



## Research Article

© 2022 Mohammed Saleh Alajlan.  
This is an open access article licensed under the Creative Commons  
Attribution-NonCommercial 4.0 International License  
(<https://creativecommons.org/licenses/by-nc/4.0/>)

Received: 16 November 2021 / Accepted: 24 December 2021 / Published: 5 May 2022

# Preparedness of Deaf and Hard of Hearing High School Students' for Undergraduate Education in the Al-Qassim Region of Saudi Arabia

Mohammed Saleh Alajlan

Department of Special Education,  
College of Education, Qassim University,  
Buraydah 52571, Saudi Arabia

DOI: <https://doi.org/10.36941/jesr-2022-0083>

## Abstract

*Even though obtaining a university degree creates significant socioeconomic benefit, student success or attrition in higher education is deeply affected by their preparedness for this level of the educational journey. Hence, this study endeavored to examine the perceptions of deaf and hard of hearing (D/HH) Saudi high school students regarding their preparedness and readiness to enroll in undergraduate programs. This study employed a quantitative approach to investigate student preparedness using an electronically-distributed survey to obtain responses from 132 individuals. The study revealed that although overall most D/HH students feel they are prepared to enroll in undergraduate programs, gender and type of hearing loss were found to have significant effect on the respondents' self-perceptions. The results of this research can provide educators with valuable insight into the preparedness of Saudi D/HH high school students to enroll in universities. This understanding can also shed light on how educators can create accommodations in the curriculum to support this population as they transition to college as well as guide educators and other stakeholders in how to teach and assess Saudi D/HH high school students to prepare them for undergraduate programs to increase retention, and graduation.*

**Keywords:** *deaf and hard of hearing, high school students, preparedness, undergraduate programs, Al-Qassim Saudi Arabia*

## 1. Introduction

The advantages of higher education are virtually unlimited as it positively impacts the lives and careers of most individuals who pursue it (Baum et al., 2013; Marschark et al., 2016). In Saudi Arabia, a developing country with high per capita income and one of the fastest-growing higher education systems in the Middle East, government and citizens alike highly value post-secondary education. Higher education in Saudi Arabia passed through several phases before arriving at its current status, an evolution that was made possible through significant financial support from the government, which is dedicated to the establishment of a higher education system that is on its way to achieving global standing.

In 2011, the country had 23 public universities, 18 primary teacher colleges for men, 80 primary teacher colleges for women, 33 private universities and colleges, 37 colleges and institutes for health,

and 12 technical colleges (Alamri, 2011). At present, Saudi Arabia has 29 public universities, 36 private universities and colleges (University Education, n.d.), 62 technical colleges for men, 29 technical colleges for women, and 33 academies and higher institutions offering 47 training diplomas and 17 undergraduate programs (Technical and Vocational Training Corporation at a Glance, 2020). Currently, the government is continuing the rapid expansion of higher education and working on increasing university admission rates and capacity. For instance, university capacity was at about 636,000 in 2006 and 850,000 in 2009; it has now increased to 1.98 million students as of 2021.

With Crown Prince Mohammad bin Salman's Vision 2030 strategy to diversify and strengthen the Saudi economy, the country will invest US\$1.6 billion in research and development, including in higher education, over these 2 years alone. This reflects the Saudi belief and recognition that investments in higher education and research can drive social and economic development in the country. Specifically, when Saudi Arabia invests such a huge amount of money in setting up and developing schools and universities, it is establishing its standing as an education leader in the Gulf region, the Middle East as a whole, and even internationally, which has in turn resulted in "unprecedented growth both in student numbers and infrastructure" (Onsman, 2011, p. 519).

Saudi Arabia aims to achieve the placement of five Saudi institutions of higher education in the top 100 major universities, globally, by 2030. This goal drives the government's efforts to support Saudi universities in broadening the fields of study available to Saudi students, which in turn will lead to the diversification of the economy, away from the current emphasis on oil, of the country (Aldossari, 2020).

However, the country's higher education system still has some drawbacks. One major problem is in the area of supporting students with some type of special needs. For instance, Saudi D/HH individuals are rarely enrolled in undergraduate programs in Saudi Arabia in general and in the Qassim Province in particular. This is despite the passage of the Disability Code in 2000 that states the rights of people with disabilities, including the D/HH, to equal access to post-secondary educational opportunities to those of their typical peers. Moreover, Vision 2030 is designed to ensure the rights of people with special needs, as it specifies these citizens should be able to obtain appropriate comprehensive education and hold jobs in their fields of study, with the provision of appropriate support that allows them to achieve success and integration into Saudi society (Kingdom of Saudi Arabia, 2016; King Salman Center for Disability Research, n.d.).

Another factor behind this delay in achieving the full integration of D/HH students, might be related to faculty members' attitudes toward their enrollment in undergraduate programs, which have been shown to affect the success of these students (Sniatecki et al., 2015). Generally speaking, faculty members have high expectations of students who enroll in higher education (Barrie, 2006, 2007; Smith & Wertlieb, 2005; van der Meer, 2008), which might be considered to translate to a tendency to underestimate the potential of students with special needs. However, even though faculty members overall might tend to exhibit poor attitudes toward the enrollment of such students in higher education, Alajlan (2017) found that faculty members in the Al-Qassim area generally have positive attitudes toward the enrollment of D/HH individuals in undergraduate programs.

Nonetheless, even if the staff at the particular institution are welcoming and appropriate accommodations are provided, D/HH students in Saudi Arabia may not feel ready to continue on to higher education from high school. In this case, their reluctance may be due to their negative opinions of their own readiness and preparedness, which is an important factor as "students' perceived preparedness for university is expected to be a motivational factor for good performance" (Jansen & van der Meer, 2012, p. 10).

Moreover, as Albertini et al. (2012) found, "Research tells us that academic preparation is key to deaf students' success at college" (p. 85). If students feel well-prepared and confident that they can succeed in the higher education setting, their chances of success will increase, especially because there is a strong relationship between attitudes and behaviors, meaning an individual's attitudes are strongly correlated with their future behavior (Ajzen & Fishbein 2005; Fiske et al., 2010; Smith et al., 2006).

Students' preparedness for higher education is an essential factor in their success at university (Byrne & Flood, 2005; Haggis & Pouget, 2002), and "it can be expected that students who feel better prepared for university will have less trouble with the transition" (Jansen & van der Meer, 2012, p. 2). Conversely, if students feel they are not adequately prepared, they might be more likely to drop out after just the first year or shortly after that (Kirst & Venezia, 2004; Lipka, 2006). Failure to complete the full undergraduate program incurs not just a financial cost, but also has a negative psychological impact on the individual student that impacts their future progress as well as career aspirations (Albertini et al., 2012). To offset such negative impacts and support D/HH students in their undergraduate experience, it is necessary that their perceptions regarding higher education and their ability to succeed and thrive in the higher education setting be evaluated while they are still in high school, as the expectations of this special needs demographic might determine how these students will function during their first year, a critical point for drop-out (McInnis et al., 2000; Smith & Wertlieb, 2005). When D/HH student enrollment in undergraduate programs has been examined in different countries, researchers have found that regardless of the provision of accommodations, student perceptions of their own ability to succeed had a greater impact on the decision to continue or drop out; such perceptions include their ideas regarding their own preparedness, the communication environment, and the types and sufficiency of support services provided in their higher education institutions (Boutin, 2008; Hyde et al., 2009; Marschark et al., 2016; Powell et al., 2014). While personal preparation is essential for D/HH students' success in higher education, other factors—such as their identity as D/HH, self-advocacy skills, and motivation and interest in higher education—also affect their achievement (Albertini et al., 2012).

Certain other factors must also be considered when examining the success of D/HH students at the undergraduate level. For example, gender may potentially affect the level of preparedness of D/HH students, with research finding that female students usually underestimate their abilities in certain academic areas and their potential for academic success even when they have achieved advanced academic success in general education (e.g., Appel et al., 2011; Applerouth, 2017). Specifically, these students have been found to judge themselves more harshly than do their male counterparts, as in the case of Spanish female engineering students who were studied by Torres-Guijarro and Bengoechea (2017); female students have also been found to report higher math anxiety than their male peers (Pajares & Kranzler, 1995). Another factor that has been found to impact preparedness is type of hearing loss, perhaps due to the fact that "the effect of the loss of functional hearing depends primarily on the type, extent and timing of the hearing loss" (Bell & Swart, 2018, p. 140).

Therefore, this study was designed to investigate Saudi D/HH high school students' level of preparedness to enroll in undergraduate programs and the factors that would affect such levels of preparedness. One assumption the study made was that if D/HH individuals feel ready for undergraduate study and have positive attitudes regarding their readiness, this will correlate to greater academic success. This research endeavors not only to establish the importance of high self-esteem regarding ability and preparedness on the part of D/HH students but also to establish the importance of such preparedness to support these students in avoiding high drop-out rates and the associated financial and psychological impacts that accompany such failure (Albertini et al., 2012).

## **2. Significance and Purpose of the Study**

Even though the Saudi government has established the rights of individuals with special needs, an informal survey of Saudi university administrators found that D/HH individuals rarely enroll in Saudi universities. Therefore, this quantitative survey was designed to investigate the factors specific to D/HH individuals that impact their enrollment levels in undergraduate education by exploring the levels of preparedness of the D/HH in high school. The survey also investigated the similarities and differences in levels of preparedness to enroll in undergraduate programs between male and female D/HH students and between deaf students and hard of hearing students.

### 3. Research Questions

1. What is the perceived level of preparedness of D/HH high school students in the Al-Qassim region to enroll in higher education?
2. What are the differences, if any, in perceptions of preparedness to enroll in undergraduate programs between male and female D/HH students?
3. What are the differences, if any, in preparedness to enroll in undergraduate programs between deaf students and hard of hearing students?

### 4. Methodology

#### 4.1 Data Collection

After reviewing the relevant literature and formulating the research questions, a questionnaire was developed that was then reviewed by four educators, each of whom holds a PhD in special education, as well as between 6 to 10 years of experience in teaching and working with D/HH students. The questionnaire consisted of two parts: (a) the first part that involved demographical questions (i.e., age, gender, city, educational level, GPA, type of hearing loss, method of communication); and (b) the second part, which consisted of 25 statements that had been structured to measure the self-perception of preparedness of D/HH high school students to enroll in undergraduate programs. The survey employed a 5-point Likert scale where the responses ranged from “strongly agree” to “neutral” to “strongly disagree.” An electronic link to the questionnaire was created and sent to D/HH communities in Al-Qassim. The link was posted on a number of forums for D/HH individuals in Saudi Arabia using WhatsApp and Snapchat. In the first section of the there was a question asking about participants’ age; if an individual indicated they were too old (i.e., above 25 years old) or young (i.e., younger than 15 years old) to meet the criteria, they were thanked for their time and exited from the survey,

#### 4.2 Respondents

The total number of survey respondents was 132, where 69 were male and 63 were female. Students included in the pool were in their second or third years of high school, or were high school graduates. The information on the different educational levels of the 132 are presented on Table 1.

**Table 1:** Education Levels of Respondents

Educational Level	Number of Respondents
2nd year secondary (U.S. Junior)	39
3rd year secondary (U.S. Senior)	41
High school graduate	52
Total	132

Regarding level of hearing loss, 72 respondents were deaf and 60 respondents were hard of hearing. The majority of the respondents ( $n = 110$ ; 83.3%) indicated that they use Arabic Sign Language as their main method of communication.

#### 4.3 Data Analysis

All of the survey items were positively-keyed where agreement with the item represented a relatively high level of preparedness, such as, “The skills I acquired in high school will qualify me to succeed in the university,” and “I will be able to overcome the personal difficulties that may hinder my admission to

the university.” The total score for each respondent was computed. The higher the score a respondent achieved, the higher level of preparedness they were deemed to possess to enroll in higher education. The maximum possible score was 125 points; the highest obtained score in the study was 120 points by a hard of hearing male student and the lowest obtained score was 36 points by a deaf female student. Based on their scores, respondents were divided into four groups as shown in the following section.

#### 4.4 Results

To answer the first research question (“What is the perceived level of preparedness of D/HH high school students in the Al-Qassim region to enroll in higher education?”), D/HH high school students who responded to the survey were divided into four groups based on their scores regarding their perceptions of their own preparedness: (a) above 100 points was characterized as “well-prepared”; (b) from 100–76 points was characterized as “prepared”; (c) from 75–50 points was deemed “partially prepared”; and (d) a score of less than 50 points was considered “not prepared.” This data is presented on Table 2.

**Table 2:** Preparedness of D/HH Students to Enroll in Higher Education

Level of Preparedness	N	Percentage
Well prepared	26	19.7%
Prepared	84	63.6%
Partially prepared	15	11.4%
Not prepared	7	5.3%

As shown on Table 2, most respondents (94.7%) indicated that they felt they were prepared to enroll in undergraduate programs. However, there was a high degree of variation regarding the level of preparedness, with just 19.7% indicated high level of preparedness, whereas 11.4% indicated only a partial level of preparedness. The percentage of students who indicated they perceived themselves as unprepared was very low (5.3%).

To answer the second research question (“What are the differences, if any, in perceptions of preparedness to enroll in undergraduate programs between male and female D/HH students?”), an independent-samples *t*-test was conducted to compare level of preparedness as related to gender. Since equal variances is assumed in this test (see Table 3), a significant difference (see Table 4) was found in the scores of male D/HH students ( $M = 89.68, SD = 15.91$ ) and female D/HH students ( $M = 82.73, SD = 19.38$ );  $t(130) = 2.26, p = .025$ . This indicates that the male respondents were found to have better perceptions of their preparedness for undergraduate education than their female peers.

**Table 3:** Statistics Related to Gender

Variable	Gender	N	M	SD	SEM
Scores	M	69	89.6812	15.911	1.915
	F	63	82.7302	19.380	2.441

**Table 4:** Independent Samples Test of Gender

Variable		Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	MD	SEM	95% Confidence Interval of the Difference	
									Lower	Upper
Scores	Equal variances assumed	3.092	.081	2.260	130	.025	6.951	3.075	.865	13.036
	Equal variances not assumed			2.240	120.265	.027	6.951	3.103	.806	13.095

The third research question was designed to investigate whether degree of hearing loss impacts perception of preparedness (“What are the differences, if any, in preparedness to enroll in undergraduate programs between deaf students and hard of hearing students?”). Since there were just two groups of respondents for degree of hearing loss (deaf or hard of hearing), again an independent-samples *t*-test was conducted to compare levels of perception of preparedness between these two groups. As shown on Tables 5 and 6, a significant difference was found in the scores of the deaf high school students ( $M = 83.94, SD = 16.24$ ) versus those of the hard of hearing respondents ( $M = 89.26, SD = 19.500$ );  $t(130) = -1.71, p = .089$ . It is worth mentioning that equal variance was also assumed in this case since the Levene’s test was .212, which is greater than  $\alpha$  level for the test (.05).

**Table 5:** Statistics Related to Degree of Hearing Loss

Variable	Hearing Loss	N	M	SD	SEM
Scores	Deaf	72	83.9444	16.243	1.914
	Hard of Hearing	60	89.2667	19.500	2.517

**Table 6:** Independent Samples Test of Hearing Loss

Variable		Levene’s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Scores	Equal variances assumed	1.574	.212	-1.711	130	.089	-5.3222	3.110	-11.476	13.036

## 5. Discussion

The quantitative analysis of the study participants’ responses revealed that the majority of the D/HH individuals ( $n = 125; 94.7\%$ ) who responded believed they were ready to enroll in an undergraduate program. This perception on the part of these high school students is a factor higher education stakeholders should consider when making decisions regarding establishing accommodations to support D/HH high school students in enrolling in higher education. Since research has found that self-perception regarding preparedness is a strong indicator of actual success, curriculum and instruction accommodations are critical to easing the path of these D/HH students in pursuing higher education as well as in avoiding drop-out.

The fact that gender and type of hearing loss were found to have significant impact on D/HH high school students’ perception of their level of preparedness must also be considered. Male D/HH respondents were found to exhibit higher levels of self-perception regarding degree of preparedness to enroll in undergraduate programs than their female D/HH peers who responded. This might be related to Appel et al.’s (2011) and Applerouth’s (2017) findings that female students have a tendency to underestimate their abilities, and to Torres-Guijarro and Bengoechea’s (2017) finding that female students judge themselves more harshly than their male counterparts. Therefore, Saudi education stakeholders must consider the strong possibility that although female D/HH student might in fact possess high levels of preparedness, they might also have a tendency toward low self-esteem regarding their abilities, which would lead them to underestimate their preparedness for pursuing higher education.

Type of hearing loss was also found to have an effect on self-perception of preparedness, where heard of hearing individuals indicated they perceived themselves as having higher levels of preparedness to enroll in higher education than their deaf peers; this implies that type of hearing loss impacts students’ self-esteem and perceptions of their ability to thrive in the higher education setting

(Bell & Swart, 2018). A possible reason for this is that hard of hearing students might have a better understanding of the community and culture of hearing individuals, due to their possession of some degree of hearing. Conversely, deaf students at times not only express a feeling of being marginalized by the hearing-dominant culture but also might embrace Deaf culture. In this case, it is not necessarily a matter of having lesser skills than their hard of hearing peers, but a matter of having lesser access to the hearing-dominant culture of higher education, which might create obstacles for them in recognizing and understanding the attitudes of hearing students and faculty members.

## 6. Summary

This research found that most Saudi D/HH high school students perceive themselves as prepared to enroll in undergraduate programs to at least some degree. However, as noted, male respondents indicated a greater degree of preparedness as did those students who are hard of hearing. These findings indicate that, given the overall readiness of these students to continue on to higher education, Saudi high schools should take advantage of the accommodations and directions presented by government initiatives such as Vision 2030, to ensure that D/HH high school students are consistently prepared and supported as they approach graduation to strongly consider and pursue enrollment in higher education. Such efforts should include counseling and vocational assessments to direct such students to appropriate fields of study that match their skillsets as well as direction to available accommodations that they can access—and which they are entitled to under the law—to ensure not just admission to universities but also to allow them to stay in school, avoid drop-out, and complete their undergraduate degrees. Universities also should work on adapting institutional and pedagogical practices to support these students in a successful higher education experience that avoids attrition, which can be achieved through orientation and advisory programs specifically designed to help D/HH students obtain the highest level of benefit from their enrolment in undergraduate programs.

## 7. Limitations and Recommendations for Future Research

This study had a number of limitations. First of all, the method employed for providing the link to potential respondents was via WhatsApp and Snapchat groups for D/HH individuals. There may be more direct methods for contacting D/HH high school students or high school graduates who have not yet enrolled in higher education, such as through high school administrators for the former group. In addition, only the responses of those individuals in the target group who live in Al-Qassim region were included, which might mean that the responses cannot be easily generalized to D/HH high school students or recently graduated students who live in other regions of Saudi Arabia.

The vast majority of the respondents ( $n = 110$ ; 83.3%) indicated that they utilize Arabic Sign Language for communication, meaning that even the majority of the hard of hearing respondents indicated that they rely on this method of communication, which may not be the norm among hard of hearing individuals. Therefore, obtaining a pool of respondents that is more evenly distributed in terms of communication methods (e.g., Arabic Sign Language, lip reading, total communication) is recommended for future studies. In addition, there may be a correlation between academic achievement of D/HH individuals in high school and the perceptions of these individuals regarding their preparedness for higher education. However, some of the respondents provided their GAT (General Aptitude Test) scores rather than the requested GPA, so it was not possible to draw clear correlations on this factor in this study. Again, this is a potential area for future research regarding the perceived preparedness of this demographic for higher education.

## References

- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior in D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173–221). Lawrence Erlbaum Associates. <https://psycnet.apa.org/record/2005-04648-005>
- Alajlan, M. (2017). *Knowledge and attitudes of faculty members at a Saudi university toward deaf and hard of hearing students in higher education* [Doctoral dissertation, University of New Orleans]. University of New Orleans Theses and Dissertations. <https://scholarworks.uno.edu/td/2288/>
- Alamri, M. S. (2011). Higher education in Saudi Arabia. *Journal of Higher Education Theory and Practice*, 11(4), 88–91. [https://www.researchgate.net/publication/267943128\\_Higher\\_Education\\_in\\_Saudi\\_Arabia](https://www.researchgate.net/publication/267943128_Higher_Education_in_Saudi_Arabia)
- Albertini, J. A., Kelly, R. R., & Matchett, M. K. (2012). Personal factors that influence deaf college students' academic success. *Journal of Deaf Studies and Deaf Education*, 17(1), 85–101. <https://doi.org/10.1093/deaf/enr016>
- Allossari, A. S. (2020). Vision 2030 and reducing the stigma of vocational and technical training among Saudi Arabian students. *Empirical Research in Vocational Education and Training*, 12(4), 1–24. <https://doi.org/10.1186/s40461-020-00089-6>
- Appel, M., Kronberger, N., & Aronson, J. (2011). Stereotype threat impairs ability building: Effects on test preparation among women in science and technology. *European Journal of Social Psychology*, 41(7), 904–913. <https://doi.org/10.1002/ejsp.835>
- Applerouth, J. (2017, August 15). Troubling gender gaps in education. <https://www.applerouth.com/blog/2017/08/15/troubling-gender-gaps-in-education/>
- Barrie, S. C. (2006). Understanding what we mean by the generic attributes of graduates. *Higher Education*, 51(2), 215–241. <https://doi.org/10.1007/s10734-004-6384-7>
- Barrie, S. C. (2007). A conceptual framework for the teaching and learning of generic graduate attributes. *Studies in Higher Education*, 32(4), 439–458. <https://doi.org/10.1080/03075070701476100>
- Baum, S., Ma, J., & Payea, K. (2013). *Education pays 2013: The benefits of higher education for individuals and society*. Trends in Higher Education. <https://eric.ed.gov/?q=%22education+pays+2013%22&id=ED572537>
- Bell, D., & Swart, E. (2018). Learning experiences of students who are hard of hearing in higher education: Case study of a South African university. *Social Inclusion*, 6(4), 137–148. <https://doi.org/10.17645/si.v6i4.1643>
- Boutin, D. L. (2008). Persistence in postsecondary environments of students with hearing impairments. *Journal of Rehabilitation*, 74(1), 25–31.
- Byrne, M., & Flood, B. (2005). A study of accounting students' motives, expectations and preparedness for higher education. *Journal of Further and Higher Education*, 29(2), 111–24. <https://doi.org/10.1080/03098770500103176>
- Fiske, S. T., Gilbert, D. T., & Lindzey, G. (2010). *Handbook of social psychology* (5th ed., Vol. 2). John Wiley & Sons. <https://doi.org/10.1002/9780470561119>
- Haggis, T., & Pouget, M. (2002). Trying to be motivated: Perspectives on learning from younger students accessing higher education. *Teaching in Higher Education*, 7(3): 323–336. <https://doi.org/10.1080/13562510220144798a>
- Hyde, M., Punch, R., Power, D., Hartley, J., Neale, J., & Brennan, L. (2009). The experiences of deaf and hard of hearing students at a Queensland University: 1985–2005. *Higher Education Research & Development*, 28(1), 85–98. <https://doi.org/10.1080/07294360802444388>
- Jansen, E. P. W. A., & van der Meer, J. (2012). Ready for university? A cross-national study of students' perceived preparedness for university. *The Australian Educational Researcher*, 39(1), 1–16. <https://doi.org/10.1007/s13384-011-0044-6>
- King Salman Center for Disability Research. (n.d.). October 27, 2021, from <https://www.kscdr.org.sa/en>
- Kingdom of Saudi Arabia. (2016). *Vision 2030*. <https://www.vision2030.gov.sa/>
- Kirst, M. W., & Venezia, A. (Eds.). (2004). From high school to college: Improving opportunities for success. Jossey-Bass. <https://eric.ed.gov/?id=ED496375>
- Lipka, S. (2006, September 8, 2006). After the freshman bubble pops. *The Chronicle of Higher Education*, 53(3), 42–43. <https://doi.org/10.1080/07377366.2005.10400082>
- Marschark, M., Lampropoulou, V., & Skordilis, E. K. (Eds.). (2016). *Diversity in deaf education*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780190493073.001.0001>
- McInnis, C., James, R., & Hartley, R. (2000). *Trends in the first year experience*. Australia Department of Education, Training and Youth Affairs.
- Onsman, A. (2011). It is better to light a candle than to ban the darkness: Government led academic development in Saudi Arabian universities. *Higher Education*, 62(4), 519–532. <https://doi.org/10.1007/s10734-010-9402-y>
- Pajares, F., & Kranzler, J. (1995). Self-efficacy beliefs and general mental ability in mathematical problem-solving. *Contemporary Educational Psychology*, 20(4), 426–443. <https://doi.org/10.1006/ceps.1995.1029>



- Powell, D., Hyde, M., & Punch, R. (2014). Inclusion in postsecondary institutions with small numbers of deaf and hard-of-hearing students: Highlights and challenges. *Journal of Deaf Studies and Deaf Education*, 19(1), 126-140. <https://doi.org/10.1093/deafed/ento35>
- Smith, J. R., Terry, D. J., & Hogg, M. A. (2006). Who will see me? The impact of type of audience on willingness to display group-mediated attitude-intention consistency. *Journal of Applied Social Psychology*, 36(5), 1173-1197. <https://doi.org/10.1111/j.0021-9029.2006.00037.x>
- Smith, J. S., & Wertlieb, E. C. (2005). Do first-year college students' expectations align with their first-year experience? *NASPA Journal*, 42(2), 153-174. <https://doi.org/10.2202/1949-6605.1470>
- Sniatecki, J. L., Perry, H. B., & Snell, L. H. (2015). Faculty attitudes and knowledge regarding college students with disabilities. *Journal of Postsecondary Education and Disability*, 28(3), 259-275. <https://eric.ed.gov/?id=EJ1083837>
- Technical and Vocational Training Corporation at a Glance.(2020). *Technical and Vocational Training Corporation*. Retrieved October 28, 2021, from <https://www.tvtc.gov.sa/pdf/TVTC-at-a-Glance.pdf>
- Torres-Guijarro, S. & Bengoechea, M. (2017) Gender differential in self-assessment: A fact neglected in higher education peer and self-assessment techniques. *Higher Education Research & Development*, 36(5), 1072-1084. <https://doi.org/10.1080/07294360.2016.1264372>
- van der Meer, J. (2008). *Mapping first semester challenges: First-year students making sense of their teaching and learning environments* [Doctoral dissertation, University of Otago]. <https://ourarchive.otago.ac.nz/handle/10523/540>
- University Education. *Ministry of Education*. (n.d.). Retrieved October 27, 2021, from <https://moe.gov.sa/ar/Pages/default.aspx>