

## ALGERIAN FEMALE ENGINEERS CHALLENGING THE MASCULINE CULTURE OF ENGINEERING: A LOOK AT GENDER AND PREVAILING BARRIERS

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**Abstract:** The present article focuses on women's integration into male-dominated domain to offer insights into Algerian female's experiences in engineering as a male-dominated occupation. It aims to identify some of the many barriers imposed by cultural assumptions on female workers in general and engineers in particular. Although, their experiences varied, they revealed that Algerian female engineers encounter significant resistance from male-counterparts. To fit the above need, this study is meant for the examination and identification of the historical nature of engineering. Thus, it draws on the resources of well-known methodological frameworks as CDA and FCDA that serve to fully understand the problem of women in engineering with men and the taken-for-granted masculinities of engineering. Every case of female's experience is representative of three main challenges; female's numerical minorities, (in)visibility issues at engineering workplace and the combination between work and family life. Evidently, the dominance of masculine culture of engineering strongly legitimizes male's presence as the norm and restricts female's entrance in engineering. To this end, traditional ideas about the division of labour as well as gender discrimination continue to force the stereotypical notions about men's and women's career choice and perception of work.

**Keywords:** Barriers, female engineers, gender, male-dominated, masculine culture of engineering.

### 1. Introduction

The reality of Algerian women has been subjected to constant changes intermingled with social, political and religious contexts of each period. Therefore, approaching Algerian women's economic participation remains a highly complex issue especially when it is linked to power dynamics, gender relations, patriarchal systems and stereotypes that intersect together within the process of naturalization of different social conventions and norms which put women's status into question. Particularly, the public role of women is a central issue in Algeria. As women become more educated today, they gain more rights and freedom that influence their participation in the labour force. This trend of women empowerment brought up the tendency to be engaged in male's jobs. Rebah (2007, p. 09-10) argues that women who start to own business and act as directors "put the catalogue of permitted gender roles into question. The woman who inserts herself into the masculine domain defies existing structure". Women's work

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is no longer based on pure financial or marital needs; therefore, it defies acceptable social norms since work continues to be part of individual's identity and a source of satisfaction. Women engaged in non-traditional professions i.e. masculine domain, encounter constraints in the course of in/visibility as a highly complex process marked by exclusion and disadvantaged practices. Women working in masculine domains are the ones who work hard as workers and at the same time to gain recognition as women to receive equal treatment as men because they are also subject to the men's "gaze" (Foucault, 1977) in terms of their feminine bodies.

The cultural environment of engineering is strongly related with how workers both create the culture of their environment and how they are affected by such environment that reinforce the naturalized and the taken for granted gendered practices. Beyond, engineering workplace privileges men i.e. masculinity and forces women to "fit in" the male dominated norms of engineering that is a hard task for women to perform in order to challenge the institutional gender relations to be accepted as workers in such domain.

Evidently, Research about the experiences of women in engineering professions and education highlights the tension and challenges that surround the field of engineering when it comes to the gendered practices and the underrepresentation of female engineers since the culture of engineering workplace and education is perceived as men's domain and a male's oriented occupations.

## **2. Literature Review**

### *1.1. Power Dynamics at Workplace*

Researchers in discourse analysis studies paid attention to the particular way that discourse contributes to construct gender as well as professional identities at workplace. In this regard, workplace culture is a context of the existent realities about power relations and gender norms tied to the normative position of the social groups i.e. men and women. Power relations strongly operate in the workplace through overt or covert ways -decided upon by the dominant members- to govern people's behaviour, interaction, styles, actions and relationships through prevailed talk and action which are unmarked, naturalized and normalized. Holmes (2006, p.19-20) claims "both power and gender relations may be constructed unobtrusively, through taken-for-granted, 'naturalized' conversational strategies, and reinforced in everyday, unremarkable, workplace interactions. It is those who are in positions of power deciding what is correct or appropriate in an interaction: who may talk, for instance, and for how long; what counts as a relevant contribution, and what is considered a digression."

In 1995, Adkins examines the practices constituting gendered workplace through the "gendering of contemporary labour market" which highlights the role of power relations between men and women in employment. She argues (Adkins, 1995 cited in Pilcher & Whelehan, 2004, p. 60) "advantage and disadvantage, exploitation and control, action and emotion, and meaning and identity are patterned through and in terms of a distinction between male and female". According to Adkins' study (1995), men and women working in leisure parks perform their work differently; women's work is doubled in order to fit the norms of this kind of workplace; a woman had to be a worker like man and a "sex worker" that is to say she is a sexual object more than being a worker like man in terms of being attractive to her co-workers and bosses. Adkins (1995, p. 147) states "to be workers, women had to be "attractive" workers and carry out forms of sexualized work, whereas men did not have to do this"(cited in Pilcher & Whelehan, 2004,p. 60) . Adkins argues that men's and women's works are gendered regardless of their performative roles as well as their status as workers in their occupations. Through Adkins lens, femininity and masculinity are produced through the gendered practices which are deeply influenced by the social expectations as well as essential differences and categorizations dictated between men and women.

## 2.2. Engineering: The Relevance of the Masculine Working Culture

Sagebiel (2008) claims women's big challenge is to work in a masculine domain as a minority group. They make a hard work to prove to the company that they are fully fledged to gain acceptance compared to male engineers who feel that they are in their own space. Sagebiel (2008, p. 423) states that women have "to prove that they are competent, working hard, know what they are doing and what to be taken seriously". One reason is tied to women's status and different position as secondary to men in the family and society. Sagebiel (2008) further explores women's coping strategies in order to survive and assert themselves in men's culture in order to demonstrate difference and equality. Being minority group, women have to use "great self-assurance" in order to cope with traditionally masculine culture that is mainly "the culture of sexist jokes" (2008:424). Yet, they find obstacles with men who in turn show "much more self-assurance" than women. For instance, women have to adopt a coping strategy to deal with "sexist or stupid jokes" by "finding a joking way to react on sexist jokes" that need "a lot of sensitiveness and delicacy" which is not the case for men. In the same vein, Sagebiel (2008) draws on the career progression barriers that face women in engineering; among the barriers that women engineering managers identify are those related to societal and company internal reasons tied to:

- a. Gender stereotypes
- b. Traditional ideas about gender division of labour
- c. Traditional role concepts
- d. Men's networks and restricted entrance of women on the other hand

Besides, men's network stands as a barrier against women's progression in engineering that is oriented by hegemonic masculinity. As a result, men share their network even after working hours (informal network) while women are excluded and do not participate because they prioritize their family duties.

## 2.3. The gendered/ing of engineering workplace

Women's enrolment in engineering is decreased due to "the subtle taken-for-granted gender dynamics" to get membership in engineering. Faulkner (2006) raises a central question "how are the practices, cultures and identities of engineering more appealing, comfortable for and supportive of (more) men engineers than women?" i.e. her study demonstrates how engineering practices are gendered to the way they create particular masculinities and femininities in engineering. In order to re-establish their belonging into engineering, engineers have to learn to behave according to the company's context and culture. Faulkner (2006) provides the following analysis for the purpose of identifying the problems and causes that face the progress of women in engineering.

### 2.3.1. The problem of retention

The main reason behind this issue is the educational context of engineering because many students find engineering difficult and governed by inclusive gender dynamics about gaining membership in the gendered/ing engineering community. These power dynamics serve the masculine culture as claimed by Faulkner (2006:14) "the masculine coding of engineering work is evident in the assumption of hands-on skills, in stereotypes of the engineer, and in the celebration of technician engineering identities. Through numerous gender dynamics, engineering workplace culture function, to varying degrees, as men's spaces which women engineers (and some men) have to 'fit in' to or remain on the margins of". Faulkner (2006) elaborates the term "gender in/authenticity" to highlight the "normative pressure" in which men are expected to be the norm and perceive engineering as a self-evident choice and more "gender authentic" for them and always make women's presence as different from the norm i.e. men's

position is never questioned, unremarkable and unnoticed while women's presence tends to be "unusual" and a gender/sexually visible. Hence, Faulkner (2006) states that gender in/authenticity refers to "*the non-congruence of gender and engineering identities for women, and the congruence of these identities for men*".

### 2.3.2. *The image problem of engineering*

There is a problem with engineering per se because people find it difficult because of gender based stereotypes, as Faulkner (2006: 06) states: "*the classic stereotype of engineering is heavily gender marked*". The image problem of engineering is based on the dichotomy between "*the conventional gendering of a dualism or dichotomy between 'the technical' realm and 'the social', by which men/ masculinities are readily associated (symbolically) with technology and women/femininities with people*". Both the "technical" and the "social" are mutually exclusive for men and women of engineering which inherently draws on the conventional gender differences between men and women using different styles in engineering; women use better social and communicative skills, while men use more tools and technology because simply they have pleasure in technology.

There is an evidence of a great mismatch between the actual image of engineering that demands both the technical and the social skills which are provided by both men and women, and the image of engineering that reinforces the gender differences between men and women such as:

-Both men and women are attracted by science and technology

-It is claimed that men and women use different styles of working; women rely on social skills (the communicative skills) while men use more technological and latest tools. Yet, the vast majority of men and women engineers have better social skills i.e. they work on improving their social interactions like "*handling conflicts, difficult work relationships, collaborating with clients and contractors, team building and motivating staff, mentoring junior staff, working under pressure*" (Faulkner, 2006).

The study of Faulkner (2006) uncovers a strong operation of gender stereotypical image that revolve around the practices of engineering i.e. more supportive of men who value technology than women who are socially skilled. This fact draws on the conventional dualism of the "technical/ social" as mutually exclusive in engineering culture; thus, gender inauthentic for women. In order to challenge the conventional gendering of the technical/ social dualism i.e. associating men/ masculinities with technical and women/ femininities with social things, people have to draw on the mismatches between the image of engineering and the actual practices in engineering through recognizing the applicability of both technical and social skills -decreasing the "technicist" image of engineering-as a way to promote and normalize the proportion of women.

### 2.3.3. *Troubled engineering identities*

As it is claimed by Faulkner (2006), engineering is a mixture between the technical and the social skills. Yet, engineering provides "*troubled engineering identities*" which are sustained with both gender and professional dynamics. The mismatch between social / technical dualism and the actual image of engineering empower men with technical skills associated with masculinities as "strongly masculine coded" and indoctrinate the stereotypical images of the real engineer. Hence, engineer's professional identity is based on the "available masculinities of real engineer" while women engineers' status remains at risk and "fragile" compared to men's.

Engineering identity is constrained with the gendered practices and the conventional stereotypes about the image of engineering which calls for the urgent need to recognize the diversities that exist amongst individuals in order to attract talented people to get the best valuable culture of engineering without any requests for limited characteristics or demands of social and technical realms polarizing the differences between men and women as essentially different.

#### *2.4. Male strategies for female exclusion from engineering*

The study of Tonso (1996) highlights the cultural and professional processes that systematically exclude female engineers from engineering reinforced by gender stereotypes about femininity “as different” from the norms of this profession dictated by man as a dominant group. Tonso (1996) aims to investigate the different ways students develop “an engineering culture better suited to modern exigencies, might do to promote changes in the “traditional” culture of engineering” (1996, p. 94). Tonso (1996), then, makes a comparison between being a male and being a female in engineering; being a male student means being comfortable in a culture they belong to, associated by people like them. Thus, their image is reinforced and their presentation is privileged with better opportunities which make their live easy at such culture. Unlike men, female students spend more time, make great efforts and hard work to “fit in” engineering, learn about all the ways to “deal with” male students i.e. learn strategies to cope with the masculine culture, receive negative treatment such as “women are kidded about getting extra points”, have to behave according to the “standard-issue stereotypes” in order to receive the same respect and recognition as males. As stated by Tonso (1996, p. 96) , among the coping strategies women use to survive in this masculine dominated culture to face their fear from exclusion is to “learn a new language [to become engineer], a language developed by men”. Women adopt these coping strategies “in a fashion similar to the responses about men’s privilege on this campus, learning to ignore the realities may be one of the women’s survival techniques”. Tonso concludes that engineering is still a domain where women are underrepresented, facing pressure to cope with the realities of the masculine culture, ignoring the stereotypical notions which exclude their participation, a culture which should be changed to be “gender neutral” in order to encourage women to participate and hence favour their presence in engineering education and profession as well. Tonso (1996, p. 97) states “but the fact remains that this sort of culture discourages women from participating ... the time has come to turn our conversation away from how to change women and to undertake conversations about what is wrong with engineering and engineering education and how to change the culture”.

#### *2.5. Engineering: A context of the tension about the requirements between difference and sameness*

Sophie Reissner (2012) work:“The Guys Would Like to Have a Lady: *The Co-Construction of Gender and Professional Identity in Interviews Between Employers and Female Engineering Students*” draws on the ways female engineers negotiate their identities that intersect with gender and professional aspects using the social constructionist approach in order to explore the discursive patterns of female engineers and how they re-construct their professional identity in interactional “androcentric” contexts. Here again, the struggles about the requirements between institutional discourses about “difference” and “sameness” take place referring to the institutional taken for-granted expectations of and about the employees both implicitly and explicitly. The work of Reissner (2012) demonstrates that women must supply “lot of work both to display that equality and to show the integration of technical and relational skills” in order to eradicate stereotypical images about women that may serve them to prove their “technical abilities” and their communicative skills concerned with “competency discourses” and reflected in the requirement to “fit in a professional engineering box” as a part of “the matching process” (2012, p.17).Reissner highlights the tension between the discourse

of difference that refers to gender as a “feminine interactional style” and the discourse of sameness which means to have masculine abilities to fulfil the job of engineering which is an institutional taken for granted male-dominated job where women challenge to negotiate and, hence, co-construct their professional identity in a domain which they do not belong to. Reissner (2012) concludes that “difference” and “sameness” that are “defined by cultural members” and act as an “axis” should not be polarized; rather they should be conceptualized as a continuum. She draws on Bucholtz & Hall (2005) understanding of identity which varies across cultures, they define “identities are intersubjectively constructed through several, often overlapping complementary relations, including similarity, difference, genuineness/ artifice, and authority/ delegitimacy” (2005, p. 598). Through being different from the norm, women still face gender stereotypes which continue to consider them as a minority group whose chances to be recruited in engineering are difficult and restricted. The requirements of engineering for employees to be the same are a prerequisite to “fit in” in engineering while the requirement for women to be different receives resistance, difficulty to be hired as well as rejection from male dominant group to assert their masculine normative culture.

### *2.6. The relevance of female bodies in engineering discourses*

Female and male engineers are positioned in terms of their body which is called by Ella Roininen (2008) “body/work repertoire” that “reproduces discourses that ground the gendered distribution of labour directly through sexed bodies. The repertoire connects the productive and reproductive capabilities of male and female bodies to the ways female and male professionals are positioned with regards to the careers” (2008, p.145). The study of Roininen (2008) demonstrates that female bodies are put at focus; their bodies are not congruent with technology and masculinities that are dictated as the standard. As a result, women face exclusion from participating in engineering field because “women do not initially belong to the field of engineering” (Roininen, 2008, p.148). In this sense, male bodies go unnoticed; Roininen explains (2008, p.149) “the body/work repertoire presents engineering as a masculine activity, where women’s bodies are an abnormality...women’s bodies in the field of engineering constitute a problem primarily for themselves”. Ella Roininen (2008) emphasises that engineering is still a masculine signed and a male job where women constitute minority professionals reflected in the discursive construction of gender and professionalism related to engineering context.

## **3. Methodology**

Recent research in discourse studies related to workplace has focused on the combination of both qualitative and quantitative paradigms. Angouri (2010) states that workplace discourse has become the focus of many disciplines as Linguistics, Management, Sociology and Psychology. Particularly, Angouri (2003, p. 37) identifies that research in Linguistics aims at: “(a) the identification of patterns of language use and/or development of the skills the employees need in order to be competent users of the language(s) for work related purposes, (b) the study and/ or description of the spoken/ written language –or rather the discourse-workplace participants engage in”.

In attempting to explore the reality of women engineers in Algeria in light with the present constraints in the domain of engineering, the research setting is Algerian “National Society for Research, Production, Transport, transformation, and Marketing of Hydrocarbons” (SONATRACK).60 female participants were chosen from varieties of sub-disciplines in engineering i.e. holding different degrees in engineering including computer science engineering; electronics engineering, mechanical engineering, civil engineering, electro-technical engineering. For this purpose, both qualitative and quantitative methods are used. Accordingly, the analyses of data are both descriptive and interpretative of the ways female

engineers portray their identities in a discursive process. To fit the needs and the purpose of the research, the data are gathered from relevant methods such as questionnaires by providing set of questions to female engineers so as to explore they perceive engineering culture as well as to provide a clear understanding of how they negotiate their gender and professional identities in man's space professional engineering. Also, the present research perspective relies on interviews with female engineers to explore the discursive perspective of female engineers' familiarities as well as evaluation of their culture bringing to the surface implicit and explicit gender dynamics, social norms, cultural assumptions and institutional practices related to engineering workplace culture. This analysis serves to enrich the data through direct connection with participants to better explore the engineering culture in light with the institutional and conventional discourses about the norms of engineering as well as to provide a fruitful discussion about their persistence and challenges that highlight women's awareness about the restrictions they face. To fit the above needs, the analytical approach draws on both Social Constructionist Approach to examine and discuss the discursive construction of female engineers identities in interactional settings and Fairclough's Critical Discourse Analysis Approach as it relies on female engineers discussions about the realities of engineering since they are loaded with full indications about the discourse used in professional settings and about females' experiences in light with prevailing power dynamics in their work setting.

## 4. Results

### 4.1. Female's barriers at engineering

#### 4.1.1. Females' numerical minorities challenging the male norm

When we asked female participants about the nature of engineering work, all of them said that engineering was a difficult job due to the fact engineering is claimed as a masculine domain which is a main reason behind their numerical minority i.e. their presence is perceived to be unusual and unnatural unlike men who are claimed to be the norm. A female participant confirms the above stated claim:

*"...the masculine culture of engineering doesn't need to be questioned because it is a male signed profession while women who come into it have to learn about the masculine culture and adopt masculine characteristics..."*

When we asked the participants about good professional and successful engineer, all of the female engineers compared their roles and characteristics to men; they considered men as the norm and drew on the hierarchical values between male and female engineering characteristics that were evident in female talks i.e. the masculinities of engineering have high hierarchical values that mobilize men's characteristics and values as the natural norm. One female participant claims:

*"...One cannot deny the fact that male engineers are active and ambitious and self-confident which is mainly due to the perception that their presence is something natural while female engineers reluctant and silent in mixed interactions but sure of their abilities as engineers..."*

This hierarchy of characteristics between male and female characteristics is evident also in the following extract with another female participant:

*"[mmmm] we prefer to talk about the problem and ask for help if needed while male engineers are silent most of the time. They don't ask for help particularly when it comes to*

*technical matters because they claim that they excel in technology even when they talk they are rough and when asking for help you feel that they are hesitant”.*

In the above discussion, women categorize their characteristics in terms of differences displaying different working styles as if they are essentially different. The above extract demonstrates that women do not hesitate to ask help from others which is a sign of women's cooperative styles. In addition, they appear to value oral communication skills more than men do. Other female interviewees present male engineers in a negative sense among a set of male characteristics as “lacking patience” compared to female characteristics. Men prefer instead to “work individually”, they tend to “be proud of their achievements and projects”. Female engineers claim that females “ask for permission” while males don't do which is justified by their natural presence in their own space to “assume leadership” over female engineers due to the privilege of their numerical dominance; one female engineer states:

*“Engineering is historically over-numbered by men who find it easier to communicate with their peers since the setting is too dominated by males while women sometimes feel neglected because they represent a minority group. So, they interact seldom”.*

As minority group, female engineers articulate their awareness about the hierarchy of power relations that work through the course of engineering workplace. So, women are in a position to be subject to unequal treatment as professionals in light with the technical/ social dualism as well as (in) visibility paradox that highlight the complex work provided by female engineers to reconstruct their professional identities. Also, female engineers articulated the tension they undergo between their passion conducted by their will as a career choice and the normative male practices for female exclusion. Some extracts of male speech show interest in interactional talk about sport issues that tend to exclude women and show a sense of harmony between male engineers. This issue stands as one aspect of the mechanism of silencing to exclude women from participation in interactional setting as well as from work practices.

#### *4.1.2. Women's (In) Visibility at Engineering Workplace*

Among the obstacles that face women to do their work, 90 % of female engineers stated that they face difficulties to gain membership that force them to adopt coping strategies to be treated equally. Yet, they bring to the surface their femininity so as to manage their difference which in turn sheds light on the following obstacles:

##### *4.1.2.1. The Relevance of Female Bodies*

The working concept of “female body” is relevant and emphasized in female's speech. Most of the female participants by 83.33% identified some talks such as “you are beautiful”, “you are sexy today”. Most of the female participants make this point clear that they are visible in terms of the relevance of their bodies. One important point to make here is that female bodies are discursively normalized in discursive practice of engineering. One female participant declares: “we just smile when hearing a man speaking about our beauty”. This normalized speech about women's appearance as sexual object encourages the belief that men are free and entitled to show and to express their sexual and verbal desire to females. Yet, female's silence indicates the fear from exclusion. Moreover, female bodies are subject to the gaze and highly visible i.e. female engineers find themselves providing a hard work because they need to emphasize their professionalism and impose respect by setting limits to male engineers, a situation that sometimes drives them to quit participating in interactional settings. Consequently, women are subject to exclusion and isolation. Since the work is highly gender marked, they have to work hard to be better suited for the job as they represent a minority group that in turn indicates women's unnatural presence unlike men whose bodies go unnoticed and

normal. So, women may be subject to exclusion which is “a scaring effect” that draws on their passive roles in conversations.

#### *4.1.2.2. Being a Woman: Male’s Culture Dominating Engineering*

All the participants of this study show high level of dissatisfaction with the masculine biases of working environment. This confirms that the first barrier they encounter is the dominance of men’s culture because these women belong to the minority group finding it difficult: to be taken as professionally competent to cope in the workplace culture, to establish equality to men in a world that they do not belong to and to challenge men’s mechanism to exclude women in light with the critical commentary of women’s experience in such domain. Another female participant articulates:

*“being a female engineer is not easy at all , we have to work according to that culture as men at the same time we have to be recognized as women engineers ”*

One more point to make here in dealing with the realities of engineering, female engineers work more than enough to ensure their professionalism as well as their success and recognition in their job. They work hard to be treated seriously and to gain acceptance from the dominant male group.

#### *4.1.3. The combination between work and family*

All the women in this study consider and give importance to the role played by family concerning their career choice and their persistence in engineering; the fact that 80% of women engineers are married proves that family members are behind their work because they consider that paid work is a prerequisite in today’s life to help and supply the needs of the family members financially (husband, children, parents). Also, they consider work as a matter of economic independence and self-reliance. Yet, 30% of participants find difficulty to combine between work and family. So, they have to prove themselves as adequate for engineering job; working hard in order not to fall under the social stereotype that doubts women’s ability to fulfil their full potential in engineering workplace. In the same vein, a female participant claims:

*“Engineering needs long working hours... the majority of Algerian women prefer traditional female professions due to many reasons, among them the nature of these kinds of jobs that allow them to combine between work and family ”*

This excerpt reminds us of “the scaring effect” behind women’s fear from exclusion in historically male-dominated professions. Women are always thinking about their families and about their failure in doing their job as well as about negative social perception because the role of women is perceived primarily as care takers that forces them to choose traditional jobs associated with femininity to combine between work and family. Beyond, gender dichotomous society is a predominant factor behind occupational sex segregation that expect and force women to be care givers by nature; as Obasanjo (1989, p. 26) asserts “women are givers and nurturers of life” because of their psychology i.e. their social responsibility associated with the biological ones contribute to the stereotypical notions effecting both men’s and women’s choice and perception of work that drive women to have work-life balance.

Another participant claims the importance of combining between work and family saying

*“Being an engineer doesn’t mean that one neglects the fact of being a woman, a wife, a daughter and a mother. We have to do our tasks towards our families a gift we are born with and socialized into being”*

This speech reflects a further step that women perceive themselves as powerful females driven by their abilities and consciousness to fulfil in engineering job.

## **5. Discussion**

The present study reveals that women are judged in terms of being different from men who represent the norm in engineering profession. To this end, we have shed important light on the close relationship between engineering and gender. It, then, reviews specific scientific inquiries made about the experiences, particularly, the lives of female engineers living at the margins of engineering world. Hence, female engineers articulate their awareness about the hierarchy between men and women and signify stereotypical assumptions claimed by men of women’s incompetence with engineering. They hence argue that engineering work requires a hard work more than men by spending more time because their presence in engineering is socially perceived as unusual i.e. engineering as a masculine domain forces women to work hard not only to be successful and achieve their competence but also to negotiate their professional identities in order to fit in the engineering culture. This is clear evidence about female engineers’ resistance to do their job. Here again, the participants sound confident and self-reliant of their abilities to do the career job confronting to the masculine culture that engineering has. Also, these episodes echo women’s power and ability driven by their will to fulfil the engineering job. Like any other work, the participants assert their right to be involved within engineering because it is not exclusive to men only.

## **6. Conclusion**

The presence of females at engineering has generated a large controversial literature, it has been studied from many different disciplines and each of them focuses on a specific part. Despite their differential perspective, most of these perspectives confirm their unnatural and unusual status as they enter the workplace. Most of these studies advocate female’s participation in both educational and professional engineering and support women’s role and achievement that favour their challenges to legitimize their presence in such domain. Briefly, Engineering is highly gendered; that reflects to which extent females perceive engineering as typically naturalized male’s domain. Most of them are discursively affected by the male norm and the culture of their jobs. The gendered engineering culture legitimizes male’s presence and practice that become exclusive for them. Women’s fear from exclusion forces them to make great efforts to gain acceptance and membership. . Finally, Algeria needs to increase the representation of women and strengthen the female talents in all sectors particularly masculinised ones. To this end, women may have the opportunity to make changes and challenges in historically male-dominated careers which is central to improve their economic outcomes, to realize their full potential, to seek more equality in career jobs which seem to be a new avenue for Algerian women to explore, mainly, to challenge the institutionalized patriarchal tradition of job distribution.

## **References**

1. Bucholtz, Mary and Kira Hall. (2005). *Identity and interaction: A sociocultural linguistic approach*. Discourse Studies, 7. 4–5: 585–614.
2. Fairclough, N. (2000). *Discourse, Social Theory, and Social Research: The discourse of welfare reform*. Journal of Sociolinguistics. 4(2), 163–195.

3. Faulkner, W. (2007). "*Nuts and bolts and people*": *Gender-troubled engineering identities*. *Social Studies of Science*, 37(3), 331 – 356.
4. Foucault, M. (1977). *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan. New York: Vintage.
5. Holmes, J. (2006). *Gendered Talk at Work: Constructing Social Identity through Workplace Interaction*. USA: Blackwell Publishing.
6. Kanter, R.M. (1977). *Men and Women of the Corporation*. Basic Books: New York.
7. Lewis, P, Simpson, R. (2010). *Revealing and Concealing Gender: Issues of Visibility in Organizations*. Palgrave Macmillan. , Basingstoke.
8. Pilcher&Whelehan.(2004). *50 Key Concepts in Gender Studies*.Sage. London.
9. Rebah, A. (2007). "*La Minorité Invisible*". Retrieved from: <http://www.gloria-center.org/2009/03/gray-2009-03-05/>.
10. Reissner, S. (2012). "*The Guys Would Like to Have a Lady*": *The co-construction of gender and professional identity in interviews between employers and female engineering students*. The interplay between professional identities and age, gender and ethnicity.P,231-254.
11. Simpson, R. & Lewis, P. (2007). *Voice, Visibility and the Gendering of Organizations*, Palgrave Macmillan, Basingstoke.
12. Tonso, K. L.(1996). *Student Learning and Gender*. *Journal of Engineering Education*.Vol.85 (2).P, 190-215.