




## A Comparative Study of the Talent Management Model for Gifted Students in the Educational Systems of Iran and Canada and the Presentation of a Health-Based Talent Identification Model

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### ABSTRACT

**Purpose:** The present study aimed to compare the talent management models of gifted students in the educational systems of Iran and Canada and to develop a health-based talent identification model grounded in multidimensional educational, psychological, and social principles.

**Methods and Materials:** The study employed a mixed-methods descriptive design integrating qualitative and quantitative approaches. In the qualitative phase, document analysis, semi-structured interviews, and content analysis were conducted to examine the philosophical and scientific foundations of gifted education in Iran and Canada. Purposeful sampling was used to select 40 experts in psychology, educational sciences, gifted education, and educational management from major universities and educational institutions. In the quantitative phase, the statistical population consisted of gifted students studying in SAMPAD secondary schools in Tehran, from which 160 students were selected using multi-stage cluster sampling. Data collection tools included expert interview protocols and a researcher-developed questionnaire derived from qualitative findings. The questionnaire consisted of 50 items measuring nine dimensions of talent management. Data were analyzed using content analysis, exploratory factor analysis, confirmatory factor analysis, and structural equation modeling through SPSS and AMOS software.

**Findings:** The qualitative findings identified nine major dimensions of talent management, including multidimensional dynamics, independence-based enrichment, assessment based on testing, special educational facilities, special educational programs, competitions and olympiads, autonomy in talent recognition, participatory talent identification, and talent monitoring systems. Exploratory factor analysis demonstrated that the nine-factor structure explained 72.52% of the total variance. Confirmatory factor analysis and structural equation modeling indicated excellent model fit ( $\chi^2/df = 2.51$ , RMSEA = 0.028, CFI = 0.97, GFI = 0.95).

**Conclusion:** The findings demonstrated that effective talent management for gifted students requires multidimensional, flexible, participatory, and health-oriented educational systems that integrate academic excellence with emotional development, creativity, autonomy, and collaborative learning.

**Keywords:** Gifted Students, Talent Management, Health-Based Talent Identification, Gifted Education, Educational Systems, Canada, Iran, Enrichment Programs.

## 1. Introduction

In contemporary educational systems, the identification, development, and management of gifted students have become among the most strategic priorities of educational policymaking because human capital development increasingly depends on nurturing intellectual, creative, emotional, and social talents from early educational stages. Modern societies no longer define giftedness solely through intelligence quotient or academic achievement; rather, giftedness is conceptualized as a multidimensional and culturally embedded phenomenon involving creativity, leadership, emotional intelligence, innovation, social adaptability, problem-solving ability, and specialized talents in scientific, artistic, technological, and interpersonal domains (Maker et al., 2023; Mohseni & Abedi, 2025; Rutigliano & Quarshie, 2021). As educational systems transition from traditional standardized models toward personalized and competency-based learning frameworks, the need for comprehensive talent management systems capable of recognizing diverse student abilities has become increasingly evident. Contemporary gifted education emphasizes that talent development should not be restricted to academic excellence alone, but should also encompass social-emotional growth, psychological well-being, cultural responsiveness, and ethical development (Elias et al., 2024; Rinn, 2023; Shaunessy-Dedrick & Suldo, 2024). Consequently, countries with advanced educational systems have attempted to redesign gifted education policies around flexibility, inclusiveness, creativity, autonomy, and mental health promotion in order to support students' holistic development.

Theoretical developments in gifted education have significantly expanded the understanding of talent development during the last two decades. Traditional psychometric approaches focused primarily on intelligence testing and academic performance, whereas newer developmental paradigms emphasize dynamic interactions among environmental, social, emotional, and educational factors (Pereira, 2025; Reis et al., 2021). Talent management is therefore increasingly viewed as a systemic process involving identification, enrichment, acceleration, mentorship, differentiated instruction, emotional support, and opportunities for authentic creative productivity (Chen & Chen, 2020; Reis et al., 2021). Research has demonstrated that gifted students require educational environments that provide challenge, autonomy, flexibility, and meaningful engagement in order to fully realize their capacities (Jöstl et

al., 2023; Lee et al., 2021). Furthermore, scholars have argued that effective gifted education programs should intentionally cultivate students' social-emotional competencies, resilience, self-regulation, and sense of purpose because high cognitive abilities alone do not guarantee psychological adjustment or long-term success (Handa, 2022; Snyder & Khan, 2024). In this regard, positive psychology perspectives have gained considerable attention in gifted education research because they emphasize strengths-based approaches, psychological flourishing, and character development among gifted learners (Shaunessy-Dedrick & Suldo, 2024; Snyder & Khan, 2024). Studies have further shown that when educational systems fail to address the emotional and psychological needs of gifted students, many of these learners experience anxiety, perfectionism, underachievement, social isolation, and identity conflicts despite possessing exceptional cognitive capacities (Rinn, 2023; Watts, 2022).

Recent international research highlights the importance of culturally responsive and context-sensitive approaches to gifted education. Giftedness is increasingly recognized as a construct shaped by cultural expectations, social values, and educational traditions rather than as a universally fixed attribute (Mun et al., 2020; Zhu et al., 2023). Consequently, educational systems must design talent identification frameworks that account for cultural diversity, socioeconomic differences, linguistic backgrounds, and contextual variations in students' opportunities for talent expression (Byrd et al., 2025; Mohseni & Abedi, 2025). Comparative studies indicate that countries adopting flexible and decentralized approaches to gifted education often achieve more successful outcomes in promoting creativity, innovation, and psychological well-being among gifted learners (Opoku et al., 2024; Rutigliano & Quarshie, 2021). In many developed educational systems, gifted education policies have shifted toward differentiated instruction, collaborative learning, enrichment-based curricula, and student-centered pedagogies that prioritize individualized development pathways (Cheung et al., 2020; Shek et al., 2022). Such approaches recognize that gifted students differ substantially in their cognitive profiles, emotional characteristics, motivations, interests, and learning preferences. Consequently, contemporary gifted education emphasizes multidimensional assessment systems combining cognitive, behavioral, motivational, social, and creative indicators rather than relying exclusively on standardized intelligence measures (Austermann et al.,

2024; Opoku et al., 2024). This shift has also contributed to increased attention toward twice-exceptional students, culturally diverse gifted learners, and underrepresented populations whose talents may remain unidentified under conventional identification models (Austermann et al., 2024; Byrd et al., 2025).

Technological transformation has further altered the landscape of gifted education and talent development. Digital technologies, artificial intelligence, virtual learning platforms, and advanced instructional technologies have created new opportunities for personalized learning, adaptive enrichment, and collaborative creativity among gifted students (Drigas et al., 2022; Kontostavrou & Driga, 2023). Technology-enhanced learning environments enable gifted learners to access advanced educational resources, engage in self-directed inquiry, participate in global collaborative projects, and develop higher-order problem-solving skills beyond the limitations of traditional classrooms (Dimitriadou et al., 2024; Lewis, 2025). Research has shown that technology-based instructional models can significantly enhance gifted students' motivation, engagement, and creative productivity when integrated with differentiated pedagogical practices (Drigas et al., 2022; Kontostavrou & Driga, 2023). Simultaneously, the emergence of generative artificial intelligence has created new demands for teacher preparation and professional competencies in gifted education because educators must now support gifted students in navigating rapidly evolving technological and cognitive environments (Lewis, 2025). The growing integration of technology into gifted education therefore necessitates educational systems capable of balancing innovation, creativity, ethical responsibility, and psychological health within talent management frameworks.

Teacher competency represents another essential component of effective gifted education systems. Research consistently demonstrates that teachers play a decisive role in identifying, nurturing, and sustaining gifted students' talents through differentiated instruction, emotional support, and pedagogical flexibility (Akar, 2021; Weber & Mofield, 2023). However, many educational systems continue to face substantial challenges related to insufficient teacher preparation, limited professional development opportunities, and inadequate pedagogical content knowledge regarding gifted learners (Öntaş et al., 2023; Weber & Mofield, 2023). Teachers working with gifted students must possess specialized competencies enabling them to design enriched curricula, foster creativity, facilitate independent learning,

and support students' social-emotional development (Akar, 2021; Shaunessy-Dedrick & Lazarou, 2020). Moreover, educational leadership and institutional culture significantly influence the effectiveness of gifted education programs because school environments shape students' opportunities for talent expression, innovation, and collaboration (Caroleo & Hines, 2025; Gierczyk & Pfeiffer, 2021). Ecological perspectives on gifted education therefore emphasize the importance of supportive school climates, culturally responsive leadership, inclusive educational practices, and collaborative stakeholder engagement involving teachers, parents, psychologists, and policymakers (Caroleo & Hines, 2025; Mun et al., 2020).

Despite considerable international advances in gifted education, many countries continue to experience substantial structural, cultural, and policy-related challenges in implementing effective talent management systems. Research conducted across different educational contexts indicates persistent problems including overreliance on standardized testing, limited access to enrichment programs, inequitable identification procedures, insufficient psychological support services, and lack of integration between academic and emotional development (Christabell & Osaki, 2023; Lewis & Boswell, 2020). Rural and underserved regions often face additional difficulties associated with limited educational resources, teacher shortages, and restricted opportunities for advanced learning experiences (Lewis & Boswell, 2020; Miller & Brigandi, 2020). Comparative studies further demonstrate that educational systems emphasizing competition, memorization, and centralized curricula may inadvertently suppress creativity, autonomy, and socio-emotional development among gifted learners (Lee et al., 2021; Watts, 2022). Consequently, contemporary scholars increasingly advocate for multidimensional and health-oriented approaches that integrate academic excellence with emotional resilience, social responsibility, and psychological flourishing (Elias et al., 2024; Shaunessy-Dedrick & Suldo, 2024). These perspectives align with broader educational reforms emphasizing student well-being, inclusive education, collaborative learning, and lifelong talent development.

Within the Iranian educational context, gifted education has historically occupied a prominent position due to the establishment of specialized schools affiliated with the National Organization for Development of Exceptional Talents (SAMPAD). These institutions were designed to identify academically talented students and provide

accelerated educational opportunities aimed at fostering scientific achievement and academic excellence. Nevertheless, several challenges continue to affect the effectiveness of talent management within the Iranian educational system, including centralized instructional structures, excessive emphasis on examination performance, limited attention to creativity and emotional development, and insufficient integration of collaborative and student-centered pedagogies (Mohseni & Abedi, 2025). Existing identification procedures frequently prioritize cognitive and academic indicators while paying comparatively less attention to multidimensional abilities, social-emotional competencies, and culturally responsive educational practices. Furthermore, the increasing psychological pressures experienced by gifted students, including academic stress, perfectionism, social isolation, and competitive anxiety, have highlighted the necessity of adopting health-based and holistic approaches to talent identification and development (Rinn, 2023; Shaunessy-Dedrick & Suldo, 2024). Comparative examination of international gifted education systems therefore provides an important opportunity for identifying alternative models capable of enhancing the effectiveness, flexibility, and psychological sustainability of gifted education in Iran.

Canada represents one of the educational systems that has increasingly adopted multidimensional, inclusive, and student-centered approaches to gifted education and talent development. Canadian educational policies emphasize differentiated instruction, enrichment-based learning, collaborative educational environments, individualized educational pathways, and socio-emotional support services for gifted students (Cheung et al., 2020; Opoku et al., 2024). Gifted education programs in Canada frequently integrate acceleration, enrichment, mentorship, interdisciplinary learning, and technology-enhanced instruction while also recognizing the importance of diversity, inclusion, and student well-being (Dimitriadou et al., 2024; Pereira, 2025). Moreover, Canadian approaches increasingly emphasize participatory talent identification involving parents, teachers, psychologists, and students themselves as active contributors to educational planning and developmental decision-making (Elias et al., 2024; Zhu et al., 2023). These characteristics make Canada an appropriate comparative context for examining alternative strategies capable of informing the development of more comprehensive and health-oriented talent management models within the Iranian educational system.

Considering the growing importance of multidimensional gifted education, the increasing attention to students' psychological well-being, and the need for culturally responsive talent development systems, comparative investigation of talent management models can contribute significantly to educational policymaking and institutional reform. Despite extensive international literature on gifted education, relatively limited research has systematically compared the philosophical, structural, and operational dimensions of gifted education systems in Iran and Canada while simultaneously proposing a health-based conceptual framework for talent identification. Therefore, the present study aimed to compare the talent management model of gifted students in the educational systems of Iran and Canada and to present a health-based talent identification model.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study was conducted with a fundamental objective and employed a descriptive mixed-methods design integrating both qualitative and quantitative approaches. From the qualitative perspective, the study utilized comparative and content analysis methodologies to investigate the scientific, philosophical, and educational foundations of talent management and gifted education systems in Iran and Canada. Canada was purposefully selected as the comparative country because of its internationally recognized educational standards, advanced gifted education programs, multidimensional talent identification strategies, and emphasis on psychological well-being and individualized learning. The research environment consisted of educational systems, policies, regulations, scientific documents, educational practices, and talent identification frameworks related to gifted students in both countries. Purposeful sampling was used in the qualitative phase, and the selection of experts and documentary sources was based on their scientific expertise, practical experience, and academic contributions in the fields of gifted education, educational psychology, curriculum planning, educational management, and talent development. In total, 40 experts participated in the qualitative section of the study, including university professors, educational policymakers, school administrators, specialists in gifted education, and researchers in psychology and educational sciences from major Iranian universities and educational institutions. The participants represented diverse academic ranks including assistant professors, associate

professors, and full professors, and were selected from disciplines such as psychology, philosophy of education, educational management, and educational sciences to ensure theoretical diversity and analytical depth.

The quantitative phase of the research focused on validating the extracted dimensions and developing the final conceptual model of talent identification for gifted students. The statistical population in this phase included all gifted students studying in secondary schools affiliated with the National Organization for Development of Exceptional Talents (SAMPAD) in Tehran during the academic year of the study. Multi-stage cluster sampling was employed to select participants from different educational districts and schools. A total of 160 gifted students participated in the quantitative phase, including students from both lower secondary and upper secondary levels. Participants were selected proportionally from different educational grades and academic fields including mathematics, experimental sciences, humanities, arts, and technical-vocational disciplines. The sample included both male and female students in order to ensure representativeness across gender and educational categories. Inclusion criteria consisted of enrollment in gifted schools, willingness to participate in the study, and completion of all questionnaire items. Ethical considerations were fully observed throughout the study, including voluntary participation, confidentiality of responses, anonymity of participants, and informed consent from students and school authorities.

## 2.2. Data Collection Tools

Data collection in the qualitative phase was performed through document analysis, semi-structured expert interviews, and systematic content analysis of scientific texts, educational policies, regulations, and gifted education frameworks in Iran and Canada. The researchers reviewed educational laws, policy documents, curriculum frameworks, organizational reports, and scholarly publications related to talent identification and gifted education in both countries. Semi-structured interviews were conducted with experts in order to identify the major dimensions, categories, indicators, and conceptual foundations of gifted students' talent management. The interview protocol included open-ended questions regarding educational policies, identification methods, enrichment programs, teacher competencies, psychological support systems, multidimensional assessment procedures, and health-oriented educational practices. Interviews continued

until theoretical saturation was achieved. The obtained qualitative data were coded using open coding, axial coding, and selective coding procedures, and the extracted concepts were categorized into themes and dimensions associated with talent identification and management models.

The primary qualitative analysis resulted in the identification of nine major dimensions associated with talent management for gifted students, including multidimensional dynamics, independence-based enrichment, assessment and identification based on testing procedures, special educational facilities, specialized educational programs, competitive and olympiad activities, autonomy in talent identification, participatory talent identification, and talent monitoring systems. These dimensions were subsequently transformed into measurable questionnaire items for quantitative validation. Based on the findings of content analysis and expert consensus, a researcher-developed questionnaire consisting of 50 items was designed to assess the dimensions of the proposed talent management model. The items were developed using a five-point Likert scale ranging from strongly disagree to strongly agree. Content validity of the questionnaire was confirmed through expert review, and the wording of the items was revised based on feedback from specialists in gifted education and educational psychology. Construct validity was evaluated through exploratory factor analysis and confirmatory factor analysis. Reliability of the instrument was assessed using Cronbach's alpha coefficients, and all dimensions demonstrated acceptable internal consistency values above the recommended threshold. The Kaiser-Meyer-Olkin index and Bartlett's test of sphericity also confirmed the adequacy of the sample and the suitability of the data for factor analysis procedures.

## 2.3. Data Analysis

Qualitative data analysis was conducted using thematic content analysis and comparative analysis methods. Following the transcription and organization of interviews and documentary materials, coding procedures were performed systematically to extract conceptual categories and themes related to gifted education and talent management. Open coding was initially used to identify key concepts and meaningful statements, after which axial coding was applied to establish relationships among categories and subcategories. Finally, selective coding was employed to integrate the themes into a coherent conceptual framework representing the health-based talent

identification model. Comparative analysis was subsequently conducted to identify similarities and differences between the educational systems of Iran and Canada in terms of policies, instructional approaches, talent identification procedures, psychological support systems, and enrichment strategies for gifted students.

Quantitative data were analyzed using SPSS and AMOS statistical software packages. Descriptive statistics including means, standard deviations, frequencies, and percentages were calculated to summarize demographic characteristics and study variables. Prior to inferential analyses, the normality of data distribution was examined using the Kolmogorov–Smirnov test. The adequacy of the sample size for factor analysis was assessed through the Kaiser-Meyer-Olkin index and Bartlett’s test of sphericity. Exploratory factor analysis using principal component extraction and varimax rotation was conducted to identify the underlying factor structure of the proposed model. Subsequently, confirmatory factor analysis and second-order structural equation modeling were employed to evaluate the goodness-of-fit and construct validity of the final model. Model fit indices including Chi-square divided by degrees of freedom, Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA) were used to determine the adequacy of the conceptual framework. The findings demonstrated that the nine-factor model possessed satisfactory fit indices and explained a substantial proportion of variance associated with talent identification among gifted students. The final model was therefore validated as a comprehensive and health-oriented framework for talent

management and identification within the Iranian educational context.

### 3. Findings and Results

The demographic findings demonstrated that the study sample consisted of both gifted students and academic experts participating in the qualitative and quantitative phases of the research. In the qualitative phase, 40 experts from the fields of psychology, philosophy of education, educational management, and gifted education participated in the study. The mean age of the experts was 42.68 years with a standard deviation of 7.54 years, and their academic experience ranged from 5 to 28 years. The majority of experts were assistant professors and associate professors affiliated with major Iranian universities including Tehran University, Allameh Tabataba’i University, Tarbiat Modares University, Shiraz University, and Ferdowsi University of Mashhad. In the quantitative phase, 160 gifted students from SAMPAD secondary schools in Tehran participated in the study. Of these participants, 82 students were male and 78 were female. Students were selected from different academic grades and educational disciplines including mathematics, experimental sciences, humanities, arts, and technical-vocational fields. The distribution of participants across educational grades indicated that 20.00% were first-grade students, 25.00% second-grade students, and 55.00% third-grade students. The demographic diversity of the sample increased the generalizability and representativeness of the findings regarding talent management and gifted education models.

**Table 1**

*Qualitative Findings Related to the Scientific and Philosophical Foundations of Gifted Students’ Talent Management in Canada*

| Themes                                    | Categories                                   | Indicators  |
|---|--|---|
| Comprehensive Talent Identification       | Multidimensional Dynamics                    | Emphasis on social growth, higher-order thinking skills, creativity, multiple intelligences, and respect for diverse talents                        |
| Autonomy in Talent Identification         | Independence-Based Enrichment                | Self-learning programs, self-monitoring, self-control, emotional-social enrichment, self-esteem enhancement, personalized enrichment activities     |
| Comprehensive Talent Assessment           | Assessment and Identification Based on Tests | Performance tests, cognitive ability tests, motivational assessments, personality assessments, philosophical and psychological evaluations          |
| Educational Flexibility                   | Special Facilities                           | Academic acceleration, individualized education, enrichment through parental feedback, grade skipping, early graduation, early university admission |
| Restorative and Extracurricular Education | Special Educational Programs                 | Counseling workshops, free learning systems, enrichment education, compressed curriculum, creative games, technology-based instruction              |
| Competitive Development                   | Competitions and Olympiads                   | Local, national, and international competitions in sciences, arts, mathematics, sports, and languages   |
| Participatory Abilities                   | Autonomy in Talent Identification            | Independent educational planning by schools and provinces, collaborative projects among gifted students   |
| Collaborative Talent Development          | Participatory Talent Identification          | Cooperation among parents, teachers, specialists, and peers in talent identification processes  |
| Talent Monitoring Systems                 | Talent Monitoring                            | Specialized monitoring by teachers, parents, consultants, and peer groups, certification in gifted education specialization                         |

The qualitative findings revealed that the Canadian model of talent management for gifted students is grounded in multidimensional and health-oriented educational principles emphasizing individualized growth, psychological well-being, collaborative participation, and educational flexibility. Content analysis identified nine major categories and four overarching themes that collectively constituted the conceptual framework of the proposed health-based talent identification model. Among the identified categories, independence-based enrichment, multidimensional dynamics, and participatory talent identification emerged as the most frequently emphasized components in expert

interviews and documentary analyses. The findings further demonstrated that the Canadian educational system places substantial emphasis on emotional development, self-regulated learning, collaborative abilities, and flexible educational pathways for gifted students. In contrast, the Iranian system was characterized by centralized instructional approaches, standardized evaluation procedures, emphasis on academic competition, and limited attention to individualized learning differences. These findings provided the conceptual foundation for the development of the quantitative model and the final structural framework of the study.

**Table 2**

*Exploratory Factor Analysis of the Health-Based Talent Identification Model*

| Factors                             | Number of Items | Cronbach's Alpha | Factor Loading | Eigenvalue | Explained Variance (%) | Cumulative Variance (%) |
|-------------------------------------|-----------------|------------------|----------------|------------|------------------------|-------------------------|
| Independence-Based Enrichment       | 8               | 0.72             | 0.66           | 4.31       | 11.90                  | 11.90                   |
| Autonomy in Talent Identification   | 7               | 0.71             | 0.69           | 3.87       | 10.44                  | 22.34                   |
| Assessment Based on Testing         | 6               | 0.82             | 0.74           | 3.25       | 9.28                   | 31.62                   |
| Special Educational Facilities      | 6               | 0.83             | 0.77           | 2.96       | 8.84                   | 40.46                   |
| Special Educational Programs        | 7               | 0.87             | 0.81           | 2.71       | 7.92                   | 48.38                   |
| Competitions and Olympiads          | 5               | 0.89             | 0.84           | 2.43       | 6.88                   | 55.26                   |
| Autonomy in Talent Recognition      | 5               | 0.83             | 0.82           | 2.18       | 6.11                   | 61.37                   |
| Participatory Talent Identification | 3               | 0.91             | 0.86           | 1.94       | 5.42                   | 66.79                   |
| Talent Monitoring Systems           | 3               | 0.81             | 0.79           | 1.68       | 5.73                   | 72.52                   |

The results of exploratory factor analysis demonstrated that the proposed health-based talent identification model consisted of nine distinct but interrelated factors explaining 72.52% of the total variance. Prior to factor extraction, the Kaiser-Meyer-Olkin index was calculated at 0.86, indicating excellent sampling adequacy, and Bartlett's test of sphericity was statistically significant ( $\chi^2 = 7819.31, p < 0.001$ ), confirming the appropriateness of the data for factor analysis. Among the extracted dimensions, independence-based enrichment exhibited the highest explained variance,

followed by autonomy in talent identification and assessment based on testing procedures. Reliability analyses showed satisfactory internal consistency for all dimensions, with Cronbach's alpha coefficients ranging from 0.71 to 0.91. The factor loadings for all items exceeded the acceptable threshold of 0.40, indicating strong relationships between observed indicators and latent constructs. These findings supported the multidimensional structure of the proposed talent management model and confirmed the validity of the extracted conceptual dimensions.

**Table 3**

*Model Fit Indices for the Structural Equation Model of Talent Management*

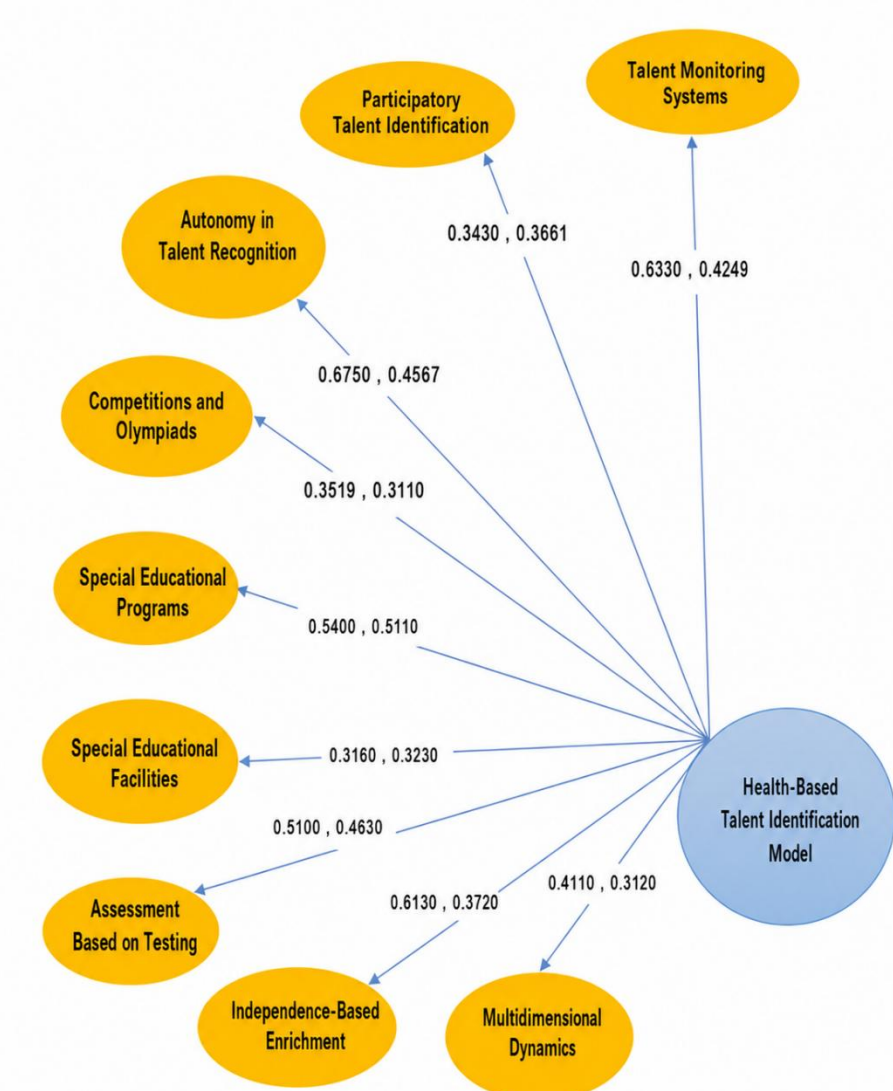
| Fit Index   | Obtained Value | Acceptable Threshold | Interpretation |
|-------------|----------------|----------------------|----------------|
| $\chi^2/df$ | 2.51           | < 3.00               | Acceptable     |
| RMSEA       | 0.028          | < 0.08               | Excellent      |
| CFI         | 0.97           | > 0.90               | Excellent      |
| GFI         | 0.95           | > 0.90               | Excellent      |
| AGFI        | 0.92           | > 0.90               | Excellent      |
| NFI         | 0.94           | > 0.90               | Excellent      |
| IFI         | 0.96           | > 0.90               | Excellent      |

The findings of confirmatory factor analysis and structural equation modeling indicated that the proposed nine-factor model demonstrated an excellent fit with the observed data. The ratio of chi-square to degrees of freedom was 2.51, which was below the recommended threshold and indicated acceptable model fit. Furthermore, the RMSEA value of 0.028 demonstrated a highly satisfactory approximation of the model to the population covariance matrix. Incremental and absolute fit indices including CFI, GFI, AGFI, NFI, and IFI all exceeded 0.90, confirming the structural validity and conceptual coherence of the proposed framework. Among the latent dimensions, autonomy in

talent recognition demonstrated the highest standardized factor loading (0.86), followed by talent monitoring systems (0.83) and independence-based enrichment (0.81). Participatory talent identification and special educational programs also exhibited strong direct effects on the higher-order construct of health-based talent management. Overall, the quantitative findings confirmed that the proposed model provides a comprehensive, multidimensional, and empirically supported framework for identifying and developing gifted students within educational systems emphasizing psychological health, individualized growth, and collaborative educational practices.

**Figure 1**

*Final Model of the Study*



#### 4. Discussion and Conclusion

The present study aimed to compare the talent management model of gifted students in the educational systems of Iran and Canada and to develop a health-based talent identification model grounded in multidimensional educational principles. The findings demonstrated that the proposed model consisted of nine major dimensions, including multidimensional dynamics, independence-based enrichment, assessment and identification based on testing, special educational facilities, special educational programs, competitions and olympiads, autonomy in talent recognition, participatory talent identification, and talent monitoring systems. The quantitative results further showed that these dimensions explained a substantial proportion of the variance associated with gifted students' talent management and demonstrated strong structural validity through exploratory and confirmatory factor analyses. Among the extracted dimensions, autonomy in talent recognition, talent monitoring systems, and independence-based enrichment exhibited the highest factor loadings, indicating that student-centered educational flexibility and collaborative developmental monitoring play decisive roles in effective talent development. These findings support contemporary perspectives emphasizing that giftedness should be understood as a dynamic and multidimensional construct rather than a static cognitive trait measured solely through intelligence testing (Maker et al., 2023; Pereira, 2025; Reis et al., 2021). The results also align with the view that successful talent development systems are those capable of integrating cognitive, emotional, social, and motivational dimensions within flexible educational structures (Rinn, 2023; Shaunessy-Dedrick & Suldo, 2024).

One of the most important findings of the study was the central role of independence-based enrichment and autonomy in talent identification within the Canadian model of gifted education. The qualitative analysis showed that the Canadian educational system emphasizes self-directed learning, student participation in educational planning, enrichment through individualized pathways, and opportunities for independent intellectual exploration. Such findings are highly consistent with previous research suggesting that gifted students demonstrate greater academic engagement, creativity, and psychological well-being when educational systems provide autonomy-supportive environments and flexible instructional opportunities (Jöstl et al., 2023; Lee et al., 2021). Research has repeatedly

demonstrated that enrichment-oriented models promote higher-order thinking, intrinsic motivation, and creative productivity among gifted learners because they encourage students to engage with authentic problems and interdisciplinary learning experiences (Chen & Chen, 2020; Reis et al., 2021). Furthermore, the emphasis on self-regulation and independent learning observed in the Canadian system supports findings reported by Handa regarding the importance of purpose-driven educational environments that cultivate wisdom, meaning, and self-awareness among talented students (Handa, 2022). These educational approaches appear particularly important in the context of contemporary societies where innovation, adaptability, and lifelong learning have become essential competencies.

The findings also revealed that participatory talent identification and talent monitoring systems constituted major dimensions of the proposed health-based model. Unlike traditional identification systems that rely primarily on standardized examinations, the Canadian framework incorporated collaborative evaluations involving parents, teachers, psychologists, peers, and students themselves. This multidimensional identification approach reflects recent international shifts toward culturally responsive and context-sensitive models of giftedness (Byrd et al., 2025; Zhu et al., 2023). Previous studies have emphasized that overreliance on psychometric testing frequently leads to underidentification of students from diverse cultural, linguistic, or socioeconomic backgrounds (Mun et al., 2020; Rutigliano & Quarshie, 2021). The present findings therefore reinforce arguments advocating for comprehensive assessment systems capable of identifying multiple forms of talent expression across academic, artistic, emotional, and social domains. Furthermore, collaborative monitoring systems appear to strengthen continuity in talent development because they establish ongoing communication among educational stakeholders and facilitate timely psychological and educational support. Such findings correspond closely with ecological perspectives emphasizing that giftedness develops through interactions among individuals, families, schools, and broader social systems (Caroleo & Hines, 2025; Gierczyk & Pfeiffer, 2021).

Another important finding concerned the integration of social-emotional development within the Canadian model of gifted education. The qualitative findings showed that educational enrichment was not restricted to academic acceleration but also included emotional-social support, self-

esteem enhancement, collaborative interaction, and psychological counseling. This finding strongly supports contemporary literature emphasizing that gifted students' social-emotional competencies must be intentionally cultivated rather than assumed to emerge naturally from intellectual ability (Elias et al., 2024; Shaunessy-Dedrick & Suldo, 2024). Previous studies have consistently demonstrated that gifted students often experience perfectionism, social anxiety, identity conflicts, emotional sensitivity, and psychological stress when educational systems focus exclusively on academic achievement (Rinn, 2023; Watts, 2022). Consequently, health-oriented educational models emphasizing emotional resilience, positive relationships, and psychological flourishing are increasingly viewed as essential components of effective gifted education programs. The findings of the present study therefore suggest that Iranian gifted education policies may benefit substantially from integrating systematic social-emotional learning programs and mental health services within specialized schools.

The results related to special educational facilities and differentiated instructional practices further demonstrated the importance of educational flexibility in talent development. The Canadian model emphasized acceleration opportunities, individualized curricula, early university admission, flexible learning schedules, and enrichment through project-based instruction. These findings align with international research indicating that differentiated instruction represents one of the strongest predictors of academic satisfaction and talent realization among gifted students (Cheung et al., 2020; Opoku et al., 2024). Similarly, studies on enrichment pedagogy have shown that flexible educational structures allow gifted students to progress according to their readiness levels, interests, and cognitive capacities while reducing boredom and underachievement (Chen & Chen, 2020; Reis et al., 2021). The findings also correspond with studies emphasizing the importance of creative classroom environments and authentic problem-solving opportunities for enhancing gifted students' innovation and engagement (Lee et al., 2021; Maker et al., 2023). In contrast, the Iranian educational system was found to rely heavily on centralized curricula, examination-oriented instruction, and standardized learning experiences that may limit opportunities for individualized talent development. Such findings are consistent with critiques suggesting that rigid educational systems often suppress creativity, autonomy, and collaborative learning among gifted students (Mohseni & Abedi, 2025; Watts, 2022).

Technology integration also emerged as a significant component of contemporary talent management systems. The Canadian model emphasized technology-enhanced learning, digital enrichment programs, and innovative instructional methods supporting personalized education. These findings support previous research indicating that digital technologies and artificial intelligence can substantially improve gifted students' opportunities for advanced learning, independent inquiry, and interdisciplinary collaboration (Drigas et al., 2022; Kontostavlou & Driga, 2023). Technology-based educational environments appear particularly beneficial for gifted learners because they facilitate access to advanced academic content, adaptive learning systems, and global intellectual networks. Moreover, recent research suggests that emerging technologies such as generative artificial intelligence require educational systems to redesign teacher preparation and curriculum structures in order to support future-oriented competencies among gifted students (Lewis, 2025). Therefore, the present findings highlight the necessity of integrating advanced technological infrastructures within talent development policies while simultaneously ensuring ethical guidance and psychological support.

The role of teachers and educational leadership constituted another major implication of the study findings. The results indicated that successful talent management systems depend heavily on teachers' professional competencies, pedagogical flexibility, and understanding of gifted students' cognitive and emotional characteristics. These findings align closely with previous studies emphasizing that many educational systems fail to adequately prepare teachers for gifted education responsibilities (Akar, 2021; Weber & Mofield, 2023). Gifted students require educators capable of implementing differentiated instruction, facilitating creative problem solving, supporting emotional development, and encouraging independent inquiry. Similarly, leadership practices emphasizing inclusion, collaboration, and culturally responsive pedagogy appear to strengthen the effectiveness of talent development programs (Caroleo & Hines, 2025; Mun et al., 2020). The findings therefore suggest that improving teacher training and professional development programs should constitute a central priority within Iranian gifted education reform efforts. Furthermore, the integration of school psychologists, counselors, and educational specialists may significantly enhance the quality of support provided to gifted students in specialized educational settings (Shaunessy-Dedrick & Lazarou, 2020).

The findings also demonstrated the importance of cultural responsiveness within talent identification systems. Comparative analysis revealed that the Canadian framework recognized diverse forms of giftedness and attempted to provide inclusive opportunities for students from different backgrounds. Such findings correspond with recent international scholarship emphasizing that cultural values shape both the expression and recognition of giftedness (Byrd et al., 2025; Zhu et al., 2023). Educational systems that fail to account for cultural diversity risk excluding substantial numbers of talented students whose abilities may not conform to traditional academic standards. In the Iranian context, cultural expectations, centralized educational structures, and examination-oriented traditions may contribute to narrow conceptualizations of giftedness focused primarily on academic performance. Therefore, adopting culturally inclusive and multidimensional identification frameworks could significantly improve the fairness and effectiveness of talent management systems within Iranian schools (Mohseni & Abedi, 2025; Rutigliano & Quarshie, 2021).

Overall, the findings of the present study indicate that effective talent management for gifted students requires multidimensional, flexible, and health-oriented educational systems integrating cognitive development with emotional well-being, creativity, collaboration, and cultural responsiveness. The proposed health-based model demonstrated strong empirical validity and provides a comprehensive framework capable of informing educational policymaking and institutional reform. The comparative findings further suggest that movement from centralized, examination-driven systems toward student-centered and enrichment-based educational approaches may substantially improve the quality of gifted education in Iran. Such transformation requires coordinated efforts involving policymakers, school leaders, teachers, psychologists, parents, and students themselves in order to create educational environments capable of nurturing diverse talents while simultaneously promoting psychological health and lifelong development (Elias et al., 2024; Pereira, 2025; Reis et al., 2021).

One limitation of the present study was that the quantitative sample was restricted to gifted students studying in SAMPAD schools in Tehran, which may limit the generalizability of the findings to other regions or educational contexts within Iran. In addition, the study relied primarily on self-report questionnaires and expert evaluations, which may have been influenced by subjective

perceptions and response biases. Another limitation involved the comparative nature of the research, as differences in educational structures, cultural contexts, and policy frameworks between Iran and Canada may have affected direct comparisons. Time and accessibility constraints also limited the inclusion of a broader range of international educational systems that could have enriched the comparative analysis.

Future research should investigate the applicability of the proposed health-based talent identification model across different provinces, educational levels, and cultural contexts in Iran. Longitudinal studies examining the long-term educational, psychological, and professional outcomes of gifted students educated under multidimensional talent management systems are also recommended. Additional research could explore the effectiveness of technology-enhanced enrichment programs, artificial intelligence applications, and social-emotional interventions in gifted education. Comparative investigations involving other successful educational systems may further contribute to the refinement of culturally responsive and evidence-based models of talent development.

Educational policymakers and school administrators should prioritize the transition from centralized and examination-oriented gifted education systems toward multidimensional, student-centered, and health-oriented approaches. Schools should strengthen differentiated instruction, enrichment opportunities, psychological counseling services, and collaborative learning environments for gifted students. Teacher training programs should include specialized coursework related to gifted education, creativity development, emotional support, and technology integration. Greater cooperation among schools, families, psychologists, and educational specialists may also improve the effectiveness of talent identification and developmental monitoring processes. Finally, educational systems should emphasize the cultivation of creativity, resilience, autonomy, and social responsibility alongside academic excellence in order to support the holistic development of gifted learners.

### Authors' Contributions

Authors equally contributed to this article.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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