 0.998$, partial $\eta^2 = 0.007$. These results suggest that the type of student (special needs vs. regular) had no significant impact on the studied variables, indicating a high level of similarity between the two groups in terms of their academic confidence and perceived quality of life.

This outcome aligns with the findings of Schunk and Zimmerman (1997), who emphasized that students' perceptions of academic self-efficacy are shaped more by external educational

factors and the availability of academic support than by physical limitations or innate cognitive abilities. Similarly, Klassen and Usher (2010) found that once environmental and motivational factors are controlled, the differences in academic self-efficacy between students with special needs and general education tend to diminish. This reinforces the view that tailored educational support and positive learning environments may be more influential in shaping students' academic confidence than the presence or absence of a disability.

Kim and Lee (2016) further support this by demonstrating that students with special needs often adopt compensatory strategies that allow them to perform at levels comparable to their peers. These findings suggest the need for adaptive support structures and flexible instructional environments to promote independence, especially in study habits and academic performance.

The multivariate analysis of variance (MANOVA) revealed no statistically significant differences between students with special needs and their regular peers across the combined dimensions of academic self-efficacy and quality of life, Wilks' Lambda = 0.993, F (9, 210) = 0.156, p = 0.998, partial $\eta^2 = 0.007$. These results suggest that the type of student (special needs vs. regular) had no significant impact on the studied variables, indicating a high level of similarity between the two groups in terms of their academic confidence and perceived quality of life.

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Question (6): Are there statistically significant differences between students with special needs and General education students in each dimension of academic self-efficacy and quality of life?

To fulfill Question (6), a series of univariate analyses of variance (ANOVA) were performed to examine whether statistically significant differences exist between students with special needs and General education students in each dimension of academic self-efficacy and quality of life. This analysis provides a more detailed view of specific areas where disparities may occur between the two groups. The results are summarized in Table (20).

Table 20

Tests of Between-Subjects Effects: Differences between Student Groups in Academic Self-Efficacy and Quality of Life Dimensions

Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Academic Performance (K1)	2.146	1	2.146	0.053	0.817	0.000
Study Skills (K2)	0.701	1	0.701	0.086	0.769	0.000
School Engagement (K3)	0.640	1	0.640	0.074	0.786	0.000
School Mobility (K4)	0.458	1	0.458	0.077	0.782	0.000
Psychological Health (Q1)	0.364	1	0.364	0.214	0.644	0.001
Physical Health (Q2)	0.018	1	0.018	0.002	0.964	0.000
Social Relationships (Q3)	3.687	1	3.687	0.477	0.491	0.002
School Environment (Q5)	0.994	1	0.994	0.308	0.579	0.001
General Health (Q6)	1.607	1	1.607	0.134	0.715	0.001

As shown in Table (20) The univariate results of the MANOVA test indicate no statistically significant differences between students special needs and General education in most academic self-efficacy and quality-of-life dimensions. However, a statistically significant difference was observed in study skills ($t = 39.190$, $p = .000$), with General education students scoring higher. This indicates that students with special needs face specific challenges in organizing their studies and applying effective learning strategies, aligning with findings by Hitches et al. (2020).

On the other hand, no significant differences were found in school interaction, mobility, or other quality-of-life domains, suggesting comparable levels of participation and experience

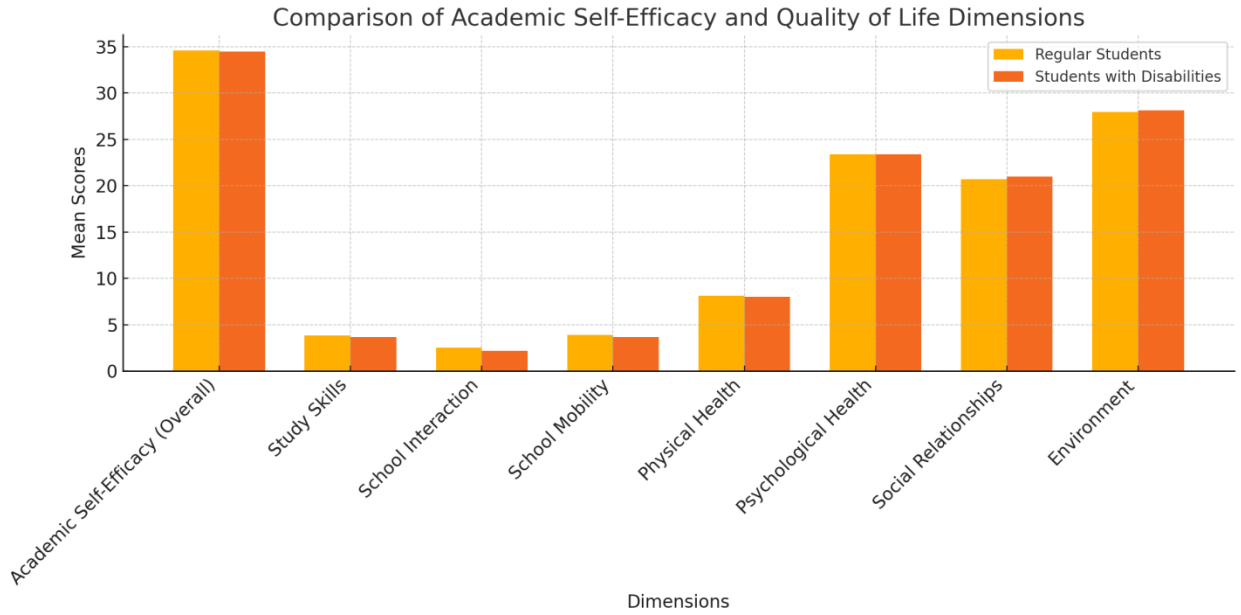
between the two groups. Notably, students with special needs reported higher levels of support in social relationships, consistent with Sultan et al. (2016), which may reflect their reliance on strong social support networks.

These findings are consistent with WHO (2021), which emphasizes the importance of health-related social and environmental factors in quality of life. General education students scored higher in physical health, psychological health, and environment dimensions, like the findings by Said & Alhumaid (2024) and Brown et al. (2020). This underscores the need for improved environments and targeted support for students with special needs (Al Shaer et al., 2024; Omodaka & Sato, 2023; Madhesh, 2023; O'Shea et al., 2023).

In summary, while overall academic self-efficacy appears similar between groups, students with special needs face specific challenges, especially in study skills and access to resources, calling for structured interventions, inclusive infrastructure, and strengthened academic advising to bridge these gaps (Shogren et al., 2017; Hitches et al., 2022; Loreman et al., 2005).

Figure 2

Summary of Differences in Academic Self-Efficacy and Quality of Life Dimensions between Students with special needs and General education students



This figure visually summarizes the mean scores of both groups, students with special needs and General education students, across the combined dimensions of academic self-efficacy (Academic Performance, School Interaction, Study Skills, School Mobility) and quality of life (Physical Health, Psychological Health, Social Relationships, Environment, and General Health).

While most dimensions show comparable mean values between the two groups, a notable difference was observed in Study Skills, where General education students scored significantly higher, indicating stronger organization and learning strategies. Conversely, students with special needs reported slightly higher scores in Social Relationships, reflecting their reliance on support networks.

These visual trends align with the MANOVA results and reinforce the conclusion that, although overall academic self-efficacy is statistically similar between the two groups, targeted support is needed in areas like study skills and environmental access to ensure equitable learning outcomes and well-being.

Question (7): To what extent do the quality-of-life dimensions predict or influence the academic self-efficacy dimensions among students with special needs?

To address Question (7), multiple regression analyses were conducted to examine the predictive influence of quality-of-life dimensions, namely physical health, psychological well-being, social relationships, and school environment, on the dimensions of academic self-efficacy among students with special needs. This analysis aims to identify which aspects of perceived quality of life most significantly contribute to students' academic confidence and functioning. The findings are presented in Table (21).

Table 21

Statistical Analysis of the Impact of Quality-of-Life Dimensions on Academic Self-Efficacy Dimensions among Students with Special Needs

Source of Variance	Dependent Variable	(Type III Sum of Squares)	(df)	(Mean Square)	F-value	(Sig.)
Corrected Model	Academic Performance	5021.957	5	1004.391	57.662	.000
	School Interaction	455.527	5	91.105	14.811	.000
	Study Skills	745.099	5	149.020	27.733	.000
	School Mobility	336.981	5	67.396	14.989	.000
Physical Health	Academic Performance	485.728	1	485.728	27.886	.000
	School Interaction	71.097	1	71.097	11.558	.001
	Study Skills	84.003	1	84.003	15.633	.000
	School Mobility	3.650	1	3.650	.812	.369
Psychological Health	Academic Performance	953.837	1	953.837	54.760	.000
	School Interaction	19.738	1	19.738	3.209	.075
	Study Skills	105.955	1	105.955	19.719	.000
	School Mobility	35.362	1	35.362	7.865	.006
Social Relationships	Academic Performance	3.759	1	3.759	.216	.643
	School Interaction	1.597	1	1.597	.260	.611
	Study Skills	85.981	1	85.981	16.002	.000
	School Mobility	142.065	1	142.065	31.596	.000
Environment	Academic Performance	537.489	1	537.489	30.857	.000
	School Interaction	104.767	1	104.767	17.031	.000
	Study Skills	21.863	1	21.863	4.069	.045
	School Mobility	2.252	1	2.252	.501	.480
General Health	Academic Performance	620.421	1	620.421	35.619	.000
	School Interaction	89.207	1	89.207	14.503	.001
	Study Skills	97.214	1	97.214	18.091	.000
	School Mobility	29.567	1	29.567	6.573	.011

Through Table (21), Statistical analysis results indicate that various dimensions of quality of life have diverse impacts on the dimensions of academic self-efficacy among students with special needs, showing that physical health, psychological health, social relationships, and the environment play a significant role in improving academic performance, school interaction, study

skills, and mobility within the campus. This reflects the importance of enhancing quality of life to improve the overall learning experience for this group.

In terms of academic performance, physical health had a significant impact on the academic performance of students with special needs, with an F value of 27.886 ($p = .000$), indicating that good physical health helps these students better cope with academic challenges. Psychological health also had a significant impact, with an F value of 54.760 ($p = .000$), which suggests that students with stable psychological conditions exhibit more outstanding academic performance. Additionally, the environment played an influential role with an F value of 30.857 ($p = .000$), reflecting the importance of establishing supportive educational environments that meet the needs of students with special needs. In contrast, social relationships did not have a significant impact on academic performance, as evidenced by an F value of 0.216 ($p = .643$), suggesting that academic performance might be less influenced by social ties in this group.

Regarding school interaction, physical health played a fundamental role in enhancing interaction within the school, with an F value of 11.558 ($p = .001$). This indicates that students with special needs who enjoy good physical health are more engaged in school activities. Moreover, the environment was also influential, with an F value of 17.031 ($p = .000$), which shows that students studying in supportive educational environments interact more actively with their peers and teachers. However, neither psychological health nor social relationships had a significant effect on this dimension, as their p-values were greater than 0.05.

For study skills, psychological health had a significant impact, with an F value of 19.719 ($p = .000$). This reflects that students with special needs who maintain good psychological health are more capable of developing effective study strategies and organizing their time. Additionally, social relationships demonstrated a positive effect with an F value of 16.002 ($p = .000$), indicating that social support enhances the ability of these students to improve their academic performance. Finally, the environment played a notable role with an F value of 4.069 ($p = .045$), underscoring the importance of an appropriate educational environment in improving study skills.

Regarding school mobility, in terms of mobility within the school, psychological health had a significant effect, with an F value of 7.865 ($p = .006$). This indicates that students with special needs who enjoy stable psychological health are more capable of moving freely within the school

and participating in its activities. Moreover, social relationships showed a clear impact, with an F value of 31.596 (p = .000), reflecting that having a supportive social network enhances students' ability to move confidently. In contrast, physical health and the environment did not show a statistically significant effect on this dimension, as their p-values were greater than 0.05.

These results highlight the importance of the various dimensions of quality of life, especially physical health, psychological health, and the environment, in supporting the academic self-efficacy of students with special needs . Therefore, it is recommended to develop programs and services that focus on improving overall and psychological health, establishing inclusive educational environments, and enhancing social relationships to support this group and enable them to achieve their academic potential.

The results of this study underscore the critical importance of enhancing both academic and social support systems for students with special needs . Improvements in various aspects of their quality of life are strongly linked to higher levels of academic self-efficacy. Wehmeyer and Schwartz (1997) found that students with special needs who maintain good physical health demonstrate improved academic performance and social engagement, which in turn supports better concentration and persistence in learning tasks. Likewise, Feldman and Dreher (2012) highlighted that physical well-being contributes significantly to students' academic readiness and goal attainment.

In the realm of psychological well-being, findings by Shogren et al. (2017) reveal that fostering emotional stability and self-regulation skills enhances students' sense of self-efficacy and their capacity to manage academic demands. This aligns with Bandura's (1997) assertion that self-efficacy influences students' ability to adopt effective learning strategies and persevere through academic challenges.

Social support also emerged as a vital factor in academic development. Linnenbrink and Pintrich (2003) affirmed that constructive peer and teacher relationships help students build academic skills more effectively. These insights resonate with Deci and Ryan's (2000) self-determination theory, which emphasizes that social connectedness serves as a key motivator in promoting independence, resilience, and self-efficacy among students with special needs.

Moreover, the learning environment itself plays a foundational role in strengthening academic self-belief. Schunk and Pajares (2002) argued that inclusive and responsive educational settings enhance students' confidence in their academic capabilities and their ability to navigate institutional demands. Similarly, Tinto (2012) emphasized that environments promoting active participation and meaningful interaction contribute positively to academic achievement and integration.

In conclusion, the multiple domains of quality of life, including physical health, psychological well-being, social engagement, and supportive environments, are deeply interconnected with the academic self-efficacy of students with special needs. Addressing these dimensions through targeted interventions is likely to result in improved academic performance, increased school engagement, stronger study habits, and better adaptability within educational settings.

Question (8): To what extent do the quality-of-life dimensions predict or influence the academic self-efficacy dimensions among General Education students?

To address Question (8), multiple regression analyses were performed to investigate the extent to which quality-of-life dimensions, specifically physical health, psychological well-being, social relationships, and school environment, predict the various dimensions of academic self-efficacy among General education students. This Question seeks to clarify how perceived well-being influences students' academic confidence in inclusive educational settings. The results are detailed in Table (22).

Table 22

Statistical Analysis of the Impact of Quality-of-Life Dimensions on Academic Self-Efficacy Dimensions among General Education students

Source of Variance	Dependent Variable	(Type III Sum of Squares)	(df)	(Mean Square)	F-value	(Sig.)
Corrected Model	Academic Performance	5021.957	5	1004.391	57.662	.000
	School Interaction	455.527	5	91.105	14.811	.000
	Study Skills	745.099	5	149.020	27.733	.000
	School Mobility	336.981	5	67.396	14.989	.000
Physical Health	Academic Performance	485.728	1	485.728	27.886	.000
	School Interaction	71.097	1	71.097	11.558	.001
	Study Skills	84.003	1	84.003	15.633	.000
	School Mobility	3.650	1	3.650	0.812	.369
Psychological Health	Academic Performance	953.837	1	953.837	54.760	.000
	School Interaction	19.738	1	19.738	3.209	.075
	Study Skills	105.955	1	105.955	19.719	.000
	School Mobility	35.362	1	35.362	7.865	.006
Social Relationships	Academic Performance	3.759	1	3.759	0.216	.643
	School Interaction	1.597	1	1.597	0.260	.611
	Study Skills	85.981	1	85.981	16.002	.000
	School Mobility	142.065	1	142.065	31.596	.000
Environment	Academic Performance	537.489	1	537.489	30.857	.000
	School Interaction	104.767	1	104.767	17.031	.000
	Study Skills	21.863	1	21.863	4.069	.045
	School Mobility	2.252	1	2.252	0.501	.480
General Health	Academic Performance	620.421	1	620.421	35.619	.000
	School Interaction	89.207	1	89.207	14.503	.001
	Study Skills	97.214	1	97.214	18.091	.000
	School Mobility	29.567	1	29.567	6.573	.011

As shown in Table (22), this analysis aims to explore the impact of quality-of-life dimensions on the dimensions of academic self-efficacy among General education students. The different dimensions of quality of life affect the dimensions of academic self-efficacy to varying degrees, as evidenced by the F-values and significance levels (Sig.). The results indicate that physical health has a statistically significant effect on academic performance ($F = 27.886$, $p < .001$), school

interaction (F = 11.558, p = .001), and study skills (F = 15.633, p < .001), while it does not have a statistically significant effect on school mobility (F = 0.812, p = .369). This indicates that physical health enhances academic and social aspects, but it is not a primary factor in students' mobility within the university environment.

As for psychological health, it had a strong effect on academic performance (F = 54.760, p < .001) and study skills (F = 19.719, p < .001), which indicates that students with better psychological health have higher confidence in their academic abilities. However, the effect of psychological health on school interaction was not statistically significant (F = 3.209, p = .075), which may reflect the presence of other factors influencing university participation.

Regarding social relationships, they showed a significant effect on study skills (F = 16.002, p < .001) and school mobility (F = 31.596, p < .001), while not having a statistically significant effect on academic performance or school interaction. This may indicate that strong social relationships help students develop effective study strategies as well as facilitate their movement within the educational environment.

Concerning the university environment, it significantly affected academic performance (F = 30.857, p < .001) and school interaction (F = 17.031, p < .001), which underscores the importance of establishing a supportive educational environment to enhance students' self-confidence and participation in university activities. However, the effect of the environment on school mobility was not statistically significant (F = 0.501, p = .480), suggesting that mobility may depend on other factors such as infrastructure or institutional support.

Finally, general health demonstrated a statistically significant effect on all dimensions of academic self-efficacy, including academic performance (F = 35.619, p < .001), school interaction (F = 14.503, p < .001), study skills (F = 18.091, p < .001), and school mobility (F = 6.573, p = .011). This result reflects the vital role that general health plays in enhancing students' self-confidence across various academic and social aspects.

Based on these results, it can be stated that the various dimensions of quality of life contribute to enhancing the dimensions of academic self-efficacy among General education students, with the strength of this effect varying according to the specific academic dimension studied. Therefore, it is necessary to develop educational and environmental strategies that support the psychological,

physical, and social health of students, thereby improving their academic performance and increasing their confidence in their abilities.

Recent empirical research reinforces the connection between quality of life and academic self-efficacy across diverse educational settings. For instance, Aydin and Aydin (2024) found that all domains of quality of life, physical, psychological, social, and environmental, positively correlate with students' confidence in their academic abilities. Their findings suggest that students who report higher well-being across these dimensions tend to perform better academically, with sleep quality emerging as a particularly strong predictor of self-efficacy.

Similarly, Song and Hu (2024) emphasized the critical influence of psychological well-being, particularly during the transitional period of the first academic year. Their study indicated that improved emotional and mental health contributes directly to enhanced self-efficacy, which subsequently promotes better academic outcomes. These findings highlight the importance of psychological support systems in higher education institutions.

In terms of social connection, Zhang and Qian (2024) highlighted that supportive interpersonal relationships significantly bolster academic self-efficacy. Their research showed that students with robust social networks are more engaged in academic activities and feel more capable of overcoming academic obstacles, suggesting that social inclusion is a key determinant of academic confidence.

The university environment itself also plays a pivotal role in shaping self-efficacy. Cheng and Sin (2022) demonstrated that students who perceive their academic environment as inclusive and encouraging tend to show stronger academic performance and greater engagement. In contrast, those who face environmental barriers or lack access to institutional support often experience a decline in academic confidence and reduced use of available resources.

Moreover, Su et al. (2021) explored the challenges faced by international students, particularly related to cultural adaptation. Their study revealed that acculturative stress can negatively impact students' academic experience, lowering both their perceived quality of life and their self-efficacy. These results emphasize the need for tailored psychological and social support services to help students from diverse backgrounds integrate more smoothly into academic life.

Study Limitations:

The study employed a large and representative sample, comprising 471 secondary school students. This included 221 students with special needs and 250 regular students, which enhances the statistical reliability and generalizability of the findings.

The group of students with special needs included individuals diagnosed with mild intellectual special needs, hearing impairments, and specific learning disorders. These categories were selected due to their prevalence in inclusive educational settings and their relevance to the constructs of academic self-efficacy and quality of life.

While the study presents significant findings based on validated, reliable instruments, several contextual considerations may guide future research. The sample, drawn from the Ismailia Governorate, represents a specific educational context, and expanding the geographic scope could enhance generalizability.

Although self-report instruments are widely accepted in psychological and educational research, this study ensured measurement accuracy through cultural adaptation, expert validation, and high internal consistency ($\alpha = .80$ and .90). Both instruments were standardized and previously validated in similar contexts, allowing meaningful comparisons between students special needs and general education.

Future research could benefit from incorporating qualitative methods or multi-source data, and from further exploring differences across types and severities of special needs. These future directions align with the study's commitment to enhancing inclusive practices and promoting equity in educational outcomes.

Conclusions and Recommendations

Conclusions

1. The study found no statistically significant differences in academic self-efficacy between students with special needs and their regular peers. This suggests that inclusive educational

environments and appropriate academic support can effectively mitigate the impact of disability on academic confidence.

2. However, General education students demonstrated significantly higher overall quality of life, particularly in physical, psychological, and environmental domains. In contrast, students with special needs showed greater dependence on social and institutional support systems.
3. Quality-of-life dimensions, especially physical health, psychological well-being, and environmental conditions, were found to significantly predict academic self-efficacy. This emphasizes the reciprocal relationship between personal well-being and academic functioning.

Recommendations

1. **Establishing Comprehensive Support Programs**
    - Provide regular psychological counseling and resilience training tailored to the needs of students with special needs.
    - Promote campus-wide health initiatives focusing on physical activity, sleep hygiene, and emotional wellness.
2. **Enhancing Inclusive Learning Environments**
    - Ensure that school infrastructure is fully accessible, including ramps, elevators, and navigational aids.
    - Offer academic content in multiple formats (text, audio, visual) to support diverse learning styles.
3. **Strengthening Academic and Social Support Systems**
    - Develop peer mentoring programs that encourage collaboration and understanding among students.
    - Provide professional development for teachers on inclusive pedagogy and effective communication.
4. **Integrating Self-Efficacy Skills into the Curriculum**
    - Incorporate modules on time management, self-regulation, and active learning into school curricula.

- Use formative assessment and positive reinforcement to build students' academic confidence.

5. **Implementing Ongoing Evaluation and Family Engagement**
    - Conduct biannual assessments of students' self-efficacy and quality of life to guide responsive interventions.
    - Involve parents and caregivers in advisory sessions to strengthen school–home collaboration.

Suggestions for Future Research:

1. A Cross-Regional Comparative Study of Academic Self-Efficacy and Quality of Life Among Students with special needs
2. The Differential Impact of Disability Type on Academic Self-Efficacy and Quality of Life in Inclusive Schools
3. A Longitudinal Analysis of Academic Self-Efficacy and Life Satisfaction among students with special needs and General education
4. Mixed-Methods Exploration of Psychosocial Factors Affecting Inclusive Education Outcomes
5. The Role of Family and Community Support in Enhancing Academic Self-Efficacy Among Students with Special Needs
6. Evaluating the Effectiveness of Intervention Programs Aimed at Improving Quality of Life and Self-Efficacy in Inclusive Education Settings
7. Academic Self-Efficacy and Life Satisfaction Across Educational Stages: A Comparative Study from Primary to Higher Education
8. Gender Differences in Academic Self-Efficacy and Quality of Life Among students with special needs and General education.

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تحليل مقارن للكفاءة الذاتية الأكاديمية وجودة الحياة بين الطلاب ذوي الاحتياجات الخاصة وطلاب التعليم العام في المدارس الثانوية

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ملخص البحث:

تتبنى هذه الدراسة منهجًا وصفيًا–مقارنًا لاستكشاف الفروق في الكفاءة الذاتية الأكاديمية وجودة الحياة بين 471 طالبًا في المرحلة الثانوية بمحافظة الإسماعيلية، منهم 221 طالبًا من ذوي الاحتياجات الخاصة و250 من طلاب التعليم العام. جُمعت البيانات باستخدام مقياس الكفاءة الذاتية الأكاديمية ومقياس جودة الحياة التابع لمنظمة الصحة العالمية (WHOQOL–BREF). شملت التحليلات الإحصائية اختبارات (t) للعينات المستقلة، وتحليل التباين الأحادي (ANOVA)، والانحدار المتعدد، وتحليل التباين المتعدد المتغيرات (MANOVA). أظهرت النتائج عدم وجود فروق ذات دلالة إحصائية في الكفاءة الذاتية الأكاديمية بين الطلاب ذوي الاحتياجات الخاصة (المتوسط = 67.81، الانحراف المعياري = 13.62) وطلاب التعليم العام (المتوسط = 67.93، الانحراف المعياري = 10.67)، − = t(156.70) 0.076، 940. = p. ومع ذلك، ظهرت فروق ذات دلالة إحصائية في درجات جودة الحياة لصالح طلاب التعليم العام (المتوسط = 92.35، الانحراف المعياري = 9.06) مقارنةً بنظرائهم من ذوي الاحتياجات الخاصة (المتوسط = 86.21، الانحراف المعياري = 14.37)، t(318) = −4.628، p < .001. وأشارت نتائج تحليل التباين المتعدد إلى عدم وجود أثر متعدد المتغيرات دال لنوع الطالب على الأبعاد المجمعة، Wilks' Lambda = 0.993، F(9, 0.156 = (210، p = 0.998، η²الجزئي = 0.007. ومع ذلك، لوحظ فرق أحادي المتغير دال في مهارات الدراسة، حيث تفوق طلاب التعليم العام على نظرائهم من ذوي الاحتياجات الخاصة (F = 39.190، p = .000). وتبرز هذه النتائج الحاجة إلى تدخلات مستهدفة لدعم المهارات الأكاديمية والرفاه النفسي للطلاب ذوي الاحتياجات الخاصة، بما في ذلك تحسين استراتيجيات الدراسة، وتطوير البنية التحتية الدامجة، وتعزيز الدعم النفسي والاجتماعي ضمن بيئات التعليم الثانوي.

الكلمات المفتاحية: الكفاءة الذاتية الأكاديمية، جودة الحياة، التعليم الدامج، الطلاب ذوو الاحتياجات الخاصة، طلاب التعليم العام.