

Reality of Graduates of Gifted and Talented Programs in Jordan: A Cross-Sectional Mixed-Methods Study

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ABSTRACT:

This study examines the academic, career, and social trajectories of Jordanian graduates of gifted and talented programs (2010–2019), with particular emphasis on life satisfaction and post-program outcomes. An explanatory sequential mixed methods design was employed. A total of 372 participants completed an electronic questionnaire integrating quantitative and qualitative components. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were examined through thematic analysis supported by MAXQDA. Findings reveal strong academic attainment, with 82.4% of participants holding bachelor's degrees, primarily in medical and engineering disciplines, and demonstrating high levels of labor market integration. Personal and organizational skills were identified as the strongest predictors of academic and career outcomes. Civic engagement remained limited (33.1%), while life satisfaction was reported at a moderate level. Transition barriers were also moderate, predominantly linked to institutional factors such as insufficient career guidance and weak support networks. Qualitative analysis identified four interrelated themes: educational experiences, developmental gaps, systemic constraints, and outcomes. Although gifted programs effectively support individual development, the translation of this potential into long-term outcomes is influenced by structural and contextual constraints. Strengthening career guidance, integrating social and leadership development, and enhancing institutional–labor market linkages are essential to sustain talent development.

Keywords: Gifted programs, mixed methods, professional trajectories, life satisfaction, civic participation, Jubilee Schools

1. Introduction

Quality education improves not only personal happiness but also societal productivity and thus is an essential pillar of sustainable development

(Becker, 1964). Gifted children have become one of the top priorities in developing a strategy for adaptation and competitiveness (Rababeh, 2021).

The rationale behind gifted education is that some individuals have proven to be outstanding performers or have potential in various domains, such as learning, creativity, and leadership, thus necessitating an advanced educational system addressing their psychological and intellectual demands (Renzulli, 2012). Talent can be described as a dynamic process of development, which occurs due to constant interaction between people and the environment (Subotnik et al., 2011; Gagné, 2004).

However, the gifted population features great diversity, and high potential may not be equal to high achievement outcomes (Neihart et al., 2002). Results depend on the combination of individual features, education, and context; thus, a holistic approach to development is important (Renzulli, 2016; Sternberg & Davidson, 2005). Recent approaches include the definition of talent as an ability to achieve objectives in a socio-cultural environment using analytical, creative, and practical skills (Sternberg, 2020). Such definitions call for complex assessments of giftedness combining various criteria and both quantitative and qualitative measures (Pfeiffer, 2015; Renzulli, 2012).

In this global context, gifted education programs have been developed in Jordan as a part of the overall development strategy focused on the cultivation of creative potential of its citizens (Rababeh, 2021). The creation of gifted education programs was initiated in the first half of the 1980s; later, enrichment centers were established as well as the Jubilee School, where a special curriculum for talented students has been implemented, involving rigorous education in combination with research opportunities and leadership training (Al-Shobaki, 2007; Jarawan, 2025). Further development of gifted education was reflected in public programs, which included creation of gifted resource rooms, and King Abdullah II Schools of Excellence, implying selection of students based on their potential and comprehensive evaluations (Al-Shobaki, 2007; Al-Hroub, 2023).

Longitudinal studies have shown that gifted education not only impacts academic success (Lubinski, 2016; Subotnik et al., 2011; Wai et al., 2022). Gifted education programs are linked with more rapid academic progress and cognitive

functioning (Tran et al., 2021; Gül & Ayık, 2025), whereas structured gifted education facilitates critical thinking skills and research competence development (Feng et al., 2005). Acceleration has not been shown to negatively affect social or psychological development (Swiatek & Benbow, 1991), while graduates are expected to be oriented toward STEM disciplines, depending on their education and job markets (Booij et al., 2016; Lavy & Goldstein, 2023).

At the same time, outcomes are also dependent on contextual and structural issues. Availability of an enriched environment and skilled teachers fosters positive outcomes for students' development (Backes et al., 2021), although structural inequalities persist and affect the prospects for individuals (Wai & Allen, 2019). In addition, qualitative evidence suggests that success results from a combination of high levels of cognitive development and persistence, as well as a focus on cognitive rather than socio-emotional development (Freeman, 2006; Gül & Ayık, 2025).

In terms of national-level data, limited studies have been conducted on this topic. However, some researchers point out that university success is more predictive of career success compared to secondary school results, which was demonstrated for the case of gifted graduates in Jordan (Hajjat, 2017). In addition, there is evidence that life satisfaction levels among gifted students in Jordan are usually rather high without significant differences based on various demographic characteristics (Katanani, 2020). The presented research findings fit the general trend associated with the focus on the importance of giftedness-related programs in shaping educational identity (Lavy & Goldstein, 2023).

Purpose of the Study

These gifted programs aim to nurture creative and productive citizens who can tackle real-life challenges and contribute to the creation and advancement of knowledge and communities (Renzulli, 2012). The goal is consistent with the strategic orientation of the Jordanian education system, wherein talent nurturing is achieved via diversified programs that increase contributions to

the country's development process (Al-Hroub, 2023).

This research paper attempts to explore the real experiences of graduates from gifted and talented programs in Jordan, focusing on graduates from King Abdullah II Schools for Excellence (KAIISE) and Jubilee School (JS) who graduated between 2010 and 2019. The research paper provides a comprehensive examination of the effects that gifted education programs have on graduates' lives.

Questions

The study addressed the following research questions using an integrative quantitative and qualitative approach:

Quantitative Questions

1. What are the academic and career outcomes, and the levels of civic and community participation, among graduates of KAIISE and the JS for the Gifted?
2. What is the impact of educational experiences on graduates' academic, professional, and social outcomes?
3. What are the most influential obstacles affecting participants' transition beyond high school?
4. What is the overall level of life satisfaction among graduates of gifted and talented programs?
5. Are there statistically significant differences in academic and career outcomes, civic and community participation, and life satisfaction attributable to program type (KAIISE vs. JS)?

Qualitative Questions

6. How have experiences in gifted and talented programs influenced participants' future choices?

7. What achievements do participants attribute to their experiences in gifted and talented programs?

8. What recommendations do participants propose for the development of gifted and talented programs?

2. Methodology

Research Design,

Explanatory Sequential Mixed Method Design was used for this research, where data collection and analysis were done quantitatively in the first stage and then qualitatively. Quantitative data was acquired through a structured survey that was conducted on the graduates of gifted and talented programs, concerning their academic and career progressions, civic and social involvement, and overall well-being. Qualitative data was collected through open-ended questions to understand the participants' learning experience. The explanatory sequential mixed method design, with a stronger focus on the quantitative portion, helped analyze both results and experiences together (Creswell & Plano Clark, 2018).

Sampling and Participants

The research sample included KAIISE and JS graduates from 2010 to 2019, totaling to 4,720 people according to the records held by the Ministry of Education and institutions' data. After obtaining administrative approval, 490 graduates were contacted using an online survey, and 372 responses were obtained. The instrument was tested on a sample of 50 participants before data collection. In the final sample (n=372), there was a nearly equal distribution of the gender composition with a marginal majority of females. There was a similar distribution among institutions, with almost equal representation in KAIISE and more females in JS (Tables 1 and 2).

Table 1. Cross-Tabulation of School and Gender for the Pilot Study Sample (N = 50)

School	Male n	Male Row %	Male Column %	Female n	Female Row %	Female Column %	Total n
King Abdullah II Schools for Excellence	15	46.9	60.0	17	53.1	68.0	32
Jubilee School	10	55.6	40.0	8	44.4	32.0	18
Total	25	50.0	100.0	25	50.0	100.0	50

Table 2. Cross-Tabulation of School and Gender for the Pilot Study Sample (N = 372)

School	Male n	Male %	Row %	Male %	Column %	Female n	Female %	Row %	Female %	Column %	Total n
King Abdullah School	127	50.4		71.8		125	49.6		64.1		252
Jubilee School	50	41.7		28.2		70	58.3		35.9		120
Total	177	47.6		100.0		195	52.4		100.0		372

Instrumentation

A questionnaire was developed from pertinent literature regarding gifted and talented students (Renzulli & Reis, 1997; Lent et al., 2000; P21, 2009) and the Satisfaction with Life Scale (Diener et al., 1985). Closed-ended as well as open-ended questions were used for collecting quantitative and qualitative data respectively (Tombs & Strange, 2024). The first part was used to provide details regarding the study as well as obtaining consent. The second part consisted of demographic data of participants. Parts three through five covered topics including education and career paths, job satisfaction, civic/social participation, and leadership experience. Part six assessed three key areas that included 19, 8, and 5 items relating to educational experience, transitional barriers, and life satisfaction. Each item was rated using a five-point Likert scale.

Validity and reliability

Various statistical tests were employed to ensure validity and reliability. Eight expert reviewers were used to assess the face validity of the items, evaluating their relevance, clarity, and congruence with the research objectives (Allen et al., 2023). Changes were made based on their suggestions.

The construct validity was analyzed using exploratory factor analysis. Factor loadings for educational experience items ranged from 0.486 to 0.882, with item–total correlations between 0.565 and 0.898. For transition barriers, loadings ranged from 0.658 to 0.742 and correlations from 0.612 to 0.689. Life satisfaction items showed loadings between 0.721 and 0.835 and correlations between 0.698 and 0.859.

Internal consistency was assessed using Cronbach's alpha. Coefficients were 0.972 for educational experiences, 0.824 for transition barriers, and 0.846 for life satisfaction. Tables 3 and 4 present detailed construct validity and reliability results.

Table 3. Construct Validity and Item–Total Correlations for the Study Instrument (Pilot Sample, n = 50)

Subdomain / Dimension	Item	Description	Factor Loading	Item–Total Correlation
Educational Experience Outcomes – Cognitive and Research Skills	exp1	Critical thinking, analysis, and scientific reasoning	.517	.874
	exp2	Scientific research and academic writing	.868	.565
	exp3	Solving complex problems	.568	.830
	exp5	In-depth engagement with scientific and technological fields	.636	.831
	exp6	Designing scientific and research projects	.674	.809
	exp15	Readiness for scientific research at the undergraduate and graduate levels	.486	.756
Educational Experience Outcomes – Leadership and Community Skills	exp7	Educational technology skills	.659	.880
	exp8	Entrepreneurship and the development of student initiatives	.683	.837
	exp17	Participation in community initiatives	.854	.838
	exp18	Sense of responsibility toward community service	.786	.798
	exp19	Participation in volunteer work after graduation	.823	.735
Educational Experience Outcomes – Personal, Organizational, and Technological Skills	exp4	Self-directed learning and self-discipline	.756	.824
	exp9	Leadership and teamwork	.702	.891
	exp10	Self-confidence and personal identity development	.785	.878
	exp11	Time management and organization of effort	.882	.775
	exp12	Communication, presentation, and public speaking skills	.756	.898
	exp13	Academic and career orientation	.599	.836
	exp14	Ability to enrol in competitive university majors	.659	.827
	exp16	Proficiency in using technology tools and digital learning	.597	.860
Transition Barriers	Bar1	Financial challenges	.742	.681
	Bar2	Availability of academic advising	.691	.645
	Bar3	Family support and encouragement	.658	.612

Subdomain / Dimension	Item	Description	Factor Loading	Item–Total Correlation
	Bar4	Access to information about scholarships or job opportunities	.716	.667
	Bar5	Personal motivation and self-efficacy	.703	.651
	Bar6	Institutional or community support	.734	.689
	Bar7	Difficulty matching personal interests with university majors	.676	.628
	Bar8	Availability of supportive social or professional networks	.719	.662
Life Satisfaction	LifeSat 1	My life is close to the ideal I desire in most aspects	.814	.859
	LifeSat 2	My life circumstances are excellent	.768	.752
	LifeSat 3	I am satisfied with my life overall	.835	.849
	LifeSat 4	So far, I have obtained the important things I wanted in life	.801	.838
	LifeSat 5	If I could live my life again, I would not change anything significant	.721	.698

Note. Factor loadings were obtained using exploratory factor analysis with varimax rotation. The item total correlation represents Pearson correlations between each item and the total score of its dimension

Table 4. Internal Consistency Reliability of the Study Instrument (Pilot Sample, n = 50)

Dimension	Cronbach's Alpha	Number of Items
Educational Experiential Outcomes	.972	19
Transition Barriers	.824	8
Life Satisfaction	.846	5

Procedures

The questionnaire was distributed electronically via Google Forms. There were follow-ups made to improve the response rate. There was a total of 372 questionnaires analysed using quantitative techniques, while there were 57 questionnaires that underwent qualitative analysis. The sample size is larger than what is considered to be the minimum required by Krejcie and Morgan (1970).

Statistical Measures

IBM SPSS software was utilized for the statistical data analyses. The use of descriptive statistics, such as mean, SD, frequency, and percentage, was employed to present the participants' features and answers to the questions. In order to conduct inferential analysis, Pearson correlation and independent samples t-test were performed.

Qualitative Analysis

Qualitative data collected from respondents' answers to open-ended questions were analysed to supplement the results obtained from the quantitative analysis using an explanatory sequential mixed-methods research design (Creswell & Plano Clark, 2018). The qualitative data were coded and categorized using MAXQDA software.

3. Results

Findings from both quantitative and qualitative perspectives will be presented on topics related to academic/career paths, civic engagement, happiness and satisfaction with life, educational experience/outcome relationship, transition obstacles, and differences among programs.

Table 5. Educational and Academic Profile of the participants N 372

Variable	Category	n	%
Educational Attainment	Diploma	18	5.0
	Bachelor's	294	82.4
	Master's	39	10.9
	Doctorate	6	1.7
GPA Classification	Pass	6	1.7
	Good	117	32.8
	Very Good	174	48.7
	Excellent	60	16.8
University Type	Public	294	82.4
	Private	45	10.9
	Outside Jordan	18	6.7
Scholarship Status	Yes	159	44.5
	No	198	55.5
Current Status	Graduated	321	86.3
	Currently Studying	27	7.3
	Did Not Complete	9	2.4
	Did Not Enroll in Higher Education	15	4.0
Total		372	100.0

Most of the sample population had attained a bachelor's degree, and most of them had graduated from universities (Table 5). The specialization was in medical and engineering disciplines (Table 6).

Table 6. Distribution of Academic Specialization by Field (n=357)

Academic Field	Frequency	(%)
Medical and Health Sciences	159	44.5%
Engineering and Technology	95	26.6%
Business, Economics, and Law	36	10.1%
Humanities and Social Sciences	32	9.0%
Natural and Applied Sciences	16	4.5%
Information Technology and Design	12	3.4%
Education	7	2.0%
Total	357	100%

Note. The remaining participants ($n = 15$) did not enroll in higher education

Table 7. Employment Status and Job Characteristics of Graduates (N = 372)

Variable	Category	n	% (Valid)
Employment Status	Employed	291	78.2
	Unemployed	81	21.8
Work Location	Inside Jordan	240	82.5
	Outside Jordan	51	17.5
Field of Work	Medicine and Health Science	120	41.2
	Other Careers (Education, Law, Military, or Public Security...)	96	33.0
	STEM	57	19.6
	Economy, Research, Innovation, and Entrepreneurship	18	6.2
Work Sector	Private	144	49.5
	Government	114	39.2
	Other	33	11.3
Job–Major Match	High (4–5)	195	67.1
	Low–Moderate (1–3)	96	32.9
Monthly Income	500–1000	198	68.0
	Above 1000	93	32.0
Job Satisfaction	High (4–5)	156	53.7
	Low–Moderate (1–3)	135	46.3

Most participants were employed, primarily within Jordan, with a high level of alignment between academic specialization and field of work (Table 7).

Table 8. Levels and Patterns of Civil Participation, Activity Types, and Leadership Roles Among

Dimension	Category	n	%
Participation in Civil Activities	Yes	123	33.1
	No	249	66.9
Type of Activity	Volunteering	51	41.6
	Professional Membership	3	2.43
	Community Initiative	3	2.43
	Student Movement	3	2.43
	International Organization	6	4.87
	Multiple Activities (1–5)	57	46.34
Regularity of Participation (<i>Participants only, n=123</i>)	Low (1–2)	75	61.0
	Moderate (3)	27	22.0
	High (4–5)	21	17.0
Leadership Roles (<i>Participants only, n=123</i>)	Yes	60	48.8
	No	63	51.2

Participants' n=372

Participation in civic activities was reported by a minority of participants, with generally low regularity among those involved (Table 8).

Table 9. ANOVA Results for Educational Experience Domains across Academic Fields and Career Categories

Educational Experience Domain	Category Type	Field	n	Mean	SD	F	p	η^2
Overall Outcomes	Study	Engineering & Technology	84	3.20	0.75	12.85	.000	.12
	Study	Medicine & Health Sciences	102	3.10	0.80			
	Study	Business & Economics	30	2.85	0.85			
	Study	Humanities & Social Sciences	75	2.60	0.90			
	Study	Other / Unspecified	66	2.70	0.88			
	Work	STEM	57	3.16	0.65	16.39	.000	.146

Cognitive & Research Skills	Work	Medicine & Health	120	2.98	0.79			
	Work	Economy & Entrepreneurship	18	2.87	0.71			
	Work	Other Careers	96	2.34	0.91			
	Study	Engineering & Technology	84	3.15	0.78	14.20	.000	.13
	Study	Medicine & Health Sciences	102	3.05	0.80			
	Study	Business & Economics	30	2.70	0.83			
	Study	Humanities & Social Sciences	75	2.55	0.88			
	Study	Other / Unspecified	66	2.65	0.85			
	Work	STEM	57	3.02	0.72	11.85	.000	.110
	Work	Medicine & Health	120	2.79	0.82			
Leadership & Community Skills	Work	Economy & Entrepreneurship	18	2.78	0.52			
	Work	Other Careers	96	2.26	0.96			
	Study	Engineering & Technology	84	3.05	0.90	9.75	.000	.09
	Study	Medicine & Health Sciences	102	2.95	0.92			
	Study	Business & Economics	30	2.70	0.95			
	Study	Humanities & Social Sciences	75	2.60	0.98			
	Study	Other / Unspecified	66	2.65	0.96			
	Work	STEM	57	2.93	0.95	8.46	.000	.081
	Work	Medicine & Health	120	2.78	0.95			
	Work	Economy & Entrepreneurship	18	2.70	0.95			
Personal, Organizational & Technological Skills	Work	Other Careers	96	2.23	0.99			
	Study	Engineering & Technology	84	3.40	0.70	18.60	.000	.17
	Study	Medicine & Health Sciences	102	3.30	0.75			
	Study	Business & Economics	30	3.00	0.80			

Study	Humanities & Social Sciences	75	2.80	0.90			
Study	Other Unspecified	/ 66	2.90	0.88			
Work	STEM	57	3.42	0.52	22.26	.000	.189

Statistically significant differences were observed across academic fields and work categories for all educational experience domains (Table 9).

Table 10. Impact of the Educational Experience on the Field of Study and Work

Predictor	B	Exp(B)	Sig.	Interpretation
Overall Outcomes	0.42	1.52	.02	Positive effect
Cognitive & Research Skills	0.38	1.46	.03	Moderate effect
Leadership & Community Skills	0.12	1.13	.12	Not significant
Personal, Organizational & Technological Skills	0.75	2.11	.000	Strongest predictor

Educational experience variables showed statistically significant effects for overall outcomes, cognitive skills, and personal/organizational skills, while leadership skills were not significant (Table 10).

Table 11. Barriers of Transition to Post-Secondary School as Perceived by the Participants

Rank	Barrier	Mean	SD	Level
1	DIF6	3.24	1.02	High
2	DIF8	3.16	1.00	High
3	DIF7	3.13	1.02	High
4	DIF4	3.08	0.96	Moderate
5	DIF2	3.04	0.87	Moderate
6	DIF5	2.74	1.02	Moderate
7	DIF3	2.72	1.05	Moderate
8	DIF1	2.64	0.89	Moderate
Overall Barriers	—	2.97	0.66	Moderate

Transition barriers were reported at a moderate level overall (Table 11).

Table 12. Descriptive Statistics and Pearson Correlation between Educational Experience Dimensions and Life Satisfaction

Variable	Mean	SD	Correlation with Life Satisfaction (r)	Sig.	Effect Strength
Life Satisfaction (Overall)	3.00	0.80	—	—	—
Educational Experience (Total)	—	—	.607**	.000	Strong
Cognitive and Research Skills	—	—	.567**	.000	Moderate
Leadership and Community Skills	—	—	.527**	.000	Moderate
Personal, Organizational, and Technological Skills	—	—	.603**	.000	Strong

Life satisfaction was moderate and positively correlated with all educational experience dimensions (Table 12).

Table 13. Comparative Analysis of Civil /Social Participation and Professional Profiles Among the Two Schools' Graduates

Variable	Category	KAIISE (%)	n JS (%)	n Total (%)	χ^2	df	P-value
Participation in Civil and Social Activities	Yes	75 (29.8)	48 (40.0)	123 (33.1)	3.850	1	0.050
	No	177 (70.2)	72 (60.0)	249 (66.9)			
Employment Status	Employed	192 (76.2)	99 (82.5)	291 (78.2)	1.900	1	0.168
	Unemployed	60 (23.8)	21 (17.5)	81 (21.8)			
Field of Study	Medicine & Health Sciences	40 (41.2)	28 (28.9)	68 (35.1)	9.60	5	0.087
	Engineering & Technology	15 (15.5)	10 (10.3)	25 (12.9)			
	Business & Economics	4 (4.1)	7 (7.2)	11 (5.7)			
	Humanities & Social Sciences	12 (12.4)	8 (8.2)	20 (10.3)			
	Education	6 (6.2)	3 (3.1)	9 (4.6)			
	Other / Unspecified	3 (3.1)	0 (0.0)	3 (1.5)			
Field of Work	Medicine & Health	37 (38.1)	25 (25.8)	62 (32.0)			
	STEM (Engineering & Technology)	10 (10.3)	9 (9.3)	19 (9.8)			
	Economy & Innovation / Business	3 (3.1)	6 (6.2)	9 (4.7)			
	Humanities, Education & Other Professions	23 (23.7)	20 (20.6)	43 (22.2)			

Variable	Category	KAIISE (%)	n JS (%)	n Total (%)	n χ^2	df	P-value
	Not Specified / Other	24 (24.7)	38 (39.2)	62 (32.0)	40.735	5	0.000

Differences between programs were limited, with a marginal difference in civic participation and a significant difference in field of work, while other variables were not significant (Table 13). No significant difference in life satisfaction was observed (Table 14).

Table 14. Differences in Life Satisfaction between Graduates of King Abdullah II Schools and Jubilee School for the N =372

Variable	School	N	Mean	SD	t-value	df	Sig. (p)	Interpretation
Life Satisfaction	King Abdullah	252	2.98	0.893	-0.939	370	0.348	No significant difference
	Jubilee School	120	3.06	0.574				

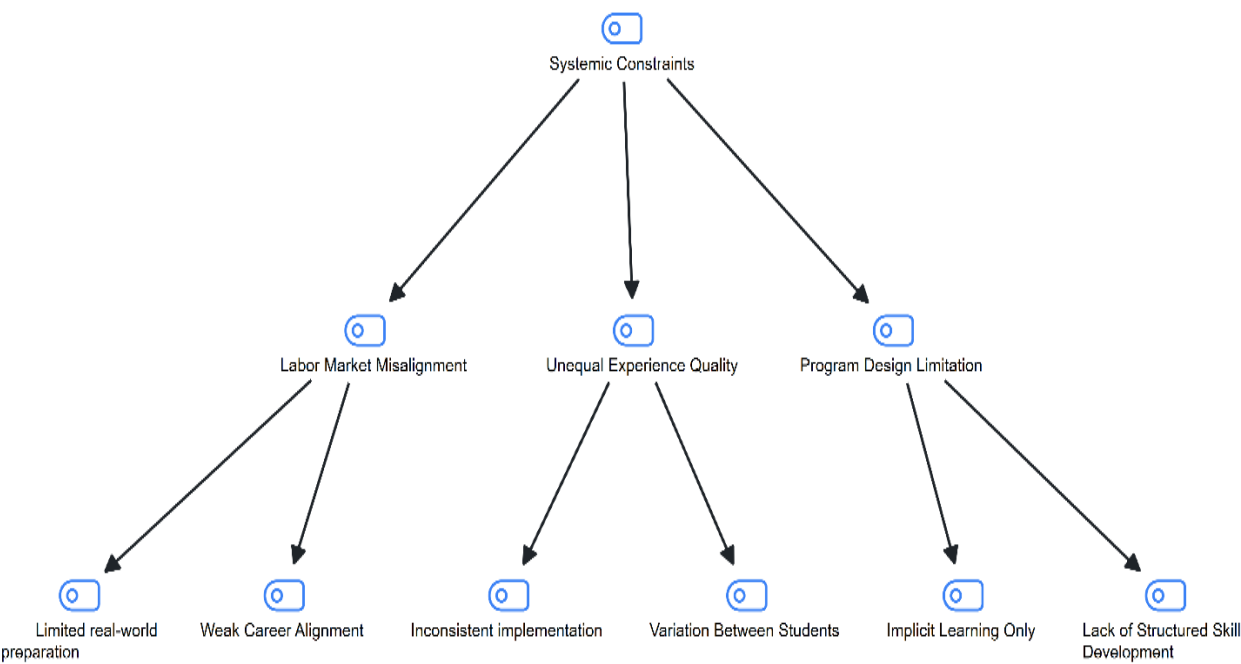
No statistically significant difference in life satisfaction was observed between groups, $t(370) = -0.939$, $p = .348$ (Table 14).

Qualitative results

Qualitative analysis identified four themes: perceived school experience, developmental gaps, systemic constraints, and outcomes (Figures 1–3).



Figure 1: Thematic Hierarchy of School Experience and Development Gaps



Hierarchical Code-Subcode Model of Outcomes

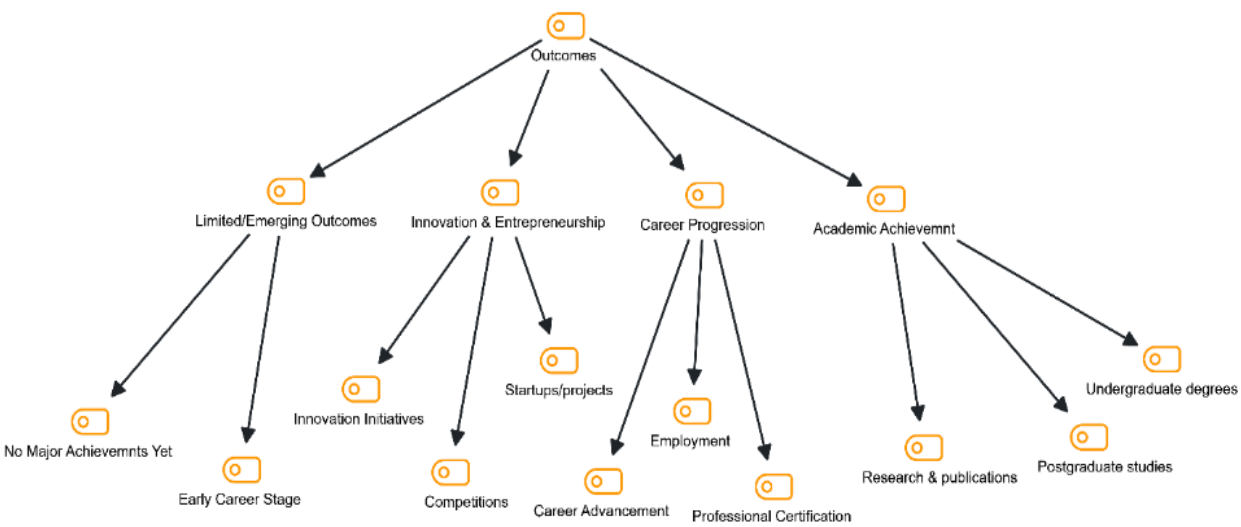


Figure 2: Thematic Hierarchy of Systemic Constraints and Outcomes Gaps

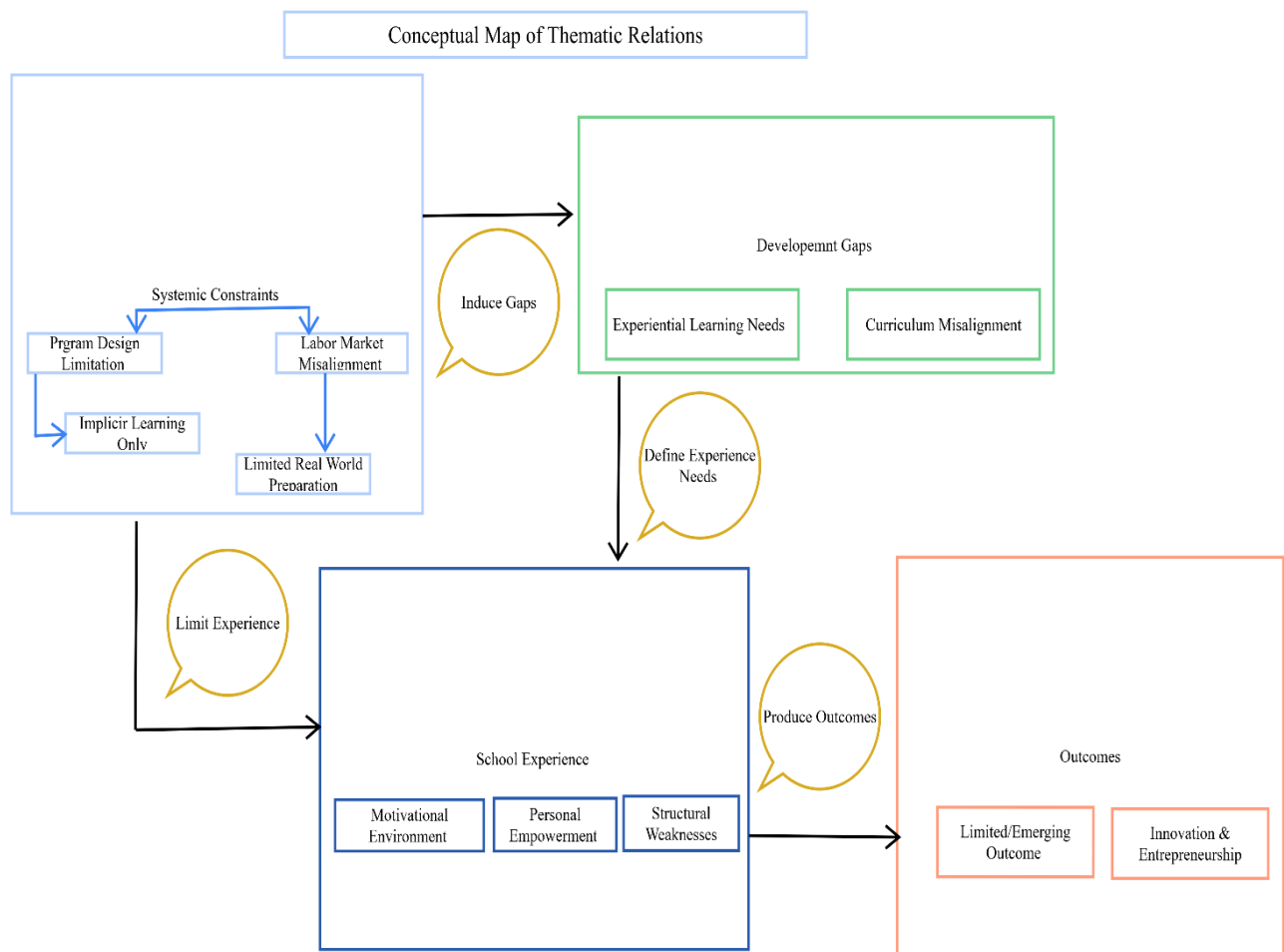


Figure 3: Conceptual Explanatory Map of Theme Relations

Theme 1: Perceived School Experience

This theme includes five dimensions that are interconnected, namely personal empowerment, cognitive development, competitive environment, varying effects, and structural constraints. The participants uniformly saw this experience as a means of fostering self-confidence and self-sufficiency, as can be seen in phrases such as, “This experience helped boost my self-confidence.” In addition, cognitive development, especially in terms of critical thinking and independent learning, was another aspect that participants mentioned. For instance, one participant stated, “It helped us think constructively, give constructive criticism, hold dialogues and discussions, emphasize correctness, correct mistakes, and learn from them.”

Further, the environment was described by the participants as competitive and motivating, as indicated by such statements as “It is a healthy competitive environment that helps you develop,”

with the emphasis on the dynamics within the peer group. Nevertheless, variations of influence were noticed, with some participants mentioning “no effect whatsoever” or something similar to any other school experience. Finally, structural barriers were also noticed, which include lack of guidance and little applicability, as seen from such remarks as “No clear guidance to help me decide on the subject I should take” and “Curriculum focused more on memorization than on application.”

Theme 2: Developmental Gaps

Developmental gaps serve as moderators that determine how well the developed skills will be able to yield results. The following five related areas have been determined. Firstly, participants emphasized curriculum rigidity, especially concerning its specialization, as seen in “The existing curriculum gives much more importance to some fields than others.” Secondly, poor career guidance stood out as one of the most significant obstacles, as shown in

such remarks as “We did not know what our career prospects were.”

Additional constraints on skill utilization included limited learning by doing experiences, which is evident in the phrases: “We needed more practical application outside of class” and “Real-world projects make us develop skills.” Lack of holistic education was also observed in the phrase: “It was just about academics; other things were neglected,” and that there was a need for developing “communication and teamwork skills.” Inadequate future-oriented competency integration was also noted, evident in phrases like: “There wasn’t enough emphasis on digital competencies” and “We should be taught future-oriented competencies such as AI.” Such observations demonstrate that the effectiveness of education does not solely depend on the quality of the education but also depends on the conditions through which potential is actualized.

Theme 3: Systemic Constraints

Respondents pointed out a mismatch between education and the job market, stating, “There is a big gap between what we study and what the job market demands.” Also, “The lack of realistic training makes it challenging for us to make the switch to work,” suggesting low preparedness for professional life. In addition, there were inconsistencies in the quality of education provided, with responses such as “Quality of education is variable across different education experiences” and “The course is limited to some students only, but not all of them.”

The weaknesses of the program design became apparent, especially the preference of gaining information over skill building, as expressed through statements such as, “The program focuses more on information rather than skills,” and “There is no concrete way of acquiring skills.” The weaknesses imply that learning becomes effective not only because of its content but also because of its system structure.

Theme 4: Outcomes

Outcomes signify the last component of the model, representing the relationship between education, developmental issues, and system barriers. Some

respondents mentioned results as well, claiming that “Many graduates have just started their journey and have not achieved anything yet,” showing the early development of the result due to structural aspects. Outcome related to innovation was rare but still visible, with participants mentioning that “Organizing private projects is considered the main indicator of success” and “Innovation contests are a sign of influence of the educational process,” evidencing little institutional support for such an outcome.

Career development was found to be the leading outcome, which entails constant development, as indicated by “Work is the starting point, but what is even more crucial is constant development” and “Earning professional certifications provides greater chances for career development.” There were also academic achievements, as observed in “Postgraduate education is a step towards excellence” and “Scientific research participation represents the influence of the learning process.”

In general, the outcomes varied from budding to advanced levels of accomplishment, depending on available opportunities and limitations. From the results, it can be concluded that outcomes are influenced not only by individual capabilities but also by the wider system that drives the developmental process. Qualitative analysis revealed a synergistic interaction among the four topics. The educational process creates early capabilities, whereas developmental voids and systemic limitations act as intermediary factors between capabilities and outcomes, regulating how well the capabilities translate into sustainable accomplishments.

4. Discussion

This research found that there is a trend toward success in academics and profession among such graduates, although there are still certain organizational and structural issues.

First: Quantitative Results in Light of Qualitative Interpretation

The key strength of this research is in the use of triangulation in methodology, which combines the quantitative outputs with qualitative representation

of the graduates' experience. Concentration on graduates' choice of medical and engineering specialties (see Tables 5 and 6) not only testifies to their success at school but also shows the impact of the environment on academic identity development. It can be correlated with the work of Lavy & Goldstein (2023), as well as with the general tendency for STEM specialization (Booij et al., 2016). In addition to that, qualitative output provides additional information about the influence of competitive environment and institutions' support on academic resilience and continuous success (see Figure 3). In turn, this output confirms the conclusions about Hajjat (2017), who claims that competitive environment supports the development of academic identity. Overall, the data obtained can be associated with the shaping of the long-term trajectory.

Second: Professional Integration

The results show a high degree of integration of the labor market (78.2%) and a high correlation between the academic orientation of the specialty and the area of work (67.1%) (see Table 7). They confirm the evidence about the long-term effects of gifted programs on adults' life paths (Subotnik et al., 2011). The income distribution in the middle categories indicates that the benefits of such programs are more valuable in terms of the quality of career development and employment security, similar to Lavy & Goldstein (2023). At the same time, the qualitative analysis presents another view. The integration of professionals is not a simple linear model, but a process of transformation influenced by structural difficulties (see Figure 1). It was found that there are gaps in the development of participants, mainly due to the absence of vocational guidance, a lack of practical training, and inconsistency with the requirements of the labor market.

Third: social participation

Findings from quantitative analysis reveal a low degree of civic engagement among the participants (33.1%) in terms of infrequent and sporadic participation (see Table 8). It aligns with the findings that programs for enrichment usually have greater impact on cognition rather than social

impact (Gül & Ayık, 2025). From qualitative results, it can be deduced that such an attitude is influenced by the structure of the program rather than the nature of the participant. The students emphasized the importance placed on academic success while offering few opportunities to participate in society.

Fourth: Life Satisfaction

From the quantitative findings, life satisfaction among graduates is observed at an intermediate level ($M = 3.00$), with a statistically significant association with previous educational experiences ($r = 0.607$) (See Table 12). The above observation demonstrates that the educational experience enhances feelings of personal competence but does not entirely account for overall life satisfaction. Contrary to Katanani (2020), it appears that participants experienced life satisfaction to a greater extent than those found among the JS graduates. The qualitative findings reveal variation in the subjective satisfaction of graduates. The satisfaction experience was found to be dependent on individual degrees of personal self-actualization, with some participants experiencing dissatisfaction due to a lack of fulfillment or difficulties at the beginning of their careers, while other individuals experienced dissatisfaction despite their academic achievements. The above finding implies that the observed mean value fails to represent the diversity in experiences after graduation.

Fifth: The Role of Educational Experiences

According to the quantitative findings, personal skills and organizational skills are seen to be the best predictors of educational and professional achievements ($\text{Exp}(B) = 2.11$, $p < 0.001$), seconded by cognitive skills, while there is no significant influence of leadership skills (refer to Tables 9 and 10). It is important to note that soft skills were acquired incidentally in a setting characterized by high achievement and competition (refer to Figure 1). These findings support Sternberg's (2020) argument that soft skills play an instrumental role in achieving success. On the other hand, the insignificance of leadership skills can be attributed to the lack of importance accorded to social and emotional development in the process.

Sixth: Transition Barriers as a Structural Phenomenon

Quantitatively, there is a presence of medium transition barriers ($M = 2.97$) with institutions such as lack of professional support and mentoring networks taking precedence (refer to Table 11). Qualitatively, there is further clarity, implying that these barriers are due to structural issues rather than personal issues. There is mention of the mismatch between education and labor markets, as well as deficiencies within the career guidance system (refer to Figure 3).

Whereas quantitatively, it can be seen that there are favorable outcomes for the most part, qualitatively, there are transition experiences that are more complicated and involve personal effort in overcoming structural obstacles. This finding is consistent with Backes et al.'s (2021) recommendation of institutional support and professional networks to maximize gains from investing in human capital. In conclusion, it can be deduced that the difficulties encountered during the transition process are mainly due to structural and institutional issues, which are evident both quantitatively and qualitatively (refer to Figures 1 and 2).

Seventh: Differences between Programs (Unity of Impact and Multiple Pathways)

In terms of quantitative results, there is convergence in outcome measures for enrichment programs, where there are no significant differences in most indicators, such as life satisfaction (Tables 13 and 14). The observed structural sameness implies similarities in quality of learning experiences, which proves that enrichment program type is not a determining factor for general outcomes during adulthood. However, there are no significant differences in civic engagement and employment practices. Based on qualitative results, differences in civic engagement and employment practices depend on the different institutional culture characteristic of specific programs. Whereas in some institutions academic competition is stressed, especially in STEM fields, other institutions allow for more diverse activities involving leadership development and cultural interaction; thus, leading to different social outcomes. Overall, there seem to be similar

goals pursued by all enrichment programs as regards personal and academic development; however, different orientation might play a role in post-graduation career decisions. These findings are consistent with Backes et al. (2021) in emphasizing the importance of school environment in promoting positive developmental outcomes. Overall, the integration of results suggests that the interaction between education experiences and outcomes takes place based on a number of factors, which are in line with Renzulli's (2016) interactive model.

Limitations

The findings drawn from this study have been subjected to certain constraints. First, the use of self-reporting as a source of data collection might result in certain forms of bias, such as recall bias and socially desirable response patterns. Second, since the sample has been restricted to only certain programs of Jordanian institutions, the results of this study may lack generalization to other settings. Third, cross-sectional research as it collects data from one snapshot in time, without taking into consideration any temporal changes in the outcome.

5. Conclusion and Recommendations

It was found out that graduates from gifted programs in Jordan have high academic and professional accomplishments especially in STEM areas, but they are relatively inactive and only moderately satisfied with their lives. This paper shows that although educational experiences provide students with necessary cognitive skills and personal competencies, their effects in the long run depend on various structural conditions such as lack of proper career counseling and inadequate institutional support. In addition to this, the presented research provides an interesting integrated model, in which outcomes are moderated by developmental and systematic factors.

Several specific recommendations can be made based on the results received in the study. Firstly, it would be beneficial to introduce formal career counseling as an additional element of educational programs and change current curriculum in a way to include social-emotional and leadership skills training. Secondly, at the level of policy

implementation, it would be necessary to form alumni networks and make connections with private sector organizations. As for future research, it could be useful to conduct longitudinal studies based on the provided framework.

Conflict of interest: The researcher declares that there are no conflicts of interest that could affect the study results or their interpretation.

References

- Al-Hroub, A. (2023). Rethinking gifted education in Jordan: An analysis of the role of educational and learning capitals. *Cogent Education*, 10(1). <https://doi.org/10.1080/2331186X.2023.2203591>
- Allen, M. S., Robson, D. A., & Iliescu, D. (2023). Face validity: A critical but ignored component of scale construction in psychological assessment [Editorial]. *European Journal of Psychological Assessment*, 39(3), 153–156. <https://doi.org/10.1027/1015-5759/a000777>
- Al-Shobaki, H. (2007). *The Jordanian experience in the care of gifted and talented students* [Paper presentation]. The Fifth Arab World Conference for the Gifted and Talented, Amman, Jordan. <https://search.mandumah.com/Record/483181>
- Backes, B., Cowan, J., & Goldhaber, D. (2021). *What makes for a “gifted” education? Exploring how participation in gifted programs affects students’ learning environments* (Working Paper No. 256-0821). National Center for Analysis of Longitudinal Data in Education Research (CALDER). <https://files.eric.ed.gov/fulltext/ED616054.pdf>
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. National Bureau of Economic Research. <https://www.nber.org/books-and-chapters/human-capital-theoretical-and-empirical-analysis-special-reference-education-first-edition>.
- Booij, A. S., Hann, F., & Plug, E. (2016). *Enriching students pays off: Evidence from an individualized gifted and talented program in secondary education* (IZA Discussion Paper No. 9757). <http://dx.doi.org/10.2139/ssrn.2742545>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications. <https://collegepublishing.sagepub.com/products/designing-and-conducting-mixed-methods-research-3-241842>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Feng, A. X., VanTassel-Baska, J., Quek, C., Bai, W., & O'Neill, B. (2005). A longitudinal assessment of gifted students' learning using the Integrated Curriculum Model (ICM): Impacts and perceptions of the William & Mary units. *Roeper Review*, 27(2), 78–83. <https://doi.org/10.1080/02783190509554294>
- Freeman, J. (2005). Giftedness in the long term. *Journal for the Education of the Gifted*, 28(3-4), 334–344. <https://files.eric.ed.gov/fulltext/EJ746289.pdf>
- Gagné, F. (2004). Transforming gifts into talents: The DMGT as a developmental theory. *High Ability Studies*, 15(2), 119–147. <https://doi.org/10.1080/1359813042000314682>
- Gül, M. D., & Ayık, Z. (2025). Impacts of enrichment programs on cognitive and affective skills of gifted students: A meta-analysis. *PLOS ONE*, 20(10), e0333714. <https://doi.org/10.1371/journal.pone.0333714>
- Hajjat, A. T. (2017). *The predictive ability of high school average and college average in career success among graduates of gifted programs in Amman and Salt* [Unpublished doctoral dissertation]. University of Jordan.
- Jarawan, F. (2026). *Giftedness, taLent, and creativity* (7th ed.). Dar Alfikr. <https://www.daralfikr.com/node/8058>
- Katanani, H. J. (2020). Life satisfaction for gifted adults: Its relation to gender, age, religiosity, and income. *Journal for the Education of Gifted Young Scientists*, 8(4), 1631–1644. <https://doi.org/10.17478/jegys.840243>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>

- Lavy, V., & Goldstein, Y. (2024). *Gifted children programs' short and long-term impact: Higher education, earnings, and the knowledge economy* (Working Paper No. 29779). National Bureau of Economic Research. <https://www.nber.org/papers/w29779>
- Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, 47(1), 36–49. <https://doi.org/10.1037/0022-0167.47.1.36>
- Lubinski, D. (2016). From Terman to today: A century of findings on intellectual precocity. *Review of Educational Research*, 86(4), 900–944. <https://doi.org/10.3102/0034654316675476>
- Neihart, M., Reis, S. M., Robinson, N. M., & Moon, S. M. (Eds.). (2002). *The social and emotional development of gifted children: What do we know?* Prufrock Press Inc. <https://psycnet.apa.org/record/2002-00981-000>
- Partnership for 21st Century Skills. (2009). *P21 framework definitions*. <http://www.21stcenturyskills.org>
- Pfeiffer, S. I. (2015). *Essentials of gifted assessment*. John Wiley & Sons. <https://doi.org/10.1002/97811394259410>
- Rababeh, H. (2021). The centennial of gifted and talented students care in Jordanian public education: Reality and suggested educational perspectives. *The Jordanian Journal of Educational Sciences*, 19(1), 83–102. <https://doi.org/10.47015/19.1.6>
- Renzulli, J. S. (2012). Reexamining the role of gifted education and talent development for the 21st century: A theoretical perspective. *Gifted Child Quarterly*, 56(3), 150–159. <https://doi.org/10.1177/0016986212444901>
- Renzulli, J. S. (2016). The three-ring conception of giftedness: A developmental model for promoting creative productivity. In S. M. Reis (Ed.), *Refining gifted education: The selected works of Joseph S. Renzulli* (pp. 55–90). Routledge. <https://doi.org/10.1017/CBO9780511610455.015>
- Renzulli, J. S., & Reis, S. M. (2014). *The Schoolwide Enrichment Model: A how-to guide for talent development* (3rd ed.). Prufrock Press. <https://psycnet.apa.org/record/2014-29069-000>
- Sternberg, R. J. (2020). The augmented theory of successful intelligence. In R. J. Sternberg (Ed.), *The Cambridge handbook of intelligence* (2nd ed., pp. 679–708). Cambridge University Press. <https://doi.org/10.1017/9781108770422.029>
- Sternberg, R. J., & Davidson, J. E. (Eds.). (2005). *Conceptions of giftedness* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511610455>
- Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2011). Rethinking Giftedness and Gifted Education: A Proposed Direction Forward Based on Psychological Science: A Proposed Direction Forward Based on Psychological Science. *Psychological Science in the Public Interest*, 12(1), 3–54. <https://doi.org/10.1177/1529100611418056>
- Swiatek, M. A., & Benbow, C. P. (1991). Ten-year longitudinal follow-up of ability-matched accelerated and unaccelerated gifted students. *Journal of Educational Psychology*, 83(4), 528–538. <https://doi.org/10.1037/0022-0663.83.4.528>
- Tombs, M., & Strange, H. (2024). Using qualitative questionnaires in medical education research. *Perspectives on Medical Education*, 13(1), 279–288. <https://doi.org/10.5334/pme.1102>
- Tran, B., Wai, J., & McKenzie, S. C. (2021). *Gifted education in Arkansas: A longitudinal study of gifted status and academic growth* (Arkansas Education Reports). <https://scholarworks.uark.edu/oepreport/78>
- Wai, J., & Allen, J. (2019). What boosts talent development? Examining predictors of academic growth in secondary school among academically advanced youth across 21 years. *Gifted Child Quarterly*, 63(4), 253–272. <https://doi.org/10.1177/0016986219869042>
- Wai, J., Bardach, L., & Tran, B. (2022). What longitudinal research and large-scale population representative studies can tell us about gifted students and education policy 50 years after the Marland Report. *Journal for the Education of the Gifted*, 45(1), 46–63. <https://doi.org/10.1177/01623532211063942>