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Why some jobs just 'sound' male: the Arabic language effect

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ABSTRACT

This study examines how language systems and school textbooks influence L1 Arabic students' perceptions of professional and political job roles. A custom-designed survey was used to assess how students associate jobs with gender when explicit grammatical markers are removed. Job titles were extracted from widely used Arabic language textbooks and reformulated into passive-structured sentences that avoided direct morphological gender cues. Sixty-two students from a public elementary school in Riyadh participated, selecting either the masculine or feminine form of job titles presented in the questionnaire. The findings indicate that while masculine job terms in educational materials contribute to gender associations, the broader Arabic language system has a stronger influence. However, exposure to gendered terms in textbooks reinforces these associations. This is the first study to investigate the effect of gendered suffixes on job-related linguistic cues among L1 Arabic students. The findings highlight the importance of gender-inclusive language in educational content to promote a more balanced perception of professional roles.

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Introduction

Role nouns in languages with grammatical gender often contain morphological markers that indicate the gender of the referent (Corbett, 1991; Raza et al., 2022). This contrasts sharply with languages that lack such markers. In gendered languages, gender is primarily based on either biological sex or psycho-cultural factors (Butler, 1990; Litosseliti 2021). Although English does not employ grammatical gender as many other languages do, its lexical choices are not entirely gender-neutral. For example, certain professions—such as 'nurse'—are commonly associated with females, which necessitates the marked term 'male nurse' when referring to a male practitioner. Similarly, the word 'doctor' is recognizably male-dominated because it defaults to a male term and has the classification 'lady doctor' for female practitioners. This highlights underlying biases in gender roles rather than a purely neutral system (Bhatti et al., 2019; Evans, 2004; Sasa, 2019). Meanwhile, this kind of gender non-specific label reinforces gender stereotypes that convey social expectations of gender in professional roles (Prosen, 2022; Yasmin et al., 2019; Boroditsky et al. 2003).

While the corresponding Arabic role noun for 'nurse' does not contain a neutral term, it has an equivocation based on whether the nurse is male or female. In the Arabic language, it is *Mumarid* for a man and *Mumaridt* for a woman; what specifies that the referent is female is the suffix -t in *Mumaridt* (Manfredi, 2017). This becomes problematic with respect to syllabus and language for studies that focus on gender differences because either the modification in morphology of the stimulus denotes the referent gender, or this could circumvent the gender-typical characterizations of these roles. For instance, the typical female representation associated with 'nurse' can be obscured—partially or even completely—when the role is expressed using a masculine grammatical form. In the sentence 'The nurse went to the

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office', it is unclear whether the nurse is male or female. Thus, to indicate that the nurse is male, one must use the possessive pronoun 'his' (either anaphorically or cataphorically), resulting in 'The nurse went to his office'. Similarly, using 'her' does not fully resolve the semantic ambiguity. English, however, distinguishes job titles by employing terms such as 'waiter' versus 'waitress'. In contrast, in Arabic, feminine job titles are almost exclusively formed by adding the suffix *-t* to the masculine form. For instance, *Mudaris* (teacher) in the masculine form shifts to *Mudarisat* when talking about a female, and *Mualif* (author) shifts to *Mualifat* for women. While the feminine version is specific to female referents, the masculine version can also be used generically to refer to either gender or a mixed-gender group. (Sadiqi, 2006). This study examines the gap in the literature regarding the effects of gender suffixes on L1 Arabic students' perceptions of professional and political job titles. While prior studies have initiated inquiry into the role of language in gender stereotypes and biases, there is little research on the effects of gender suffixes on job titles in Arabic textbooks. The research questions include the following:

1. What are the effects of gender suffixes used in school textbooks on L1 Arabic students' perceptions of professional and political job titles?
2. How do these perceptions correlate with the MoE (Ministry of Education) data?

The research questions are grounded in Sanford and Garrod (1998) research on scenario mapping and focus accounts. They argue that interpreting language involves not only understanding the main propositions but also considering information at lower levels of meaning. The primary task of language processing, they suggest, is to connect language input with existing knowledge, as demonstrated through examples involving plurals and quantified statements. Therefore, this study aims to fill the gap by investigating stereotypical gender cues in school textbooks and their influence on learners' gender perceptions and professional outlooks. By examining Arabic gender suffixes, the research extends scholarly discourse on the subliminal role of language in learning materials. It contributes significantly to the literature by exploring a hitherto neglected grammatical niche with substantial social implications, demonstrating how an element that might be dismissed as peripheral—the linguistic suffix—can have far-reaching consequences beyond the classroom.

Literature review

Gender and language

Languages vary significantly in their gender systems. Some languages and dialects classify all nouns into three categories—masculine, feminine, and neuter—even when referring to inanimate objects (Comrie, 1999; Corbett, 1991). The gender assigned to a specific noun requires gender agreement with other grammatical elements in a sentence, including adjectives, determiners, and demonstrative pronouns (Corbett, 1991. The declension and inflection of nouns and noun phrases may depend on factors such as sex, morphology, phonology, or social considerations (Comrie, 1999; Corbett, 2006). In cases where semantic cues are absent, the correlation between a noun (or noun phrase) and its gender can be arbitrary, resulting in certain nouns being assigned different genders in different languages (Berman, 1981). Moreover, asymmetry in naming conventions extends beyond professional titles to broader linguistic structures that frame male identity as the default. Studies by Yasmin et al. (2018), Jabeen and Afzal (2023), Rashid et al. (2024), and Wan et al. (2023) have demonstrated that in various cultures, women are often identified in relation to male relatives—for example, through the frequent use of the prefix 'Mrs'. for women—which reinforces their secondary status. In many languages, including Arabic, where grammatical gender is a feature, human role nouns typically include a morphological marker that specifies the gender of the referent (Corbett, 1991; Manfredi, 2017). This can create a problem for researchers interested in studying gender roles with experimental stimuli because the morphological features of a stimulus will reveal the referent's gender and ultimately circumventing a gender-typical representation of the role (Gygax et al., 2008). The process for creating feminine role nouns in Arabic almost exclusively involves the addition of the feminine suffix -t to the masculine term, which creates female specificity (Sadiqi, 2006). Nonetheless, this process can sometimes create unintended meaning. For example, if we

add the feminine suffix to the Arabic word alnnaqib (member of parliament), we yield the word alnnaqibt, which means 'calamity' (Manfredi, 2017). In Arabic, the general feminine marker is the feminized suffix, -t—pronounced as either -t or -h (Clarke et al., 1981). While the suffix -t is indicative of the most common feminine mark, feminine nouns in Arabic may also occur with a suffix of (ا-aa) or (ى-aa) (Alhawary, 2011; Ryding, 2005). As a grammatical principle, any Arabic noun without a feminine suffix is a masculine or a generic term referring to both genders. It can be the case that a masculine noun also has the feminized suffix -t, or vice versa (Ryding, 2005).

Prior research has investigated the relationship between the structure of a language and the perception of gender. For example, research indicated that phonology in English provides valuable information about gender; one connectionist model indicated an individual's gender could be predicted accurately on phonological properties of a name. Additional experiments indicated that English speakers acquire these phonological cues, as participants classified names into male or female categories more quickly and accurately when they were phonologically typical (Cassidy et al., 1999).

Children learn the grammatical gender system of their native language by utilizing syntactic, semantic, and formal gender indices (Franceschina, 2005). Sato and Athanasopoulos (2018) investigated the role of grammatical and gender-stereotyped information in interpreting reference nouns in bilingual cohorts and found that bilingual speakers encode gender based on the language being used and re-encode that information when switching languages. The amount of the switch depends on the degree of proficiency in the second language. More recently, studies have indicated that people's perceptions and use of gendered language are interconnected. As found in a study in which participants were asked to provide adjectives which matched given nouns, the adjectives provided were unconsciously informed by the structure of their language (Wang & Curdt-Christiansen, 2021). Additionally, speakers of different languages have different gender associations even when describing the same noun, for example, German and Spanish speakers created different gender association of the noun 'key' when asked (Wang & Curdt-Christiansen, 2021).

Gender and education

The gendered language used in education primarily shapes society's attitudes and beliefs. Elnagar et al. (2021) state that the words students learn in schools are effective in society, particularly when teaching is consistent and repeated simultaneously. A study of employees in the Jordanian Parliament reveals that when gendered titles and jobs are used, the public trusts and accepts these title distinctions; however, the participants believed that the ideologized social responsibilities of men were not of greater value than those of women (Shteiwi, 2015).

The relationship between education and gender can be understood within the framework of Scenario Mapping, as proposed by Sanford and Garrod (1998). They describe the effect of education on gender in terms of how individuals construct meaning from text or visual stimulus by building mental representations or scenarios. These scenarios, in turn, allow individuals to make inferences and fill in gaps in the information while also creating a unified and coherent understanding of the text. This concept can also be applied to understand how children learn and internalize gender roles and typification. As Smith et al. (2015) outlined, children use gender to identify people and categorize the world around them from a young age. They will develop mental representations that connect certain behaviors, attitudes, and occupations as gendered objects during the early years. These gendered representations acquired during childhood continually have effects on individuals over their lifetime. Educators, as noted by MacNell et al. (2015), are also affected by these deep-rooted stereotypes and may unconsciously exhibit biases in their teaching, thereby reinforcing gendered attitudes, roles, and occupational expectations. As children progress through their education and eventually enter adulthood, they internalize the ideologies and beliefs associated with gender roles, mastering generalized notions about femininity and masculinity and learning to categorize themselves and others within domestic and professional hierarchies. These categorizations are based on the received orthodoxy or commonly accepted beliefs about gender roles.

Blazar and Kraft (2017) argue that schools can be a primary source of these representations, influencing students' future attitudes and character. It is fundamental that learning resources do not reflect or

entrench stereotypical gender values, as children are highly impressionable and receptive to new ideas. A study by McCabe et al. (2011) suggested that many teachers may hesitate to challenge conventional gender stereotypes for fear of disturbing the established orthodoxy (McCabe et al., 2011). He argued that children's books are among the most powerful instruments for inculcating standards, ideologies, and values. As such, children's books play a significant role in shaping perceptions of gender and in categorizing roles accordingly (Gooden & Gooden, 2001). Weaver-Hightower (2003) further emphasized the importance of being mindful of subliminal messages about gender development in these texts.

Loaded gender values in language can serve as a signal for socially established gender norms (Pépiot & Arnold, 2021). Women have often lagged behind men in many professional fields, partly due to these linguistically entrenched norms (Akerlof & Kranton, 2000; Alotaibi et al., 2025). Some societies have taken steps to address gender issues by incorporating gender-sensitive schoolbooks. For example, Smith (2005) examined 21st-century German schoolbooks, including mathematics textbooks, to assess the attribution of significant roles to males and females. The study concluded that these textbooks employed gender-equal language and visual representations regarding the roles of males and females, both in professional and parental contexts. In Qatar, a study reported that 'female jobs' were less varied and confined to stereotypes, whereas male professions were more diverse (Yasin et al., 2012). Similarly, in Jordan, women were limited to six occupations—mostly related to nursing or teaching—while men had access to more than 20 professional roles (Edres, 2022). A study on the gendering of jobs in a ninth-grade Arabic language textbook in a UAE school found that over 92 professional occupations were associated with men, compared to only five associated with women (Al-Qatawneh & Al Rawashdeh, 2019). Thus, we assume that social assumptions concerning what it means to be male or female are elements of a shared ideology. The conventional categorization of gender roles can become so entrenched and unchallenged that it shapes policies and limits opportunities for certain groups, rendering them powerless as gender considerations become normative (Imran & Chen, 2023; Weatherall, 2005).

Gender and jobs

Language influences gender perceptions, serving as a tool for social construction that can impact female participation in the workforce both positively and negatively. The effects of gender stereotypes extend beyond language to shape career trajectories and self-perception. Studies, such as those by Yasmin et al. (2018), have shown that prolonged exposure to gendered work labels can lead to internalized bias. This may lead to reduced confidence among individuals, as females may restrict their employment opportunities to what is socially deemed to be appropriate, and males might develop a biased perspective toward more gendered career opportunities (Bolat & Odacı, 2017; Iqbal et al., 2022). Evidence of a gender gap within a variety of career fields was found in the Global Gender Gap Report (WEF, 2022), where the report has identified some countries where females have historically been under-represented, since women, on average, find inaccurately labeled professional, technical, or political career opportunities not available to them. Table 1 presents job share by gender across European to Middle Eastern countries in 2022.

Gender views and educational material can constitute a self-perpetuating cycle of influence from society. This phenomenon is especially apparent in languages that have a gender bias, whereby the educational material both produces and reinforces the gendered worldview, including views towards male and female roles in the workplace. For instance, a study has shown that children rely on the gendered words in occupational titles as a source of information. The results suggested that the marked titles in the masculine and feminine form were interpreted as exclusionary, while even unmarked titles created ambiguity for some children (Liben et al., 2002).

Methodology

This research employs a custom-designed questionnaire to investigate the impact of gender suffixes on the interpretations of job titles by L1 Arab students in professional and political contexts. In the questionnaire, Arabic job terms were replaced by passive-structured items, followed by either feminine or masculine nouns denoting the job title. The gender of the alleged job performer was never mentioned. Thus, there was no conceptual or non-conceptual reference to gender. Both morphological gender cues and suffixes were entirely eliminated from the items. Representative textbooks were systematically

Table 1. The report from WEF on the distribution of professional & political jobs to gender in 2022.

WEF global gender gap report 2022				
Country name	Rank	Professional & technical positions	Political participation	
Sweden (Northern Europe)	5 out of 156	• 51.3% Female • 48.7% Male	(Parliament) • 47% Female • 53% Male	(Ministerial Positions) • 57.1% Female • 42.9% Male
Germany (Western Europe)	11 out of 156	• 52% Female • 48% Male	(Parliament) • 31.5% Female • 68.5% Male	(Ministerial Positions) • 40% Female • 60% Male
Jordan (Middle East)	131 out of 156	• 38.2% Female • 61.8% Male	(Parliament) • 11.5% Female • 88.5% Male	(Ministerial Positions) • 9.4% Female • 90.6% Male
The United Arab Emirates (UAE) (Middle East)	72 out of 156	• 21.8% Female • 78.2% Male	(Parliament) • 50% Female • 50% Male	(Ministerial Positions) • 27.3% Female • 72.7% Male
Qatar (Middle East)	142 out of 156	• 23.4% Female • 76.6% Male	(Parliament) • 9.8% Female • 90.2% Male	(Ministerial Positions) • 7.1% Female • 92.9% Male
Saudi Arabia (Middle East)	147 out of 156	• 23.9% Female • 76.1% Male	(Parliament) • 0% Female • 100% Male	(Ministerial Positions) • 19.9% Female • 80.1% Male

reviewed to collect job-related terms, which were then used to populate the questionnaires. Participants were then allowed to select either the masculine or feminine form in each sentence, which enabled the examination of implicit associations with gender. This type of design allowed for the study to interrogate how students may mentally represent gender relations in job roles in the absence of explicit linguistically-derived gender references.

The study was designed to systematically explore gender perception in job titles by intentionally using similar linguistic features to minimize exogenous bias. This greater uniformity in stimuli indicated that all participants would interact with identical stimuli, which led to a more straightforward comparison of participants' perceptions. The structured format of the questionnaire allowed for quantitative comparison, facilitated replication, and provided assurance of reliable data assessments, which served to make it the best design to assess language and educational exposure impacting gender perception of Arabic job terminology.

Sampling procedure

The researchers received permission from Public Elementary School Number 210 in Riyadh City to recruit participants for the study. After they received approval, classroom teachers teaching fourth to sixth grades were given a description of the study's aim and procedures. Teachers then provided information sheets and consent forms to their students, allowing students and their parents or guardians to review the study details and ask questions. The student information sheet included the purpose of the study, procedures, potential risks and benefits of the study, as well as the fact that the study was voluntary and a student could choose not to participate or withdraw at any time without penalty. The final sample included 62 students (31 boys and 31 girls) with a mean age of approximately 11 years (SD = 1.11). The participants were native Arabic speakers who were currently enrolled in the fourth, fifth, or sixth grade of the selected school. Convenience sampling was used to select participants, and all eligible students who met the inclusion criteria were invited to participate.

The selected school serves a diverse student population with several hundred students and approximately 20 to 40 teachers. As Riyadh is a multicultural city with a mix of Saudi nationals and expatriates, the school reflects a range of socio-cultural backgrounds. The school was randomly chosen to minimize selection bias and to ensure a sample that could provide insights into the broader population of elementary school students in Riyadh.

Data collection procedure

The data collection process involved three stages:

Stage 1: Textbook selection and review

During the initial phase, the researchers spent four weeks reviewing relevant Arabic language textbooks for grades four, five, and six. A systematic approach was used to select textbooks that primarily focused on Arabic language skills, such as reading and writing, rather than on science or mathematics. Priority was given to textbooks widely adopted in public schools throughout Saudi Arabia. The review process involved carefully scanning each textbook for instances where professional or political job titles appeared in reading passages, exercises, or example sentences. Whenever a job title was found, it was documented along with its grammatical form—whether it was presented in a masculine, feminine, or neutral (un-suffixed) form. The frequency of each job title and its gendered representation were also recorded. This review was conducted prior to survey administration to ensure the inclusion of appropriate job items for analysis.

Stage 2: Job items and survey administration

In the second stage, job items were selected from the reviewed textbooks and incorporated into a survey administered to the participants. The goal was to determine whether students' exposure to gendered job titles in their educational materials and the broader language system would influence their perception of gender in professional and political roles when explicit grammatical gender markers were removed. To achieve this, a total of 20 job titles—7 political and 12 professional—were identified based on their frequency and representation in the MOE textbooks. The job items were subsequently converted to passive voice sentences that lacked explicit grammatical markers of gender.

After the job items were established, the survey was administered to students in the fourth, fifth, and sixth grades. For each occupation, students were asked to report whether they associated the occupation with either the masculine or feminine form of the job title. This method allowed the study to examine whether students unconsciously connected some occupations to a particular gender although there was no linguistics gender markers.

Stage 3: Data analysis

In the final stage, the collected data were evaluated for internal consistency and reliability using Cronbach's alpha coefficients. The data for professional and political jobs demonstrated high reliability, with Cronbach's alpha coefficients of 0.90 and 0.81, respectively, indicating strong internal consistency among the items in each category. After validating the questionnaire, the data were analyzed using ANOVA test to determine the correlation between gender and job perceptions as expressed by the students. The jobs were classified based on their stereotypical gender representations, categorizing them as typically male or female.

Results

The purpose of this study was to learn how much gender suffixes on schoolbooks affect L1 Arabic students' perceptions of both professional and political job titles, compared to the gendered assignment in the MoE textbook data. Building on Sanford and Garrod (1998) scenario-mapping and focus account, the study posits that internalizing gender roles involves constructing mental scenarios that extend beyond explicit instruction.

The analysis of variance (ANOVA) was employed to compare means and identify differences in participants' questionnaire responses based on gender, grade, suffix type (masculine or feminine), and job type (professional or political). As shown in Table 2, while gender and grade were not significant factors, the type of suffix had a significant impact on students' responses. This finding is further detailed in Table 3. Specifically, the ANOVA results indicate that the parameter of suffix type significantly influenced students' responses, suggesting that the gender suffixes in school textbooks affect students' perceptions of gender and job titles. However, the weak Pearson correlation coefficient between the MoE data and the survey results ($r = -0.0043$, $t = -0.03861$, $p = 0.9693$) suggests that additional factors may also play a role.

Figures 1 and 2 present bar charts comparing the frequency of responses for masculine (un-suffixed) and feminine (suffixed) job titles in the MoE data and the questionnaire. The results reveal that masculine

Table 2. Results of analysis of variance (ANOVA) for the first factor (participants' gender).

Effect	Degr. of freedom	Sum-Sq	Mean-Sq	F-value	Pr(>F)
Participant (gender)	1	0	0	0.001	0.98*
Suffix Type	1	5280	5280	70.212	1.46e-12***
Type of Job	1	0	0	0.000	1.00
Residuals	80	6017	75		

Significance level: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

Table 3. Results of analysis of variance (ANOVA) for the second factor (participants' grade).

Effect	Degr. of freedom	Sum-Sq	Mean-Sq	F-value	Pr(>F)
Participant (Grade)	2	156	78	2.066	0.131
Suffix Type	1	3584	3584	94.943	<2e-16 ***
Type of Job	1	0	0	0.002	0.961
Residuals	121	4568	38		

Significance level: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

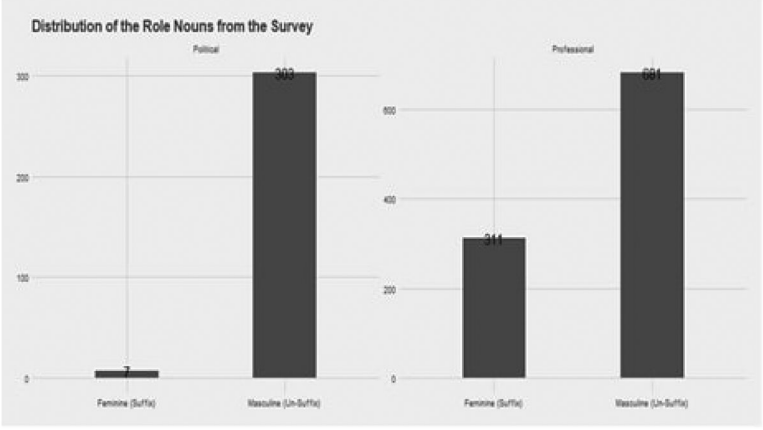

Figure 1. Distribution of the Role Nouns from the Survey.

job titles were mentioned more frequently in the MoE sample and were selected more often in the questionnaire. Additionally, the number of political jobs associated with masculine (un-suffixed) titles increased drastically, while the increase for feminine (suffixed) titles was slight. For professional job nouns, questionnaire responses totaled 681 for masculine (un-suffixed) and 311 for feminine (suffixed) jobs. In contrast, the MoE data reported 197 masculine (un-suffixed) nouns and 311 feminine (suffixed) job titles.

Figure 1 shows the distribution of all the role nouns (jobs) from the 62 students' survey answers into the suffix type (Masculine and Feminine) and the job type (Political and Professional).

Figure 2 shows the distribution of all the role nouns (jobs) from the MoE textbooks of the Arabic language into the suffix type (Masculine and Feminine) and the job type (Political and Professional).

Figure 3 presents a scatterplot of the relationship between the MoE data and questionnaire responses. The weak correlation between these two data sets suggest that language systems may be a primary factor influencing individuals' perceptions of gender roles. Furthermore, the findings emphasize the significance of gender suffixes in identifying potential risk factors for children that might be overlooked in language studies. Importantly, the results also indicate that examining suffixes within different gender contexts in school textbooks does not confuse children about employment situations.

Figure 3 displays the correlation between the 62 students in the questionnaire and the content analyzed from the MoE textbook data. The R-value $= 0.0043$ shows a weak relationship between the two data sets. The P-value indicates that the correlation is insignificant ($p > 0.10$).

Discussion

The present study aimed to investigate the influence of Arabic suffixes on students' perceptions of gender in job titles when reading sentences. Unlike neutral-gender languages such as English—where

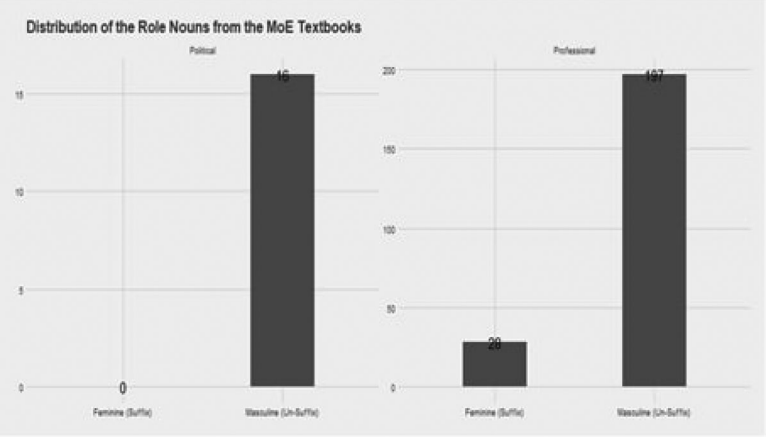

Figure 2. Distribution of the Role Nouns from the MoE Textbooks.

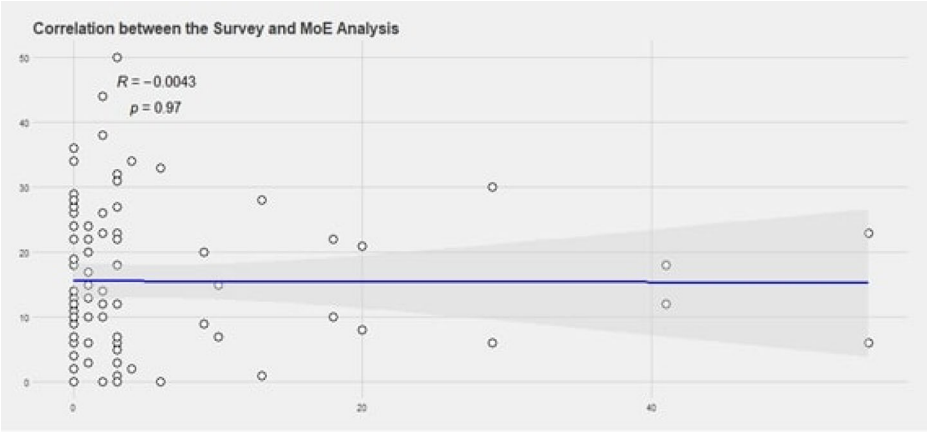

Figure 3. Correlation between the Survey and MoE Analysis.

gender-specific grammatical cues typically indicate the speaker's gender (e.g. 'The doctor went to her office')—the stereotypical influence of gender in grammatically gendered languages is distinct. To address this, the study replaced direct Arabic job terms with passive-structured items followed by either feminine or masculine job nouns, without referencing the gender of the person performing the job. These items contained no conceptual gender information, and both morphological gender cues and suffixes were completely avoided.

The results offer important insights into how gendered nominal suffixes contribute to job-related gender differentials and influence individuals' perceptions of gender roles. The findings suggest that gender suffixes in school textbooks significantly impact L1 Arabic students' perceptions of professional and political job titles. Although the weak correlation between the MoE textbook data and the survey results indicates that other factors may also influence students' responses, the ANOVA results confirmed that suffix type (masculine or feminine) significantly affected the students' responses.

Bar charts presented in Figures 1 and 2 reveal similarities between the two job categories, indicating that the study's findings matches what the children were studying in the MoE textbooks. The results further suggest that socio-cognitive factors play a key role in shaping students' perceptions of gender roles in professional and political contexts. It seems that students may automatically activate corresponding grammatical gender agreements with role items, regardless of the explicit presence of gender suffixes. This phenomenon can be explained using the scenario mapping framework (Sanford & Garrod, 1998), which posits that understanding an utterance involves activating specific text units stored in long-term memory. In this study, generic nouns were triggered by the items in the Arabic system, and the effects of suffixes were faithfully recorded in long-term memory.

Interestingly, the study found an increase in the percentage of professional role nouns with feminine suffixes. In some cases, role nouns in the MoE items were exclusively masculine, yet participants showed

a higher tendency to select the feminine (suffixed) forms. For example, the role 'teacher' received 34 responses as a feminine noun and 28 as a masculine noun. Conversely, the feminine form for 'manager' was selected 29 times, while the masculine (un-suffixed) form was chosen 33 times. These findings suggest that, in the absence of syntactic cues and explicit suffixes, jobs traditionally dominated by one gender are more readily interpreted as female-oriented than male-oriented. The passive sentence structure in the questionnaire led to a higher acceptance of roles assigned to females, even though most changes occurred in role nouns typically associated with women. The results further indicate that in the initial stages of language processing, children are primarily influenced by their native language system. In later stages, however, other social factors may come into play. In this study, students perceived masculine (un-suffixed) role nouns as suitable for both male and female occupations, whereas feminine (suffixed) forms were seen as appropriate only for female occupations. This imbalance can be attributed to the inherent structure of the language.

Another possible explanation for the findings is that the questionnaire items may have elicited socio-cognitive effects due to gender campaigns in Saudi Arabia, such as the Kingdom's 2030 Vision and evolving media representations of women. These campaigns may have subconsciously activated specific gender role associations in the readers, even when the language used was overtly gender-neutral. As a result, the feminine suffix -t may have been automatically tied to specific functions, thus limiting the referent gender, whereas masculine items would trigger a more generic masculine interpretation in the Arabic language system. This indicates the important influence of social and cultural variables on how people think about gender roles, and suggest that we should consider the wider context in which language is acquired and used. Cultural variables—such as social norms, values, traditions, and historical contexts—are crucial in shaping people's perceptions of gender roles. Cultural variables shape language use, expectations, and behavior, which are evident in the family, education systems, media portrayal, and gender campaigns. Examining these cultural variables in detail promotes a more comprehensive understanding of how gender roles are constructed taken up into culturally significant practices. In some cultures, traditional gender roles may be firmly established, affecting language and behavior; in other cultures, more progressive tensions toward gender equity might be represented in language considerations that challenge traditional gender roles.

Contribution

This study is the first to explore the influence of gendered language on students' gender role perceptions in Arabic. The paper dives into how gendered language influences students' understanding of gender in educational settings and highlights the need for more inclusive representations of gender in educational contexts. The findings suggest that school curricula should inspire gender equity and challenge traditional gender constructs, thereby increasing students' ability to envision a spectrum of options for all genders. This study builds on the previous work of Cameron (1997) and Skelton (2001), who argued for a more comprehensive and balanced view of gender in curriculum content. This study also extends previous work on gender employment by demonstrating the importance of using gender-neutral and inclusive language in various contexts beyond job titles. Gender inclusive language in textbooks, curricula, and educational materials would mitigate gender biases, disrupt stereotypes, and promote equal opportunities for all genders. Moreover, this study suggests that using gender inclusive language does not just stop at professional job titles but should extend to social, political, and cultural topics and contexts. By representing a more diverse and inclusive view of gender roles throughout curricula we can work towards breaking down barriers and supporting a more just worldview for future generations.

Study limitations

While the study's contribution to L1 Arabic users in the Middle East is significant, it has some limitations. The first limitation is that the study only included students from a single school, and thus may not covered all the factors that influences the perceptions related to gender. Furthermore, external factors not directly related to the textbooks may have influenced the answers, and without collecting data from

other schools, it is impossible to isolate the effect of these factors. Future research should gather data from multiple schools with larger participant groups to substantiate these findings. Since the study focused solely on the Arabic language, the same patterns may not be observed if the study were replicated with other languages. Engaging with other languages would present a more holistic view of how language interacts with meanings related to gender and occupations. Despite its limitations, the study presents a valuable opportunity to gather more research supporting the interaction between language and contextual perceptions related to gender and occupations.

Conclusion

The research suggests that language is more than a means of communication; it also determines how we perceive the world, including our thoughts on gendered roles from social, economic, and cultural perspectives. The results show that gendered suffixes of Arabic nouns influence students' associations with professional job titles, illustrating the language's potential to both reinforce and contest traditional gendered norms. This study bridges gaps in the literature and provides valuable insights for future research on representations of gender in Arabic language school textbooks and beyond. The strength of the social association of 'men and career' and 'women and family' appeared to vary, specifically with respect to noun roles in occupational items. These results help facilitate new opportunities to explore language use and the impact of language on gendered perceptions in other languages and among students with diverse linguistics backgrounds.

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