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Gifted Education in Saudi Universities: Policies, Practices, and Cultural Influences: Benchmarking Best Practices

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Abstract. This study explores the current status of gifted education in Saudi universities by analyzing institutional policies, identification practices, and empowerment systems. Using a unique methodological approach that combines qualitative analysis with international standards, the research was based on data from semi-structured interviews with 100 university representatives (46 male and 54 female), as well as an analysis of official university documents and websites. Using a dual-methodological framework, this study provided in-depth insights into institutional perceptions and a comparative analysis with global practices in leading universities and centres in gifted care. The study results revealed disparities in policies and procedures for identifying and nurturing gifted students at Saudi universities. The most significant challenges included the absence of a unified national definition of giftedness, limited tools for identifying gifted students, poor faculty training, and a lack of interest in students with artistic or creative talents. These gaps are further shaped by cultural and institutional influences. Comparisons of Saudi university practices with global models highlight vital areas for institutional reform and offer recommendations for developing a comprehensive and culturally consistent framework for gifted education in Saudi universities.

Keywords: Benchmarking; gifted student; gifted education; qualitative-analytical; Saudi universities

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1. Introduction

In knowledge-driven economies, educating gifted individuals plays a crucial role in fostering innovation and sustaining national competitiveness. Saudi Arabia has increasingly recognized this need, particularly within the framework of Vision 2030, which emphasizes nurturing exceptional talent to build a knowledge-based, innovation-driven society (Mawhiba, 2025). Despite this national commitment to gifted students, their education in Saudi higher education institutions remains fragmented and rudimentary. Most initiatives target pre-university education, while universities lack coherent frameworks for identifying, supporting, and empowering gifted students (Aboud, 2023; Abu Nasser & AlAli, 2022; Alamiri, 2020; Alharbi, 2022).

In contrast, globally, prestigious universities have put comprehensive strategies in place to identify and nurture talented students through enriched curricula, early admission systems, and research programs (VanTassel-Baska, 2023; Tirri, 2021). These models are often based on theoretical foundations that support the multidimensional nature of giftedness and its development through cognitive, creative, and practical engagement such as Renzulli's three-ring concept and Sternberg's triad theory (Renzulli & Reis; Sternberg, 2024). However, in the context of Saudi universities, few studies have examined how to develop such models, while the influence of cultural factors on how talent is understood and supported cannot be overlooked (Aboud et al., 2019; Alotaibi & Ismail, 2024; Ismail et al., 2022).

Existing literature on gifted education in Saudi Arabia addresses school programs or policy analyses related to gifted education (Aboud, 2023; Aljughaiman et al., 2016; Alqahtani, 2021; Alzahrani, 2021). Little is known about how Saudi universities strategically plan for gifted education by incorporating enrichment or acceleration models or partnering with organizations such as Mawhiba to identify and support gifted students at the higher education level. This lack of systematic investigation represents a significant research gap, as universities play a pivotal role in achieving national innovation goals.

Accordingly, the current study aims to assess the current status of gifted education in Saudi universities, focusing on policies and practices for their education and identification, as well as strategies for their empowerment. Accordingly, the current study aims to assess the current status of gifted education in Saudi universities, focusing on policies and practices for the identification and education of gifted individuals, as well as strategies for their empowerment.

It also seeks to compare these results with international best practices to propose a strategic model tailored specifically to the Saudi context. The novelty of this study lies in its dual contribution: providing an empirical map of gifted education in Saudi universities (the first of its kind) and developing a culturally contextualized framework for aligning institutional practices with the objectives of investing in Saudi's gifted individuals.

1.1 Purpose and Research Questions

The current study aims to examine the principles, regulations, and practices governing gifted education in Saudi universities; analyze successful global models; and develop an evidence-based, culturally relevant framework to enhance the support and development of gifted learners in the evolving Saudi educational context. To this end the following questions are posed:

1. What is strategic planning in the field of gifted students' education in Saudi universities?
2. What are the procedures followed by Saudi universities for attracting gifted students?
3. What are the programs of gifted education in Saudi universities?
4. How Saudi universities empower gifted students?
5. How can international benchmarking of gifted education models inform the development of a culturally responsive and effective strategic framework for Saudi universities?
6. In what ways may an evaluation of the state of Saudi universities and global benchmarks for gifted education models be utilized to develop a culturally relevant and effective strategic framework for Saudi universities?

2. Literature Review

2.1 Global and International Approaches and Theories

Gifted education and empowerment have long been considered key drivers of innovation and creativity and supporters of national competitiveness. While university education systems globally have developed diverse approaches to identifying gifted learners and developing their skills, guided by psychological theories, cultural norms, and institutional policies, gifted education in Saudi Arabia is still developing, particularly at the university level (Alqahtani, 2021; Elhoweris et al., 2022). Although basic elements are in place, there are significant inconsistencies in their implementation (Alfaiz et al., 2022; Abu Nasser et al., 2022).

Psychological theories play a crucial role in determining how to identify and support gifted individuals. They also provide the conceptual foundation upon which modern models of gifted education are built. One of the most influential frameworks is Joseph Renzulli's (Renzulli & Reis, 2016) 'tripartite concept of giftedness,' which describes giftedness as the interaction of three key traits: above-average ability, task commitment, and creativity. Renzulli views giftedness as a combination of cognitive ability, motivation, and creativity; giftedness is not limited to a high IQ, which leads to outstanding performance. This perspective has significantly influenced enrichment programs for gifted students, as well as their identification procedures, in universities globally (Subotnik et al., 2024).

Similarly, Sternberg's triarchic theory of intelligence (2024) expanded the understanding of giftedness; gifted individuals, he argued, excel by integrating analytical, creative, and practical intelligence. In other words, they not only excel academically, but they can also effectively apply knowledge to real-life situations, adapt to new environments, and find innovative solutions (Sternberg, 2024). Both Renzulli's and Sternberg's models encourage a comprehensive and holistic approach to identifying and nurturing gifted students, an approach that contrasts

with the traditional academic-performance-based systems of gifted selection that still prevail in many Saudi universities (Aboud, 2023; Aldhafer, 2020; Alfaiz et al., 2022).

Globally, many countries, including but not limited to the United States, Finland, South Korea, and Singapore, have established gifted education through comprehensive policies, flexible identification systems, and differentiated instruction. Although definitions of giftedness vary across states in the United States, national frameworks encourage universities to consider multiple criteria, including creativity and leadership, when identifying gifted students (Aboud, 2023). They offer programs such as dual enrollment programs and study pathways specifically for gifted students (VanTassel-Baska, 2023). These are offered specifically for gifted students (Van Tassel-Baska, 2023). Tirri (2021) also noted that Finland has a unique approach to gifted students, based on providing differentiated education and individualized educational plans for gifted students.

On the other hand, both South Korea and Singapore maintain centralized programs for the gifted, such as the Gifted Education Program (GEP), which combines early identification, specialized schools, and curricula specifically designed for learners with exceptional abilities in the fields of science, technology, engineering, and mathematics (STEM) (Kim et al, 2020; Chua, 2023). The systems in these countries feature national definitions of giftedness, flexible policies, a clear methodology for early identification, a distinguished teacher training system, and guidance and support for gifted students to transition into professional and academic leadership roles. Furthermore, they often include gifted research centers (Tiwen, 2023).

2.2 Saudi Context: Gaps and Emerging Practices

At the university level, by contrast, Saudi Arabia's approach to gifted education is characterized by ambiguity and confusion. While the Mawhiba Foundation and the Ministry of Education (2025) implement structured programs at the pre-university level, universities lack a national policy framework for defining giftedness and nurturing gifted individuals. The biggest weakness is the lack of reliable, standardized tools that are appropriate to the Saudi context for identifying gifted students in most Saudi universities (Aboud, 2023).

Furthermore, definitions of giftedness are limited to academic excellence and are often measured solely by cumulative grade point averages (GPAs) (Alfaiz et al., 2022). Moreover, university initiatives such as student clubs, enrichment workshops, and summer programs lack theoretical foundations and sophisticated models such as those of Renzulli or Sternberg. As a result, many gifted students, particularly those with creative or leadership potential, are deprived of discovery and nurturing services (Aboud et al., 2019; Abu Nasser et al., 2022).

In the context of Saudi universities, the lack of a unified definition of talent poses a fundamental challenge that negatively impacts policy design and program implementation (Alzahrani, 2021). It also negatively impacts teacher training, curriculum development, and institutional planning, limiting these universities'

ability to provide targeted support (Alamiri, 2020). In addition, cultural factors, such as gender norms and the lack of appreciation for non-academic talents, particularly in fields such as music, visual arts, and performance, hinder the provision of fair and equal services to the gifted (Aboud, 2023).

2.3 Conceptual framework

The study adopts a conceptual framework that integrates global theories of talent with contextual and policy dimensions relevant to Saudi higher education. Giftedness is a multidimensional term that includes high intellectual abilities, creativity, leadership, and artistic skills. Renzulli's (Renzulli & Reis, 2016) three-ring model defines giftedness as the intersection of ability, creativity, and task commitment, which together form a comprehensive basis for identification and enrichment programs.

However, in the context of Saudi university education, most universities rely on academic performance or standardized tests to identify their gifted students (Alqahtani, 2021), ignoring creativity and motivation, which are two essential factors in Renzulli's model (Renzulli & Reis, 2016). Similarly, while Sternberg's (2024) triadic theory expands the scope of talent to include practical and creative intelligence, Saudi universities still focus their current programs on traditional academic achievement, with limited attention to real-world competencies and problem-solving (Aljughaiman et al., 2016; Tirri, 2021).). This discrepancy between theory and practice highlights the need for a culturally compatible framework that integrates international models into Saudi institutional reality.

While prestigious universities in countries such as the United States, South Korea, and Finland integrate gifted education into their national strategies (Van Tassel-Baska, 2023), Saudi Arabia still lacks a unified policy framework to support gifted students across its various universities (Aboud, 2023; Abu Nasser & AlAli, 2022). When applied to the Saudi context, these models help bridge the gap between national aspirations and current institutional practices at universities. While national policies focus on innovation, leadership, and talent development, policies on the ground remain limited and fall short of these aspirations (Alqahtani, 2021; Alharbi, 2022; Alsulami, 2020).

Therefore, the proposed framework for gifted education in Saudi universities combines three interconnected dimensions. The first is identification and classification, which include cognitive, creative, and motivational indicators aligned with international models, while ensuring consideration of the Saudi cultural context. The second is program development, includes implementing diverse programs such as enrichment, acceleration, and mentoring that foster academic excellence and creative productivity. The third relates to institutional empowerment and support, which include strategic policies, strengthening partnerships, and faculty training, ensuring the development of talent and aligning with national innovation goals.

3. Research Design and Methodology

3.1 Research Design

The study adopted a mixed-methods design with a qualitative focus. It combined qualitative content analysis with international standards to investigate how Saudi universities identify, identify, educate, and empower gifted students. Data were collected from semi-structured interviews with gifted students' managers at these universities and comparisons with international best practices at prestigious universities in the field of gifted education. This dual-method approach enabled a comprehensive understanding of institutional perspectives and their alignment with global standards, leading to the identification of gaps, opportunities, and policy implications for gifted education in Saudi universities.

3.2 Participants and Sampling

The study sample consisted of 100 university representatives (46 males and 54 females) from 18 public universities across Saudi Arabia. Participants were purposively selected, targeting those directly involved in gifted education or student affairs. Inclusion criteria required participants to hold relevant administrative or academic positions and have at least one year of experience in higher education. A total of 110 invitations were distributed, with a response rate of 91%, enhancing the representativeness of the study. Participants' mean age was 33.4 years (standard deviation = 11.02), and their mean experience with gifted individuals was 8.8 years (standard deviation = 9.3). Figure 1 displays sample characteristics:

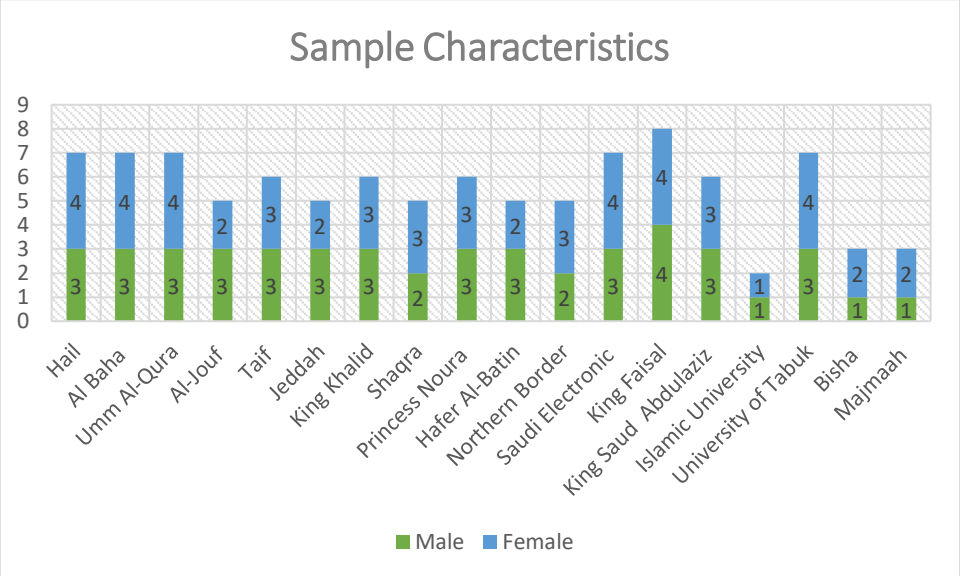

Figure 1: Sample Characteristics

3.3 Data Collection and Data Analysis

The study used semi-structured interviews, including open-ended questions, as the main data collection tool. The interviews were designed to explore insights and perceptions about universities' strategies, policies, challenges, and initiatives related to identifying and nurturing gifted students. The interviews included 25 open-ended questions, distributed across four main dimensions: strategic planning in gifted education (7 questions), attracting gifted students (4 questions),

educational programs for the gifted (9 questions), and empowering gifted students (5 questions). The relatively large number of participants was efficiently handled by designing semi-structured interviews based on open-ended questions, which were flexible and asynchronous. Instead of relying entirely on face-to-face sessions, interviews were conducted using multiple communication methods, including written responses via email or WhatsApp voice messages.

This approach allowed participants, whether administrators or university faculty, to respond flexibly at a time that suited them. Each participant received the same set of open-ended questions, designed to elicit detailed qualitative responses while maintaining consistency across the board. Responses were typically brief and focused, averaging 20–25 minutes for audio recordings or two to three printed pages for written responses. The researcher was able to collect data efficiently from participants while maintaining the depth and richness of qualitative insights. Following standard qualitative content analysis procedures, all data were transcribed, coded, and analyzed using NVivo 12 software (Dodovsky', 2019).

3.3.1 Criteria Used in Quantitative Data Analysis

The current study employed a primarily qualitative design; however, it also utilized a limited quantitative approach aimed at clarifying the frequency and prevalence of practices and policies related to gifted education among participating universities. Quantitative analysis followed binary coding (Yes/No). Interview responses were coded dichotomously, meaning each item was assigned a value of '1' if the university reported the practice or '0' if it did not exist. The total number of 'Yes' responses for each topic, such as strategic planning, partnerships, and enrichment programs, was calculated. The resulting frequencies were converted to percentages to illustrate the relative prevalence of each practice (e.g. If 83 universities reported having a defined strategy, the percentage shown was 83%).

In qualitative content analysis, the thematic quantification process followed established practices, in which response frequencies were converted into descriptive categories to indicate their degree of prevalence (Mayring, 2014). In the current study, practices reported by more than 70% of university representatives were considered widespread, those reported by between 40% and 69% were considered moderately widespread, and those reported by less than 40% were considered rare. These classifications are similar to threshold-based classifications in education research to describe institutional practices and levels of policy implementation (Alharthi, 2023; Miles et al., 2020).

3.4 Validity

To validate the results and ensure the accuracy of the methodology, triangulation was used, where data was collected from various sources, including interviews, official university documents, and websites. To ensure inter-coder reliability, two independent coders collaboratively analyzed the data, and a third reviewer then randomly checked the items for consistency. Christou's kappa coefficient of agreement between coders was also calculated, the reliability of which was 0.88, which is high and exceeds the recommended limit of 0.70 (Christou, 2023). The

content validity of the open-ended questions in the interviews was verified by presenting them to a group of specialists in gifted education at universities. The five arbitrators approved the validity of the interview items and their measurement of what they were designed to measure. They recommended some modifications that were taken into account when producing the final version of the interview items.

4. Results

4.1 Findings from Saudi Universities

4.1.1 Strategic Planning

To answer the question "What is strategic planning in the field of gifted students' education in Saudi universities?", it is important to organize the ideas around major focus areas in terms of themes and sub-themes connected to strategic planning in the field of gifted education. Table 1 shows potential themes and their sub-themes:

Table 1: Themes and Sub-Theme: Strategic Planning in the Field of Gifted Students' Education

Question	Themes	Sub-theme
What is strategic planning in the field of gifted students' education in Saudi universities?	Saudi universities have a strategy/strategic plan/policy/document for gifted students' education (33%)	-There is a specialized unit in the Guidance and Counselling Centre that deals with gifted students - Student clubs for talent and innovation - The university has a document to identify and educate gifted students - National Research Centre for giftedness - The presence of educational programs in the College of Education specializing in giftedness at the master's and doctoral levels
	Saudi universities have partnerships and cooperation with competent authorities to care for gifted students (81%)	- Holding an academic enrichment program in cooperation with the Mawhiba - Partnering with institutions that support talent (Mawhiba, & Misk) - Having an agreement with local institutions that support innovative students
	Specific financial budget to nurture gifted students (10%)	-There is no specific financial budget to nurture talent - There are no scientific or endowed chairs to support the gifted and precocious - The Mawhiba Foundation supports research related to giftedness -No support from institutes in society
	Universities have rehabilitation programs to raise the capabilities of faculty members in gifted students' education (56%)	- Offering training courses and workshops to spread the culture of talent and creativity and ways to discover and support gifted people academically, psychologically, and socially - Holding local and international scientific conferences in the field of talent

	- Evaluating the quality of planning, programs, teaching methods, curriculum, and educational environment. (40%)	- Gifted centers and units have a periodic evaluation of the work of the Gifted and Creative Unit on an annual basis - Evolution of summer programs held in universities in cooperation with Mawhiba
	Universities provide supportive enrichment resources in the field of gifted education (33%)	- The Guidance and Counselling Centers have a guide for the Talent and Creativity Unit - Many enrichment resources are provided in the Saudi digital library
	Marketing and media plans for gifted students' education (48%)	- Student activities - Student competitions in the field of talent (sports, art, design, drawing)

According to Table 1, the analysis of the strategic planning dimension for gifted student care revealed that 83% of Saudi universities claim to provide support for gifted individuals, whether through a defined strategy, policy, or documented plan. However, a closer examination of the actual practices, based on input from university representatives, uncovered significant variations in both the type and effectiveness of support offered. Not all initiatives at the university level were explicitly labelled as 'gifted' programs, nor are they necessarily rooted in scientific principles or best practices from the field of gifted education. The findings also highlighted that 72% of universities have partnerships or collaborations with specialized organizations involved in supporting gifted students.

However, these collaborations often prioritize general education over higher education. The most common partnerships are with Mawhiba (2025), or the local Department of Education. These collaborations generally involved universities hosting or implementing programs for gifted students, often facilitated by university faculty, but with a focus primarily on pre-university students. Interestingly, only 33% of universities have a dedicated budget for gifted student support, raising questions about how institutions can effectively implement strategies or policies for gifted education without sufficient funding. This disconnect suggests a gap between institutional commitment on paper and practical support in reality.

Faculty training was another critical area identified in the analysis. Approximately 61% of faculty members received some form of training to work with gifted students. However, there was limited clarity about the nature of these training programs, the criteria for selecting participants, or the mechanisms for evaluating their impact on teaching practices. Similarly, while nearly 60% of universities reported having enrichment resources to support gifted students, there was little information about the quality or effectiveness of these materials.

In terms of outreach, 72% of universities indicated they have marketing or media plans related to gifted education. However, these plans often amount to little more than promotional efforts, such as advertisements or event announcements, rather than substantive strategies to engage or support gifted students. These findings

underscored the need for a more cohesive and well-funded approach to gifted education within Saudi universities. While many institutions have taken steps to support gifted students, significant gaps remain in the consistency, quality, and effectiveness of these efforts. By addressing these shortcomings, universities can better align their initiatives with global best practices and provide meaningful support for gifted individuals at the higher education level.

4.1.2. Gifted Student Attraction

To answer the question "What are the procedures followed by Saudi universities for attracting gifted students?" themes and sub-themes connected to the techniques used by Saudi universities to attract gifted students are presented in Table 2:

Table 2: Themes and Sub-Theme Procedures for Attracting Gifted Students

Question	Themes	Sub-theme
What are the procedures followed by Saudi universities for attracting gifted students?	Universities have a program to attract gifted students (22%)	- Most programs at universities are discrete efforts not framed by a specific policy or vision. - There is no clear and comprehensive policy in most universities regarding attracting gifted students
	Universities have a special portal to attract gifted students (77%)	- Among Saudi universities, only three them have a special portal to attract gifted students. - Most universities attract academically gifted students There are no efforts to attract talent in certain types of talent, such as athletic talent, and arts
	Universities have special standards for accepting gifted students (45%)	- There are no unified standards for accepting gifted students. - Each university takes a different approach according to its policy and strategy
	Diverse fields attract students to the university (35%)	- Most universities attract high-achieving students - Fewer universities attract athletically gifted students - Fewer universities attract talent in theatre and music-gifted students - Fewer universities attract distinguished scholars in the field of basic sciences and the holy Quran. -Fewer universities attract outstanding students at the national and international levels

As noticed in Table 2, Saudi universities actively pursued policies aimed at attracting gifted students from the secondary education stage, as indicated by 78% of surveyed institutions. Many universities (72%) reported having specific standards and criteria for accepting gifted students, which is a positive sign. However, the recruitment policies and acceptance standards lack clarity, as evidenced by the fact that only 39% of universities have a dedicated portal for recruiting gifted individuals. Attracting talented students primarily focused on academically outstanding individuals, students excelling in the arts, or those holding patents.

Moreover, 80% of university admission requirements—published on their websites or unified admission portals—included pathways specifically designed for gifted students. Despite these efforts, the study revealed that 76% of universities still do not have precise criteria for identifying gifted students, raising questions about the rigor and scientific basis of existing standards.

4.1.3. Educational Programs and Resources

To answer the question "What are the programs of gifted education in Saudi universities?", Table 3 displays themes and sub-themes related to the procedures followed by Saudi universities to attract gifted students:

Table 3: Themes and Sub-Theme Programs of Gifted Education

Question	Themes	Sub-theme
What are the programs of gifted education in Saudi universities?	A body or institute specialized in gifted students' education at the university (77%)	-Many universities have specific units or centers for outstanding students' education and support -Many universities have student clubs promoting creativity and innovation - The majority of universities contain a unit in the Deanship of Student Affairs
	The university provides an appropriate environment (e.g., various facilities, equipment/private halls, and laboratories) for gifted students (76%)	- Some universities have theatres where talented students present their artistic performances, such as plays and folk sketches - Some universities have a lobby in which talented students display their drawings and artwork on certain occasions Some universities have football and basketball fields. In addition, sports clubs - There are no laboratories designated for the gifted, but they are shared with students at the university
	Communication channels between the university and with gifted students' families (11%)	- Poor communication between the university and gifted students' families - Weak support for gifted students from their families in university activities related to them as gifted students
	Universities have motivational mechanisms for gifted students (78%)	- Most universities honor innovative and outstanding students - Supporting students financially to participate in competitions locally and internationally - Appointing consultants to register patents for talented students. Making laboratories available for practical application - Academic acceleration for academically distinguished students
	The university has valid tools to identify gifted students (4%)	- A lack of reliable identification measures for the gifted - A shortage of trained and qualified personnel to utilize gifted identification techniques and evaluate results ensued

	Enrolment of gifted students in university programs (enrichment, honors, academic acceleration, mentorship, …) (54%)	-A variety of training courses cover procedures for registering patents and intellectual property. In addition, the creative industry - Student groups and sporting events - Some colleges offer mentorship programs for excellent students.
	Reliable statistics and data on gifted university students are available. (10%)	- There are no documented statistics and data for gifted students in most universities - Student competitions in the field of talent (sports, art, design, drawing)
	The university supports talented students' innovations and patents. (68%)	- Many colleges support gifted adolescents' studies and patents - Professors encourage gifted learners through counselling and personal contact
	Universities provide enrichment and awareness programs for the community in gifted education. (55%).	- Many colleges provide summer programs to promote gifted students' research - Universities do not have community awareness programs for gifted education - There are no brochures that explain how to care for the gifted

As noticed in Table 3, Many universities offered enrichment programs for gifted students, typically through units affiliated with the Deanship of Student Affairs. These programs are available at 83% of the universities surveyed. However, the enrichment programs were often generic training courses, leaving it unclear whether they were specifically designed for gifted students or developed using scientifically grounded standards. Saudi universities generally provided an environment conducive to supporting gifted students, with 78% offering physical resources and infrastructure suitable for their needs.

While 50% of universities reported having standards to identify gifted students, the study raised important questions about the type, accuracy, and scientific foundations of these standards. Additionally, 33% of university representatives confirmed the presence of communication channels between universities and the families of gifted students. Community awareness programs about gifted education were available in 44% of universities, while motivational mechanisms for gifted students were implemented in 83% of institutions.

4.1.4. Empowerment and Post-Graduate Support

To answer the question "How do Saudi universities empower gifted students?", Table 4 displays themes and sub-themes related to the empowering gifted students:

Table 4: Themes and Sub-Theme: Empowering Gifted Students

Question	Themes	Sub-theme
How are Saudi universities empowering gifted students?	Universities have programs to empower gifted students in fields that suit their talents. (34%)	- Some scientific colleges specifically provide the opportunity for their students to undertake field training in government and private institutions - Field training is crucial in schools and kindergartens for students who plan to serve as teachers following graduation
	The university supports the research contributions of talented students and their publication in scientific journals. (33%).	- Assisting several students in scientific publishing and patent registration - Many universities support students' research projects by providing laboratories and equipment - The Saudi Open Digital Library serves the largest Arabic and foreign sources for all Saudi university students
	Universities have mechanisms to follow up on gifted students after they graduate. (2%)	-Most universities lack procedures for following up with gifted students after graduation.
	The university offers student exchange programs and visits to prestigious international universities. (13%)	- The university participated in many international visits to international universities to exchange experiences with its talented and creative students
	The university provides scholarships to talented students to study at prestigious universities around the world. (44%).	- Many universities offer scholarships to outstanding students to study at prestigious universities - Fewer universities offer scholarships to gifted students

As noticed in Table 4, empowering gifted students was a priority for many Saudi universities, with 72% offering programs tailored to develop their talents. These programs included opportunities for gifted students to engage in research and publish in scientific journals available at 72% of universities surveyed. However, only 39% of universities had mechanisms to follow up on gifted students after graduation, and only 22% had established student exchange programs or partnerships with prestigious international universities for gifted individuals. Alarmingly, only 17% of Saudi universities provided scholarships for talented students to pursue their education at world-renowned universities. These point to a significant gap in support for gifted students seeking advanced opportunities abroad.

4.2 Findings from International Benchmarking

To answer the primary question, "How can internationally benchmarking of gifted education models inform the development of a culturally responsive and effective strategic framework for Saudi universities?" the study answered the following sub-questions:

4.2.1. What is Selection Method?

The international benchmarking in the current study aimed to evaluate how universities, global centers, and national systems for gifted education are structured, defined, and implemented. To answer the question and ensure alignment with the goals of Saudi Vision 2030, a multi-stage sampling strategy was employed to select both countries and universities for comparative analysis (Christou, 2023). The first step involved identifying countries that excel in gifted education policies, which have flexible national strategies, differentiated programs, and effective support mechanisms for post-secondary education.

The selection of countries required that they meet criteria related to the availability of national frameworks or policies for gifted education, international recognition of the quality of education, and innovation indicators, such as the performance of the Programme for International Student Assessment (PISA). In addition to regional and cultural diversity, and finally, access to recent and reliable documents, Figure 2 summarizes the methodology for selecting inputs and evidence for benchmarking.

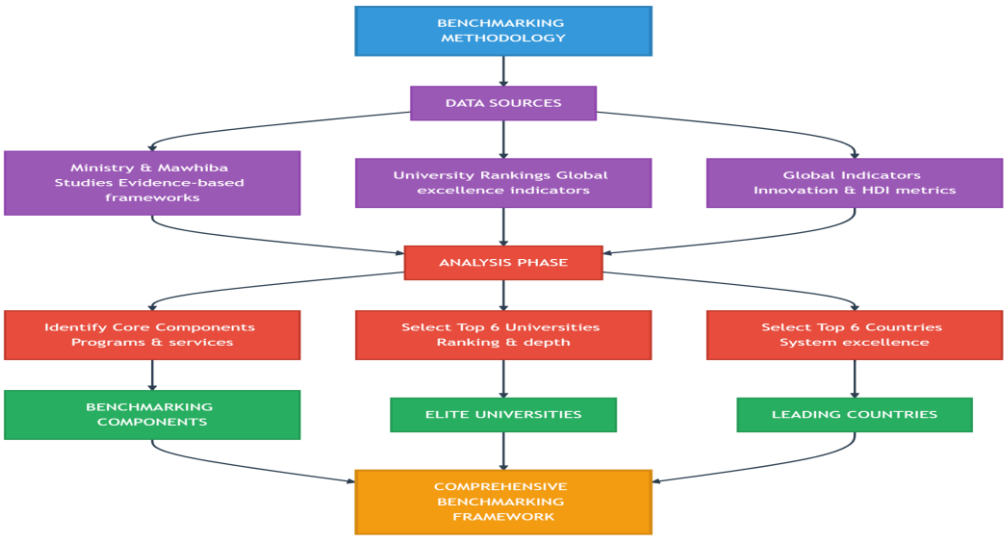

Figure 2: Methodology for Selecting Benchmark Components

4.2.2 *What are Global Indicators Used?*

To answer the question, in the initial phase, a unique system was developed to identify the countries with the highest quality in identifying and nurturing gifted students. Eight inputs and evidence were reviewed for benchmarking, including reports from the European Union. The benchmarking was based on several key sources, including a Mawhiba study on gifted programs in higher education, global indicators such as the Human Development Index and the Innovation Index, university ranking reports, and a guide to gifted programs at the university level. Additional evidence from regional and international initiatives was also considered, as illustrated in Figure 3:

Figure 3: Inputs and Evidence for Benchmark Comparisons

4.2.3 What are Top Countries?

To answer the question, a global indicator related to gifted education was determined based on the criteria of the most distinguished countries in caring for the gifted in their universities through a policy that supports gifted individuals, the national definition of the gifted and gifted care programs at universities. Table 5 shows the national definition of gifted, as well as universities and gifted care programs at the postsecondary level:

Table 5: Countries that are Highest in Global Indicators for Catering for the Gifted

Country	**A supportive policy for the gifted**	**Definition of gifted at the national level**	**Institution**	**Gifted care programs at the post-secondary level**					
			Supporting government agencies	Identification	Differentiated content	Acceleration	Enrichment programs	Centers	Academies
Denmark	No	High-performing students were recognized at a select number of schools	NA	NA	NA	NA	NA	√	√
USA	It does not exist at the national level	The definition depends on the state.	The authority authorized with education with the independence of implementation	IQ SAT ACT	√	√	√	√	√
Sweden	It is found in education legislation	Definition of decentralized	The Ministry of Education and non-	Decentralized	√	√	√	√	N

			governmental institutions						
Germany	There is no uniform policy	Each province takes a different approach depending on its own policy or definition.	The Ministry of Education and non-governmental institutions	√	NA	√	√	√	√
France	No	There is a definition at the national level	Ministry of Education, Culture and Science	√	√	√	√	N	N
Switzerland	It does not exist at the national level	Definition of decentralized	NA	√	√	√	√	N	N

Table 5 shows countries with strong global education indicators that effectively value and support gifted individuals. The indicators included national policy frameworks, definitions of giftedness, institutional structures, and sponsorship programs. Countries with advanced education systems, such as the United States, Germany, and France, also demonstrate a significant interest in gifted education, implementing comprehensive and systematic programs to nurture gifted students. Furthermore, Table 5 indicates that, with the exception of France, no country had policies specifically aimed at supporting gifted students.

Most countries also defined giftedness according to their states or provinces. Moreover, most countries lack systems for identifying gifted students, with the exception of the United States, which uses college entrance exams as a criterion for selecting gifted students. In addition, gifted education programs in most countries are diversified, including acceleration programs, enrichment programs, and differentiated content programs. The Gifted and Talented Students Education Program is a federal initiative in the United States that facilitates research and training for underprivileged gifted groups (Plucker & Callahan, 2021).

The United States, Germany, France, and Singapore all include academies dedicated to gifted students. In contrast, the Finnish education system prioritizes individualized learning for gifted youth to achieve their full potential, integrating gifted students into university as part of a comprehensive inclusion policy (Tirri, 2021). Similarly, South Korea's educational framework supports gifted students through specialized academies offering differentiated curricula (Kim et al., 2020). Finally, Singapore's Gifted Education Program systematically identifies and develops a rigorous curriculum for gifted children (Chua, 2023).

National definitions of talent vary from country to country; however, they all include intellectual, creative, and leadership abilities. The National Association for Gifted Children in the United States defines giftedness as exceptional talent in intellectual, creative, artistic, and leadership areas (Van Tassel-Baska, 2023). South

Korea, on the other hand, defines gifted children based on their exceptional abilities, as assessed through psychological tests, teacher recommendations, and portfolio evaluations (Kim et al., 2020). Finland typically defines talent as exceptional ability in various fields, with an emphasis on holistic development (Tirri, 2022). Singapore's definition of giftedness asserts that gifted people possess exceptional intellectual abilities that require specialized educational interventions (Chua, 2023).

As Table 5 shows, most countries have effective gifted education systems and have dedicated institutes or programs to identify and nurture gifted individuals. Finland, however, has adopted a different system that integrates gifted education into mainstream education, providing flexible pathways for advancement (Tirri, 2022). The Korea Advanced Institute of Science and Technology (KAIST) emphasizes STEM education and early talent cultivation (Kim et al., 2020). In the United States, institutes such as Johns Hopkins University's Center for Talented Youth CTY (2025) provide advanced courses and mentorship. Finally, the National University of Singapore (NUS) offers advanced academic opportunities for gifted students (Chua, 2023).

Regarding scientific research, the University of Helsinki in Finland offers intensive research programs and mentoring opportunities for outstanding students, helping them transition into relevant societal roles (Terry, 2022). Furthermore, the Korea Advanced Institute of Science and Technology (KAIST) in South Korea offers full scholarships, research opportunities, and global exchange programs for outstanding students (Kim et al., 2020). In the United States, institutions such as MIT and Stanford provide specialized honors programs, access to cutting-edge research, and entrepreneurial funding (Stanford University, 2025). Finally, the National University of Singapore offers scholarships, mentoring, and leadership development opportunities to academically exceptional students (Chua, 2023).

4.2.4 What are Top Universities?

In response to this question, numerous prestigious universities engaging in gifted education were chosen from both the United States and Britain as being recognized for their admission processes, programs designed to recruit students with exceptional gifts, professional and academic support, and gifted programs, as illustrated in Table 6:

Table 6: Top Universities in International Rankings

University	Admission	Programs to attract the gifted	Professional and academic guidance	Programs					
				Honors programs	Academic acceleration	Mentorship program	Specialized centers	Academies attached to the university for the gifted	Other
University of Oxford	Outreach program to attract gifted students	High Potential Individual (HPI) visa	√	√	NA	√	A virtual site that provides gifted researchers	NA	Award for gifted students' example
Stanford University	Highest: SAT, ACT, AP, IB	Pre-college programs	√	√	√	√	√	NA	---
Massachusetts Institute of Technology	Highest: SAT, ACT, AP, IB	Scholarships: E.g., Marshall	√	√	√	√	√	√	---
Harvard University	Highest: SAT, ACT, AP, IB Recommendations	Initiatives: E.g., President's init. For attracting talent in art	√	√	√	√	√	√	Harvard College for Students' Preparation
University of Cambridge	A-level and IB	High Potential Individual (HPI) visa	√	√	NA	√	√	NA	Admission available for under 18 with restrictions
Princeton University	Highest: SAT, ACT, AP, IB	The Princeton University Preparatory Program	√	√	√	NA	√	√	Summer programs for all ages of gifted

Table 6 illustrates the competitive nature of prestigious institutions such as Oxford and Harvard in gifted education. These universities have implemented innovative strategies to identify gifted students. Oxford University adopted a rigorous admissions framework that included ability assessments such as the TSA and assessments of specific talents (Koshy et al., 2018). Talented individuals were identified through academic performance, recommendations, and interviews that assessed their critical thinking and intellectual prowess.

In terms of sponsorship, Oxford University facilitated professional training and mentoring opportunities from distinguished researchers, as well as facilitating talented individuals' access to leading research resources. Additionally, scholarships and awards are offered to outstanding students (Koshy et al., 2018). Stanford's admissions process goes beyond Oxford's holistic approach, encompassing standardized testing, special talents such as the arts or sciences and technology, and leadership (Stanford University, 2025).

Regarding sponsorship, funding initiatives offered by the Stanford Research Institute encourage early scholarly engagement. The Stanford Center for Gifted Education also offers enrichment programs. Talented students in STEM fields at Massachusetts Institute of Technology MIT are identified using standardized tests, competitive achievement, and portfolio assessments that highlighted their creativity and problem-solving skills. In terms of sponsorship, the institute provides access to the institute's Media Lab and offered an academic advising program (Massachusetts Institute of Technology, 2025). Harvard University employs a comprehensive admissions strategy for gifted students, combining academic achievement with excellence in extracurricular activities and leadership skills. Regarding sponsorship, Harvard offers a flexible curriculum that supports interdisciplinary study, while also offering scholarships to outstanding students and supporting research projects through the HCRP program (Harvard University, 2025).

Cambridge University uses gifted identification methods similar to those of Oxford University, focusing on performance in entrance examinations such as the STEP test or the BMAT (Koshy et al., 2018). Finally, Princeton University features a rigorous admissions process for gifted students that focuses on their intellectual and research abilities, complemented by an assessment of analytical skills and mentoring initiatives that align with academic and professional goals (Princeton University, 2025).

4.2.5 Which international universities offer quality programs for gifted students, and what are the key characteristics of these programs?

In answer to this question, several worldwide universities have been identified as offering specialized programs for the support of gifted pupils, as illustrated in Table 7:

Table 7: Universities that offer Quality Programs in Catering for Gifted Students

University/ Center	Country	Implementation mechanism	Age	Program					
				Scale	**Conditions**	**Early admission**	**Double major**	**Mentorship Program**	**Other**
University of British Columbia Transition Program	Canada	A two-year, full-time program that combines high school and undergraduate study on a dedicated campus	20 students aged 12-15 years	Program exam specialized tests	Recommendation from the program coordinator	√			
University of Science and Technology of China	China	Classes within the university dedicated to gifted students offer a two-year program with specialized curricula	16 years or younger	Custom tests for the program	Pass the program exam. Pass the interview	√			Graduates hold prestigious positions at leading institutions e.g., Harvard
California State University	USA	A group of 20–35 students enrolls in an independent on-campus program to complete its academic requirements.	Middle and high school students	ACT SAT	Pass the pre-university test.	√			
Advanced Academy of Georgia	USA	A one-year independent program allowing students to study secondary-level courses of their choice.	High school students	GPA ACT SAT	Interview Guardian approval	√			
Robinson Centre For Young Scholars at	USA	Concentrated courses are offered at an independent headquarters within the university for a year, then the application is	Intermediate stage and above	ACT SAT	Academic recommendation Guardian approval	√			

Washington University		transferred to another year, equivalent to the preparatory year.			Scientific article Interview				
The Texas Academy of Mathematics and Science (TAMS)	USA	A two-year residential program offering a rigorous academic curriculum for college coursework, students receive a private high school diploma and are classified as undergraduates.	High school	ACT SAT	Excellence in sports and science: Academic Recommendation. Submit an academic report.	√		√	
Dublin City University	Ireland	One day a week at a university headquarters to study university courses that allow early entry	High school	CAT	To be a CTYI student				20 students in each course

As depicted in Table 7, the UBC (Canada) program includes both high school and university courses, allowing students to proceed directly to university studies (Kanevsky & Clelland, 2012). The acceleration program allows students to finish their high school requirements while still receiving college credits. The program provides students with individual attention in small class groups, as well as specialized training and mentoring. It also offers students excellent research opportunities and academic resources at UBC (Koshy et al., 2018).

The University of Science and Technology of China (Zhang, 2017) offers the Young Talents Program, which is a specialized program for gifted pupils in STEM areas. The college offers early entry by identifying and integrating gifted high school students into university programs. In addition, the Tracks Intensive program emphasizes mathematics, physics, and computer science. The institution provides gifted pupils with access to cutting-edge laboratories and research resources.

California University in Los Angeles offers the Early Entrance Program (EEP) to gifted students. The university offers accelerated Degree Pathways, allowing gifted students as young as 11 to begin university studies that encourage leadership skills through extracurricular and community-based activities. The University offers academic advisers, peer mentorship, and counselling to new university students (California University, 2025). The Advanced Academy of Georgia's (USA) dual-enrollment program allows gifted high school students to earn college credits while finishing high school. The program provides a difficult curriculum in which students take college-level courses in a range of subjects.

Furthermore, the curriculum promotes student leadership and personal development through extracurricular activities. Furthermore, Mentorship and Counselling programs assist students regularly in meeting academic hurdles as well as dealing with social and emotional issues (University of West Georgia, 2025). The Robinson Center for Young Scholars at Washington University (USA) provided early-enrollment and enrichment programs for gifted pupils. The center provides a wide range of activities, including the Early Entrance Program, Transition School, and summer enrichment workshops. The center's mentorship program provides personalized academic and career guidance (Robinson Center for Young Scholars, 2025).

The Texas Academy of Mathematics and Science (TAMS) (USA) program provides early college entrance to gifted high school students who excel in science, technology, engineering, and mathematics. Students take college-level math, science, and engineering classes. Moreover, Research Integration offers possibilities to collaborate with university experts on cutting-edge research projects. Furthermore, scholarships are awarded to high-achieving students (University of North Texas, 2025).

High school programs allow students to enroll in summer programs that provide exceptional college-style courses on advanced topics that enhance academic and

personal development. Furthermore, CTYI's early college entry program enables transitional year students to study at the college level, thus enhancing their future academic readiness. The CTYI Centre for Gifted Research at DCU develops a comprehensive range of materials to assist gifted students in Ireland. This effort seeks to investigate effective ways to provide for gifted students, ensuring they receive adequate challenges and support (O'Reilly, 2018).

4.3. In what ways may an evaluation of the state of Saudi universities and global benchmarks for gifted education models be utilized to develop a culturally relevant and effective strategic framework for Saudi universities?

Despite their differences in cultural and institutional contexts, these international models shared many common features, which qualify them to provide a model strategy for Saudi universities.

4.3.1. Develop a Unified National Policy Framework

A coherent framework at the national or federal level was a key outcome of global best practices, guiding the process of identifying, supporting, and empowering gifted students. Although the United States lacked a national definition of giftedness, it does have policies that provide structured support for gifted students. In contrast, Saudi Arabian universities lack a unified national definition of talent, which results in fragmented practices. Sternberg and Renzulli also pointed out that a unified policy that integrates intellectual, creative, and leadership capabilities provides a solid foundation for institutional consistency.

4.3.2. Broaden Identification Criteria

Identifying gifted students was the cornerstone of their education. Therefore, prestigious universities use multidimensional identification strategies, including intelligence and creativity tests, teacher referrals, assessment of non-cognitive skills, and performance-based assessment. The United States uses the SAT/ACT (VanTassel-Baska, 2023), in addition to psychometric tests and nomination lists, while the Singapore General Competency Program (GEP) uses both aptitude tests and teacher assessments (Chua, 2023). Most Saudi universities, in contrast, rely on academic achievement, represented by cumulative GPA, without taking talent indicators into account.

4.3.3. Institutionalize Honors and Acceleration Programs

Prestigious universities and centers such as Harvard (Harvard University, 2025) and Stanford (Stanford University, 2025) offer flexible academic structures, including early admission to college, dual enrollment programs, research training, and honors programs. These programs challenge outstanding students, enabling them to pursue customized educational paths. However, Saudi universities lack such institutional options, especially for students with artistic or practical talent.

4.3.4. Strengthen Faculty Preparation and Mentorship

Prestigious universities such as Harvard and Oxford (Koshy et al., 2018) implement numerous professional development programs for faculty that focus on gifted education strategies, identification tools, and mentoring practices. In

contrast, most faculty members in Saudi Arabia have not received specialized training in gifted education, which limits their ability to provide differentiated instruction or academic guidance.

4.3.5 Build Research and Innovation Ecosystems

Leading institutions integrate gifted education with cutting-edge research centers, laboratories, and innovation centers. Gifted students also have access to resources and receive funding for their independent research and entrepreneurial projects under the supervision of specialized experts. Programs such as MIT's Undergraduate Research Program or Stanford University's Research Internships help talented students to solve real-world problems. This calls for integrating talented students into research initiatives, encouraging them to innovate in line with the goals of Saudi Vision 2030.

4.3.6 Ensure Post-Graduation Continuity and Global Integration

Globally competitive universities provide alumni networks that support talented students, as well as international exchange programs that help them continue their development after graduation. Countries such as South Korea (Kim et al, 2020) and Finland (Tirri, 2022) ensure that their talented undergraduate students transition into leadership and innovation roles. Developing long-term follow-up systems and international exchanges allows for support for Saudi talent beyond graduation and for them to remain connected to academic, professional, and innovation systems.

5. Discussion

5.1 Gaps, Challenges, and Opportunities

The current study provided a comprehensive analysis of the status of gifted education in Saudi universities, based on qualitative data drawn from semi-structured interviews with representatives of gifted support and international standards derived from benchmarking of a number of prestigious universities and centers in gifted support. Despite the efforts made in recent years by Mawhiba, significant structural, cultural, and institutional barriers remain (Aboud, 2023). This section discusses the main findings across four dimensions: policy gaps, cultural and institutional constraints, missed opportunities, and the implications of benchmarking.

5.2 Structural Gaps in Saudi Policy

Perhaps the most prominent challenge revealed by the study's results is the absence of a unified national policy guiding gifted education at the university level. Although many universities support gifted students through their frameworks and some programs, they lack a coherent national definition of giftedness and unified identification protocols (Alharbi, 2022), as well as institutional commitments to program development (Alamiri, 2020; Alharthi, 2023).

The lack of policies leads to inconsistent practices among universities, with some providing limited support in the form of activities managed by student affairs

deans. In contrast, others offer general enrichment programs with unclear assessment mechanisms (Alamer & Phillipson, 2020; Aljughaiman et al., 2016). Moreover, many universities view gifted education as a luxury (VanTassel-Baska, 2023); the financial support provided to a limited group of students could be diverted to academic programs (Alfaiz et al., 2022). Therefore, most universities do not allocate a specific budget for gifted initiatives, making it difficult to design and sustain long-term programs, provide research opportunities, or even train faculty members.

5.3 Cultural and Institutional Challenges

Identifying, supporting, and empowering students is greatly influenced by cultural perceptions of giftedness. Giftedness is often closely linked to academic achievement, particularly in specific disciplines such as science, technology, engineering, and mathematics (STEM subjects). Talented students in the arts, sports, leadership, and social innovation are denied adequate recognition (Aboud et al, 2019; Abu Nasser et al., 2022). Gender norms, particularly in more conservative regions, also limit the opportunities for talented students, especially females, to participate in enrichment programs such as summer camps or studying abroad (Alzahrani, 2021).

At the institutional level, poor faculty training is another obstacle. University programs often rely on one-size-fits-all models. Most faculty members have not received adequate training in identifying gifted students or teaching them differently (Elhoweris et al., 2022). Additionally, there is poor coordination among academic departments, student affairs units, and those involved in providing support to gifted students, leading to fragmented efforts (Aldhafer, 2020; Alqahtani, 2021).

5.4 Missed Opportunities

Although some Saudi universities have succeeded in providing gifted students with essential enrichment experiences, these initiatives lack integration and long-term development (Aboud, 2023). Furthermore, few universities have monitored the progress of gifted students after graduation, missing the opportunity for those responsible to evaluate the outcomes of these initiatives or to build alumni networks that support national innovation agendas.

Moreover, international cooperation in the field of gifted education remains limited, as do exchange programs and joint research initiatives for gifted students (Alsulami, 2020). This not only restricts the development of these students but also isolates Saudi universities from leading global gifted education systems. Another barrier to missed opportunities is the underutilization of national resources such as digital learning platforms, flexible admissions pathways, research centers, and digital libraries (Aboud, 2023).

5.5 Implications of Benchmarking Findings

A benchmarking analysis revealed the best practices adopted by prestigious international universities in the field of identifying and nurturing gifted students,

which are clearly absent in the Saudi context. Many countries have adopted structured systems for identifying and supporting gifted students. For example, the United States (VanTassel-Baska, 2023), South Korea (Kim et al, 2020), and Finland (Tirri, 2022) use multidimensional identification models, integrate gifted education into national policies, and provide academic pathways such as excellence programs, mentoring, and early university admission (Plucker & Callahan, 2021).

Many universities, such as Harvard (Harvard University, 2025), Stanford (Stanford Research program, 2023), and Oxford (Koshy et al., 2018), support gifted students by offering research-intensive curricula that nurture their intellectual and creative growth. They also provide faculty training on how to work with gifted students and develop their skills. These universities seek to develop cognitive abilities alongside non-cognitive traits in gifted students, such as leadership, motivation, and the ability to innovate—areas that Saudi higher education has neglected to develop (Aldhafer, 2020; Alsulami, 2020).

6. Conclusion

The study provided a comprehensive examination of the current status of gifted education in Saudi universities, highlighting critical gaps and promising developments. Despite some attempts made by some universities to support gifted students, including partnerships, enrichment programs, and research opportunities, regulating policies remain fragmented and inconsistent with global best practices. The biggest challenge is the absence of a unified national policy, reliable identification mechanisms that fit the Saudi context, and culturally relevant frameworks that meet the needs of gifted students in academic and non-academic fields.

This study identified several essential components for building an effective and inclusive gifted education system by comparing internationally recognized models such as those of the United States and Singapore. These components include institutional commitment supported by coherent national policies, multidimensional gifted identification tools, funded enrichment and acceleration programs, and faculty training in gifted teaching methods. Moreover, the strategic model proposed in the study provides a scalable roadmap for Saudi universities to institutionalize gifted education in ways that align with the system of innovation, excellence, and global competitiveness.

In short, Saudi universities are striving to transform into a knowledge-based society, prepared for the future. By drawing on international experiences and national strengths, they can shift from isolated individual initiatives to a unified, systematic approach that nurtures the intellectual, leadership, and creative capabilities of their talented students.

7. Limitations

Although the study offers valuable insights, it also has some limitations. The data were derived from the perspectives of university representatives and do not fully

reflect the views of students, faculty, or other stakeholders. Additionally, the benchmarks did not include in-depth case studies of programs implemented by prestigious foreign universities and centers in the field of gifted education but rather relied on sources provided by those universities. Moreover, although the proposed model has proven its effectiveness in theory, it has not been tested at any Saudi university. Finally, these limitations indicate the need for a broader and more diverse research base to validate and improve the study's findings.

Declaration of interests

The author declares that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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