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## Factors influencing the decision to major in special education in Saudi Arabia

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The study reported on here examined the factors influencing the decision to major in special education in Saudi Arabia. The sample was composed of 394 preservice special education (SE) teacher participants of which 141 were female and 253 were male. Three different statistical analyses were used to examine the study data: Cronbach's alpha coefficient for reliability; confirmatory factor analysis for construct validity; and *t*-test for examining significant differences. The findings indicate that participants have positive attitudes towards teaching and a high interest in special education. However, 34% of participants stated that they did not want to teach for the rest of their lives, and 16% reported that they chose this major although they were fully convinced that special education was not their preferred type of work. We concluded that female preservice SE teachers were most likely to be interested in the field of special education and held positive attitudes towards teaching. This study presents major potential implications for preparing special education teachers in Saudi Arabia and other countries.

**Keywords:** college major; incentives; personal interest; Saudi Arabia; special education

### Introduction

“There is, perhaps, no college decision that is more thought-provoking, gut wrenching and rest-of-your life oriented—or disoriented—than the choice of a major” (St. John, 2000:22). In Saudi Arabia, SE is one of the most popular majors for high school graduates. The demand for the SE as major at universities was not at its current high two decades ago, when only one university had a programme to prepare SE teachers. This lack of interest might have been one of the reasons that led the Ministry of Education to provide a financial incentive (a 30% salary increase) to teachers who majored in SE as opposed to other areas in teaching.

Recently, the situation has reversed, with more than 20 SE programmes in Saudi Arabia and very high numbers of applicants. For example, approximately 800 students at Salman bin Abdulaziz University applied to change their major to SE (2013), vying for fewer than 10 spaces, and Hail University received more than a 1,000 applications to change majors (Specialization change requests at the University of Hail, 2015), despite the “negative social attitudes associated with lack of knowledge of the needs and potential of persons with disabilities ... in the Arab region” (Hadidi & Al Khateeb, 2015:527).

This increased demand has led to an increase in the number of SE departments (Alnahdi, 2014a) required to fulfil the need for specialists with a degree in SE. Consequently, Alzahrani and Salim (2009) emphasise the need for studies to examine what motivations lead students to major in SE. Notably, these preservice SE teachers are prepared according to the types of student disabilities (categorical), and they will be working with students with specific disabilities.

This study has potential implications for admitting applicants to SE programmes, preparing high school students to evaluate their major options, providing academic guidance and offering university students flexibility in changing majors. Despite the growing international interest in inclusive education (Alnahdi, 2020; Leyser & Kirk, 2004; Peebles & Mendaglio, 2014; UNESCO International Bureau of Education, 2009), Saudi universities continue to provide training for teachers in SE specialties based on the type of disability. Additionally, other teacher preparation programmes (for example, Arabic teachers and Islamic teachers) are not taking inclusive education into consideration.

In addition, this study provides an opportunity for international readers to view some of the challenges facing the development of education in an economically emerging country. This study is also useful for those interested in developing education to study the results of some experiences and practices that have occurred in other countries to avoid loss of time and resources. For example, this study is the first study to examine the impact of the additional financial incentive for specialists in SE; therefore, it will be of interest to international readers to see the impact of such legislation to attract teachers to the field of SE.

### Focus of the Study

In 2014 only 52% of teacher candidates were able to pass the Teacher Competency Test (TCT) and obtain their teaching license in Saudi Arabia (Alnahdi, 2014b), which might have been due to many variables. One of these variables could be the incorrect choice of major, which, in many cases, is not a decision based on interests and abilities. Positive attitudes towards work and personal interest in a specific major are factors determining success in work (Miller, 1994; Mowbray, Bybee, Harris & McCrohan, 1995; Winn & Hay, 2009). Therefore, the exploration of the factors that influence preservice SE teachers' decision to major in SE is an important step towards greater understanding of what attracts high school graduates to SE as major.

### Significance of the Study

This study derives its importance from the essential role of teachers providing SE services. In this study we explored four important aspects. Firstly, factors that influenced preservice SE teachers to pursue their major were examined. These factors included the teachers' interest in SE and attitudes towards teaching. A positive attitude towards the importance of work increases an individual's potential for success in such work (Miller, 1994; Mowbray et al., 1995; Winn & Hay, 2009).

Secondly, we aimed to examine the associations among and differences between the factors (components) that influence the choice of SE as major in relation to other variables. For example, differences in teaching attitudes and personal interest in the major with regard to whether this major was the teachers' first choice when applying for admission, are addressed. Doing so helps to examine whether the admissions procedure used by universities to admit students is based on availability or interest.

Thirdly, differences in gender and whether SE was the first choice when applying for admission, are addressed. In the fourth instance, the targeted sample for this study was 300 participants, which makes it more representative and allows researchers to test the construct validity of the survey.

The findings from this study are beneficial on three levels. Firstly, the results will aid officials in the Saudi Arabia Ministry of Education in understanding the characteristics of SE teachers and the factors that influenced them to choose this major. This understanding will help the Ministry of Education adjust its recruitment criteria to attract more highly qualified high school graduates to choose this major. Secondly, faculty members in SE departments at Saudi Arabian universities will find the results of this study helpful in evaluating whether their criteria for admission are successful. Thirdly, this study provides an opportunity for the international reader to verify the effectiveness of some of the methods and incentives used in Saudi Arabia and their impact on and consequences for SE teachers.

### Literature Review

Beggs, Bantham and Taylor (2008) identify six factors as the main predictors that influence students' choice of academic major: 1) information searches, 2) matching with interests, 3) job characteristics (perceived availability of jobs, flexibility of jobs and career paths, and job security), 4) financial considerations, 5) psychological/social benefits, and 6) major attributes. Stephens and Fish (2010) added empathy towards students with disabilities as one of the factors that influence teachers to enter the SE field.

In Saudi Arabia, two studies examined pre-

service SE teachers' motivations to major in SE (Alzahrani & Salim, 2009; Ismael & Mohammed, 2010). Ismael and Mohammed (2010) surveyed 58 female preservice teachers in SE programmes in Saudi Arabia. Factors were categorised into four domains – social, personal, economic, and academic. The social aspect was rated as the most important factor influencing the choice of this major. Personal characteristics were rated as the second most important, while economic and academic variables were regarded as the third and fourth most important factors.

Alzahrani and Salim (2009) believe that for educational institutions' SE departments to achieve their goals in preparing citizens who are highly scientifically and intellectually qualified to perform their duties, it is important to include motivation to study SE as one of the criteria for admitting students. In addition, Porter and Umbach (2006) assert that individuals' interests and personal qualities are important considerations in choosing the appropriate specialisation, which help to increase the individuals' chances of success in this area.

Snyder and Slauson (2014) found that personal interest in a major and industry salary levels were among the main reasons why information systems was chosen as major. Similarly, after having conducted a study of 386 undergraduates in Texas in the United States of America (USA), Stock and Stock (2018) found that personal interest, financial variables, and parents were among the most important variables in choosing a college major. In contrast, Edmonds (2012) concludes that personal belief is the most important factor in choosing a major, while Fizer (2013), in a study involving 128 students at the University of Tennessee in the USA found that the influence of family members was the most important variable in choosing a major.

### Research Questions

The chronic shortage of teachers in the field (Billingsley, Carlson & Klein, 2004; Billingsley & McLeskey, 2004; Brownell, Hirsch & Seo, 2004; Singh & Billingsley, 1996; Stephens & Fish, 2010; Thornton, Peltier & Medina, 2007) is often discussed in SE literature – especially in the USA. However, the case in Saudi Arabia is currently the opposite, which raises the question of what attracts so many high school graduates to choose SE as major. The following research questions were used in this study:

- 1) What factors influence preservice SE teachers to choose SE?
- 2) Does preservice SE teachers' interest in SE vary by gender?
- 3) Are there significant mean differences in attitudes towards teaching and personal interest in SE between those for whom SE is their first choice and others?

## Methodology

To answer these research questions, a descriptive quantitative research design was used. Data were collected using a survey designed for this purpose.

### Independent Variables

The independent variables in this study were gender and whether SE was the first choice.

### Dependent Variables

Prior research was used to develop a survey on the factors often cited in the literature – mainly the six factors proposed by Beggs et al. (2008) mentioned earlier. However, as four of the six factors were combined into two, the final survey consisted of four components. The four components (subscales) were personal interest, attitudes towards teaching, SE teachers' benefits, and teachers' work environment.

A 17-item questionnaire was developed to cover the four components, while three general items (1, 11, and 20) were added.

### Sample

The study sample consisted of students in the department of SE at one of the public universities in Saudi Arabia. There were approximately 1,100 students in the SE department in both sections (male and female), with approximately 600 male students and approximately 500 female students. Courses with large numbers of students (25 to 45) were selected. The total number of participants included 394 preservice SE teachers, of which 141 were female and 253 were male. The researcher is from the male section in the department, which helped in the following process through mediation and by obtaining a larger sample of male respondents. As participation was on a voluntary basis, students were advised that they could withdraw from the study at any time.

### Instrument

The instrument used in this study (see Appendix A) was developed to cover the four areas supported by the literature (Beggs et al., 2008). A pilot study was conducted to verify the scale's reliability. Thirty-six participants took part in the pilot study. A five-item Likert scale was used in the construction of the items. The "reliability of Likert scales tends to be good and, partly because of the greater range of answers permitted to respondents" (Oppenheim, 1992:200). The overall Cronbach's alpha coefficient was .746. Additionally, Cronbach's alpha coefficient was used to determine the scale reliability (Table 1).

**Table 1** Overall and subscale reliability

	Item #	Alpha
Overall	17 items	.746
Personal interest	3-4-15-17	.788
Attitudes towards teaching	16-18-19	.726
Special education teaching benefits (extra payment – low number of hours per day)	6-12-13-14	.727
Local work environment for teachers	2-5-7-8-9-10	.606

Confirmatory factor analysis results showed indicators of good fit of the hypothesised model, which supported the construct validity of the scale (Figure 1). The result was .93 for the goodness of fit index (GFI) and .90 for the adjusted goodness of fit index (AGFI). The root mean squared residual (RMR) was too small (.07), which also indicates a good fit. An RMR of zero indicates a perfect fit. Additionally, the comparative fit index (CFI) was .914, indicating a good fit. A CFI of 1 indicates a perfect fit.

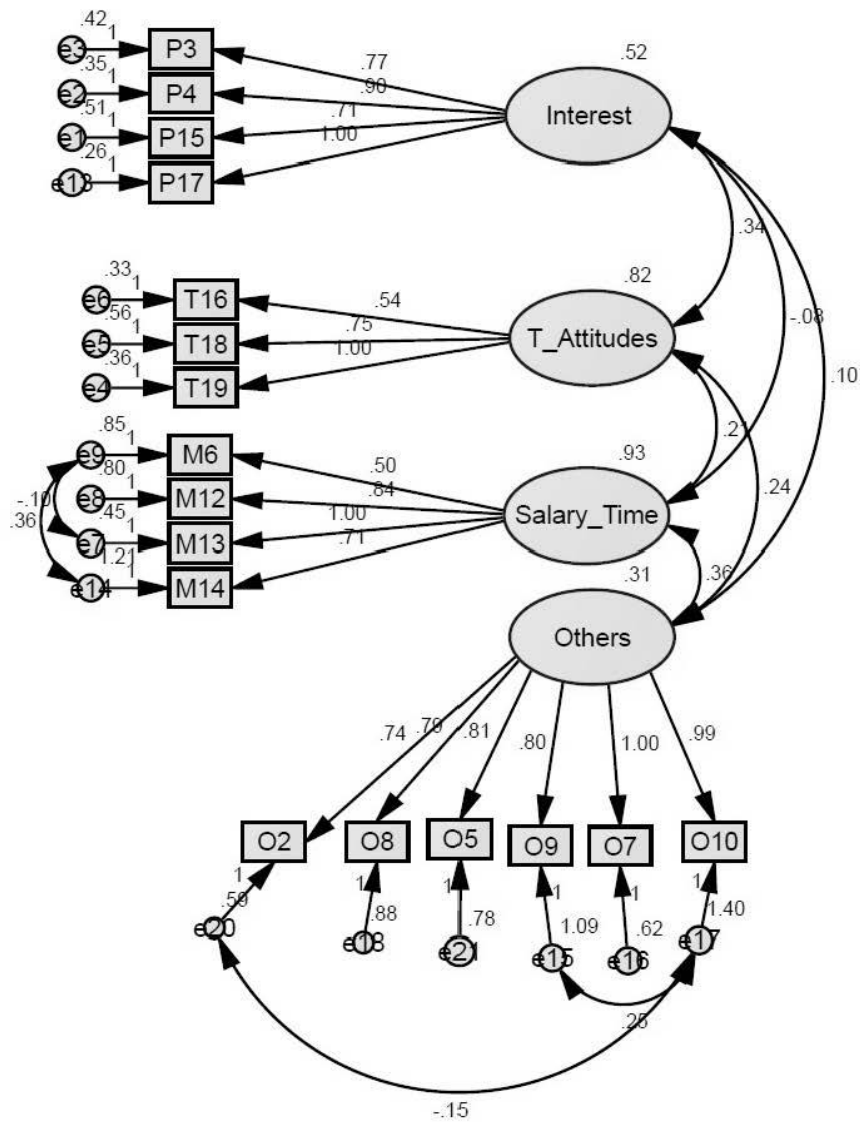


Figure 1 Confirmatory factor analysis

**Results and Discussion**

Based on the results, the participants held positive attitudes towards teaching ( $M = 4.09$ ). Additionally, the participants expressed a high interest in SE ( $M = 4.08$ ), which might have also been a key factor in the participants' choice of this major. How-

ever, 34% of the participants stated that teaching was not the career that they wanted to pursue for the rest of their lives, and 16% reported that they had chosen this major although they were fully convinced that it was not their preferred type of work (see Table 2).

**Table 2** Participants' responses

Item #	Reason for choosing a special education major	Factor #	SA	A	N	D	SD
1	I chose to work with children with disabilities because this will be greatly rewarded by Allah (God)	Overall	297 76%	89 23%	3 1%	1 0%	3 1%
2	Social status of teachers in society	4	119 30%	190 48%	60 15%	21 5%	4 1%
3	My personal interest in people with disabilities	1	157 40%	148 38%	73 19%	16 4%	0%
4	One of the best disciplines that is appropriate for me	1	165 42%	157 40%	53 13%	12 3%	6 2%
5	Flexibility in teachers' jobs	4	75 19%	142 36%	132 34%	31 8%	13 3%
6	Extra payment for special education teachers is an adequate reason to choose this specialization	3	43 11%	105 27%	145 37%	76 19%	24 6%
7	Security in government jobs	4	152 39%	141 36%	71 18%	22 6%	6 2%
8	Increasing interest in the field of special education	4	82 21%	167 43%	85 22%	38 10%	16 4%
9	Ease of study in the College of Education	4	42 11%	109 28%	115 29%	90 23%	36 9%
10	Recommendation of a relative or friend	4	72 18%	139 36%	46 12%	87 22%	46 12%
11	I was assigned to this specialization; I was not interested in it	Overall	15 4%	34 9%	26 7%	85 22%	227 59%
12	Free time in teaching was always an important factor in choosing this major	3	50 13%	118 30%	100 26%	78 20%	46 12%
13	Teachers receive nearly three months' annual vacation	3	91 23%	138 35%	84 21%	54 14%	26 7%
14	Extra payment for special education is the only reason for choosing this major (30% extra when teaching)	3	57 15%	88 23%	99 26%	73 19%	66 17%
15	I have a constant interest in things related to persons with disabilities	1	140 36%	161 41%	72 18%	14 4%	4 1%
16	Teaching is one of the finest humanitarian professions	2	218 56%	135 35%	28 7%	7 2%	2 1%
17	Special education is one of my personal interests	1	113 32%	140 39%	79 22%	23 6%	2 1%
18	I have a passion for (significant interest in) teaching as a profession	2	95 27%	138 39%	76 21%	36 10%	10 3%
19	Teaching is the job that I want to continue in for the rest of my life	2	131 37%	102 29%	82 23%	24 7%	14 4%
20	I chose this major, and I am fully convinced that it is not suitable for me	Overall	32 9%	23 7%	42 12%	65 19%	188 54%

Note. SA = Strongly agree, A = Agree, N = Not sure, D = Disagree, SD = Strongly disagree.

The variable of whether the area was their first choice of major (every applicant was required to list a number of majors) when applying for admission had a significant influence on the teachers' personal interest in the major and on their attitudes towards teaching in general. Additionally, teachers' attitudes towards teaching and personal interest in the major were found to be at the highest

level during the first semester.

**Personal Interest in SE by Gender**

As shown in Table 3, gender was a significant variable influencing the participants' personal interest in SE ( $t = -2.473, p < .05$ ), wherein female preservice teachers showed more interest in the field than did male preservice teachers.

**Table 3** A *t*-test for personal interest in special education by gender

	Sex	N	M	SD	t-value	p
Personal interest	Male	249	4.0348	.67635	-2.473	.014
	Female	141	4.2128	.69368		

**Extra Payment for SE Teachers as the Only Reason for Choosing this Major by Gender**

As shown in Table 4, there was a statistically significant mean difference between the participants according to gender regarding whether extra

payment for SE teachers (30% higher salaries) was their only reason for choosing this major ( $t = 32, p < .05$ ).

Male teachers were more likely to choose this major solely based on the higher salaries.

**Table 4** A *t*-test for extra payment for special education teachers as the only reason for choosing this major by gender

	Sex	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i> -value	<i>p</i>
Item 14	Male	249	3.2762	1.29280	32.022	.000
	Female	141	2.5248	1.17462		

SE as the First Choice when Applying for Admission  
As shown in Table 5, participants with SE as their first preference when applying for admission to university had significantly higher mean personal

interests in SE ( $t = 5.810, p < .05$ ) and teaching attitudes ( $t = 3.396, p < .05$ ) compared with those for whom SE was not their first choice.

**Table 5** A *t*-test for personal interest, teaching attitudes and ranking special education as the first choice when applying for admission

	Special education was my first choice when applying for admission	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i> -value	<i>p</i>
Personal interest	Yes	334	4.1786	.63967	5.810	.000
	No	56	3.6250	.77117		
Teaching attitudes	Yes	334	4.1357	.78581	3.396	.001
	No	55	3.7424	.85516		

## Discussion

The conceptual framework of this study was driven by the motivation that lead to the choice of major subject. In the development of this study scale we considered the Self-Determination Theory (SDT), which was also used in other studies as part of the foundation upon which to develop scales for career choice (Du Preez, 2018).

The findings of this study indicate that the participants had positive attitudes towards teaching, and a high interest in SE. However, 34% of the participants indicated that teaching was not the career that they wanted to pursue for the rest of their lives, and 16% reported that they had chosen this major even though they were fully convinced that it was not their preferred type of work.

In this study we found that participants for whom SE was their first choice when applying for admission held more positive attitudes towards teaching and had more personal interest in the field.

### SE as the First Choice

Differences were clear in terms of interest in SE and attitudes towards teaching between those for whom SE was their first choice and those who had applied for SE as major among other majors. The participants who had chosen SE as their first choice showed more positive attitudes towards teaching. Additionally, these participants showed more interest in SE.

### Female Teachers

This study showed that female teachers held a more positive attitude towards teaching. Additionally, females were more interested in the field of SE than were male participants. These variables are essential indicators of teachers' performance. In addition, female teachers were less attracted to the variable of a higher salary for SE teachers. This

result can be explained by female participants' main motivation for their choice of major, which was interest in the field rather than the financial features of the job. This finding is consistent with that of Malgwi, Howe and Burnaby (2005) who found that the financial variable played a significant role in male undergraduate students' decisions to choose a major in business.

### Notable Results

One interesting result is that 98% of the participants either strongly agreed (SA) or agreed (A) that they had chosen to work with students with disabilities because it was highly rewarding and humanitarian work and was considered the work of Allah (God). Alternatively, 38% of the participants agreed that the 30% additional salary was the only reason why they chose this major. This finding can be explained by the social tendency (defining what is acceptable in society) to agree with the notion of item 1. However, when the participants answered the second item (item 14), which provided a more realistic option, they also agreed with this item. Therefore, the result from the second item might represent the participants' perspectives more accurately.

### Implications

Practical implications can be drawn from the findings of this study. This study reveals that teachers vary in terms of their interest in SE and their attitudes towards teaching based on whether SE was their first choice when applying for admission. Additionally, this study found that females held more positive attitudes towards teaching and more interest in SE than did males. Therefore, this finding has practical implications for reforming admissions criteria for SE preparation programmes in Saudi Arabian universities.

Next, we discuss some of the implications that can be drawn from the results of this study.

#### *Ministry of Education*

Implications for universities include a need for transition programmes for high school students to give them the opportunity to visit universities and be exposed to different majors and disciplines before they must decide on major subjects.

Additionally, the findings of this study confirm the need for systematic transition programmes to prepare high school students to examine their major options and interests during high school. Transition services for students with disabilities in the SE field are often discussed. In fact, transition programmes must be offered in high schools for all students (Alnahdi, 2013). These transition programmes could help high school students to choose majors that suit them. The absence of these programmes results in students having to rely on the people around them as the only sources of guidance in choosing a major subject rather than interest or potential. Finally, universities should be somewhat flexible in allowing students to correct a wrong choice of major.

#### *Colleges and SE preparation programmes*

This study presents the major potential implications of admitting applicants to SE programmes by taking into consideration their interest in the field. This step should be taken with students in high schools to allow them to evaluate their major options and interest in those majors. Additionally, high school students should be given the opportunity to attend classes at universities to determine whether their choice of major subject suited them.

#### *Female teachers*

As the results show, female teachers held more positive attitudes towards teaching and more interest in the field of SE. This difference should encourage the Ministry of Education to consider recruiting more female teachers than male teachers and to allow female teachers to work with male students in elementary schools, at least during male students' first three years in elementary school. Then, boys approximately 10 years (4th grade) should continue to be taught by male teachers, as some would argue that male teachers would be more likely to manage classes with male teenagers. Additionally, in Saudi Arabia it would be socially unacceptable for female teachers to teach male teenagers.

#### *International perspective*

This study has implications for international policy makers. The idea of increasing SE teachers' salaries is often discussed in the literature, with some arguing that doing so might reduce the shortage of SE teachers. However, this study showed that increasing the salaries of SE teachers compared to

those of other teachers did not necessarily attract the best candidates. Rather, this feature might attract others who are not interested in the field.

#### **Conclusion**

Admissions policies for SE preparation programmes must be reformed in a way that takes interest in the field into consideration as one of the main aspects of the admissions process. We must ask what can be expected of teachers who are not interested in the field and do not think that it suits them, as 29% of the SE teachers in our study sample were fully convinced that this work did not suit them.

Therefore, the financial aspect alone might not be the best way to attract highly qualified teachers. A formula that takes into consideration the financial aspect and interest in the field, in addition to the personal characteristics of the candidates, is needed. Additionally, the need for transition services for students with disabilities is often discussed in the SE field. In fact, transition programmes must be offered to all high school students. These transition programmes could help high school students choose majors that suit them.

In summary, based on the results of this study, we argue that interest in the field should be an important variable in admitting students to SE preparation programmes. Female participants in this study showed more interest in SE and had more positive attitudes towards teaching in general. Therefore, this interest of female teachers should be reflected by the number of female SE teachers in the field. Female teachers can even be recruited to work with young male students at elementary level.

#### **Notes**

- i. Published under a Creative Commons Attribution Licence.
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**Appendix A: The Arabic Survey Used in this Study**

التخصص [Major in university]		الجنس [Gender]	
.....		أنثى [Female]	
		ذكر [Male]	
تخصصي الآن هو رغبتي الأولى عند التقديم [My major now was my first preference when applying]			
نعم [Yes]			
لا [No]			
غير موافق بشدة [Strongly Disagree]	غير موافق [Disagree]	غير متأكد [Not Sure]	موافق بشدة [Strongly Agree]
من أسباب اختياري لتخصص التربية الخاصة: [Reason for choosing a special education major]			
لما في التعامل مع الأطفال ذوي الإعاقة من الأجر الكبير عند الله [I chose to work with children with disabilities because this will be greatly rewarded by Allah (God)]			
المكانة الاجتماعية للمعلم في المجتمع [Social status of teachers in society]			
اهتمام شخصي بالأطفال ذوي الإعاقة [My personal interest in people with disabilities]			
تخصص التربية الخاصة من أفضل التخصصات المناسبة لي [One of the best disciplines that is appropriate for me]			
هو من اهتماماتي الشخصية تخصص التربية الخاصة [Special education is one of my personal interests]			
هناك مرونة في وظيفة المعلم [Flexibility in teachers' jobs]			
بدل التربية الخاصة سبب كافي لاختيار هذا التخصص [Extra payment for special education teachers is an adequate reason to choose this specialization]			
الأمان في الوظائف الحكومية وضمان الاستمرار فيها [Security in government jobs]			
بسبب الاهتمام الحاصل في مجال التربية الخاصة [Increasing interest in the field of special education]			
بسبب سهولة الدراسة في كلية التربية [Ease of study in the College of Education]			
توصية من قريب أو صديق [Recommendation of a relative or friend]			
تم وضعي في هذا التخصص ولم أكن راغب في ذلك [I was assigned to this specialization; I was not interested in it]			
وقت الدوام في التدريس كان سبباً مهماً في اختياري التخصص [Free time in teaching was always an important factor in choosing this major]			
لدي شغف (اهتمام بشكل كبير) بمهنة التدريس [I have a passion for (significant interest in) teaching as a profession]			
حصول المعلم على قرابة ثلاث أشهر كإجازة سنوية [Teachers receive nearly three months' annual vacation]			
بدل التربية الخاصة هو السبب الوحيد لاختياري التخصص (30% زيادة عند التدريس) [Extra payment for special education is the only reason for choosing this major (30% extra when teaching)]			
لدي اهتمام دائم بمعرفة الأمور المتعلقة بالأشخاص ذوي الإعاقة [I have a constant interest in things related to persons with disabilities]			
التدريس من أرقى المهن الإنسانية [Teaching is one of the finest humanitarian professions]			
العمل الذي أريد ان عمله لبقية حياتي هو التدريس [Teaching is the job that I want to continue in for the rest of my life]			
اخترت هذا التخصص وأنا مقتنع تمام القناعة انه غير مناسب لي [I chose this major, and I am fully convinced that it is not suitable for me]			