WIP: Exploring Cultural Assets and Their Influence on Fostering a Sense of Belonging Among Women in the Middle East and North Africa (MENA) Region

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Abstract*— The underrepresentation of women in STEM fields, particularly engineering, is a prominent concern in the United States (U.S.), comprising only about 20% of the student population and workforce. Despite decades of efforts, this disparity persists due to harmful "othering" experiences in male-dominated environments, leading to a reduced sense of belonging. Women of Color face additional challenges of gendered racism, further impacting their wellbeing and belonging. In contrast, Muslim-majority (MM) countries in the Middle East and North Africa (MENA) region boast an average of 40% women's participation in engineering. This research uses a community cultural wealth framework and the intersectionality of Muslim women to explore cultural assets influencing belonging among women engineers in the MENA region, understanding cultural values and practices shaping their career choices and satisfaction. Considering the diverse cultures within MM countries, shared Islamic principles guide societal norms. Semi-structured interviews with (15-21) Muslim women engineering graduates from MENA aim to understand the influence of culture, family, language, and religion on their sense of belonging. The findings could inform strategies for promoting gender diversity and inclusion in engineering, potentially offering insights applicable beyond the MENA region, including the U.S.

Keywords*— Women of Color, STEM, Belonging, Cultural Assets, MENA, Engineering Education, Cultural Practices, Religious Beliefs, Societal Values.

I. INTRODUCTION

Engineering stands out as one of the most heavily white male-dominated fields within the realm of science, technology, engineering, and mathematics (STEM) professions in the United States (U.S.) [1]. Despite strides in various sectors, women only comprise 20% of engineering graduates and 15% of the engineering industrial workforce [2]. Dishearteningly, these percentages have fluctuated over the past decade, further entrenching the underrepresentation of women in engineering [3].

The underrepresentation of minorities in STEM graduation rates is a pressing issue. While nearly 20% of degrees conferred by public four-year colleges in 2012 were awarded to minorities, they only accounted for 14% of STEM degrees awarded. Given the critical role STEM graduates play in driving economic growth, there are concerns that the United States may jeopardize its competitive advantage if efforts to increase minority participation in STEM fields are not intensified [4].

Unlike in the U.S. context, The Muslim-majority (MM) countries, specifically those in the Middle East and North Africa (MENA) region, have achieved an average of 40% of women's participation in engineering, exhibiting a contrasting trend to that in the U.S. [5].

A. Sense of Belonging

Women of Color continue to face significant underrepresentation across all educational levels in STEM. About 37% of the US population, Women of Color, including those who identify as Black, Indigenous, Latina, Asian American, and bi/multiracial, accounted for no more than 9.5% of earned bachelor's degrees in STEM disciplines in 2018 [6]. This persistent underrepresentation is attributed to entrenched patterns of isolation and marginalization within STEM departments and laboratories, which uphold a culture primarily shaped by white, heteronormative, affluent, and predominantly male individuals [7], [8]. These unwelcoming STEM environments inhibit the sense of belonging for Women of Color in STEM and position them as outsiders within the field [9], [10]). Consequently, Women of Color in STEM must navigate experiences of racism, sexism, gendered racial microaggressions, invisibility, hypervisibility, and isolation [11], [12],[13]. The cumulative impact of such marginalization takes a substantial psychological toll [14]. and influences Women of Color's decisions regarding their persistence in STEM fields [15].

The need to establish an inclusive work environment starts with higher education [16], which conducted a full literature review for undergraduate, graduate, master's, and doctoral students, underrepresented minorities, and international students. The research highlights the impact of a sense of belonging on students' persistence and retention in all the studied minority groups, and it was concluded that the academic and social sense of belonging is a key factor for students' persistence in engineering.

The international students defined the sense of belonging as 'connectedness to an institution to a social facet of belonging'; for graduate students, it is inclusion within the academic community and socialization; minorities express peer support, empathetic understanding, and faculty support. International students often exhibit cultural aspects across different facets of belongingness, including general, social, academic, and institutional dimensions. Differences in cultural background and language linked to citizenship diversity influence students' perceived acceptance, isolation,

or discrimination. Additionally, international students benefit from institutional support in academic, social, and cultural aspects [16].

Social psychologists Baumeister and Leary (1995) define a sense of belonging as having positive and frequent interpersonal connections accompanied by a conviction that the underlying relational bond is caring, stable, mutual, and lasting [17], [18].

Belonging has become an essential analytical category across various disciplines, such as sociology, anthropology, psychology, political science, and law, focusing on topics like citizenship, migration, and identity. In the educational field, research shows that students who lack a sense of connection to their school are more likely to experience negative emotions and behavioral issues, display lower engagement, and are prone to absenteeism and early dropout. Scholars discuss the concept of 'modes of belonging' to understand different attachment forms to places, groups, and cultures [19][20].

The sense of belonging among individuals within the context of women in engineering includes the concept of place-belongingness, which describes an intimate feeling of feeling at home due to emotional attachment and the importance of social locations. The Vera-Gajardo study emphasized on the need to consider intersectionality, as different social identities (e.g., gender, race, class) and politics of belonging involve boundary maintenance work that separates individuals into 'us' and 'them' groups involving ongoing negotiation processes. Cultural expressions such as language and shared traditions contribute to constructing a sense of belonging [19][20].

Belonging is a fundamental human motivation experienced to some degree across all cultures and different types of people and fulfilled by several specific characteristics of social bonds [21]. A wide range of other challenges that women face in engineering are tightly linked to deficits in belonging [19][20]; female college students who reported a greater sense of belonging also reported better perceptions of their physical health, and male college students reported fewer health symptoms overall [22].

B. Engineering in the MENA Region

The Middle East and North Africa (MENA) definitions by United Nations agencies and programs cover 21 countries: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Mauritania, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen. All these countries are Arab and MM countries [23].

The statistics showed an effortless strong representation of women among engineering graduates in countries such as Jordan (40%), Morocco (42.2%), Oman (43.2%), Syria (43.9%), Tunisia (44.2%), and Algeria (48.5%) (Dorisca, 2018). This significant participation raises the necessity of understanding the factors that motivated women to pursue an engineering education and career path in MM countries compared to the national averages in the U.S. [5].

The MENA region is home to around 500 million people, and the median age is 22, compared to the global average of 28. About 53% of the population is under 25; females represent 49%. This puts tremendous stress on educational, health, and social systems throughout the region [24]. Economic growth in the MENA region is facing many challenges, especially after the Arab Spring in 2011, which is reflected in the unemployment rate. Raising international competitiveness and attracting more and better foreign direct investment (FDI) will be fundamental components to securing sustainable growth, employment, and better living standards [25][26].

The MENA region is the birthplace of three major monotheistic world religions: Judaism, Christianity, and Islam. These faiths play a significant role in shaping both the region's cultural heritage and humanity's overall spiritual legacy. Religious communities in the MENA region have constructed shrines with universal spiritual reflections of these religions' deep-rooted and enduring impact [23].

The cultures of the MM countries are not monolithic and encompass distinguishable variations based on region and ethnicity. Muslim countries in the MENA region exhibit different cultural expressions. However, they are guided by a similar language (Arabic), cultural values, and principles integrated into the Islamic religion. So, we consider them collectively within the context of this research [27].

In the last decade, most Muslim and Arab nations have enacted reforms to advance women's rights and have shown greater awareness of gender equity. As a result, all regions (MENA) have ratified the Convention on the Elimination of All Forms of Discrimination Against Women. This marks significant progress in promoting gender equality across the region [29].

Moshfeghyeganeh and Hazari (2021) revealed that Muslim women in (MM) countries' cultural perspective opposed their counterparts in the U.S. in terms of engineering education. This contradicts prevailing narratives that depict Muslim women inaccurately and perpetuate stereotypes, often portraying them as illiterate and facing gender-based underrepresentation. On the contrary, gender orientalists tend to present Muslim women as oppressed and culturally backward [29]. This skewed portrayal stems from a deficiency in cultural understanding, highlighting the need for a more nuanced perspective. [30].

Moshfeghyeganeh and Hazari (2021) and Nehmeh & Kelly (2018) conclude the positive impact of community and family culture and emphasize religion's significant role in motivating women to pursue higher education and career paths in STEM disciplines. They also feel like insiders to the STEM community [29], [30].

One impressive aspect of women's persistence is overcoming the economic challenges in the MENA region related to unemployment and inflation, along with increased education expenses that did not impact women's persistence in engineering.

The literature review process shows a gap in the research studies about women in engineering, specifically in the MENA region. Researching the secret of MENA’s cultural assets that support women's sense of belonging to engineering is a significant step toward concluding the root cause of the sense of belonging to engineering. This research project delves into the cultural assets that shape the sense of belonging among women engineers in the MENA region. We aim to uncover the cultural values and practices that contribute to women’s choices to pursue engineering and their satisfaction and sense of belonging while they are there.

C. Research Statement and Research Question

This research aims to explore the cultural assets that play pivotal roles in shaping and establishing the sense of belonging among women in the diverse socio-cultural landscape of the MENA region. The study aims to identify and understand the contributors that facilitate and strengthen the sense of belonging to the STEM community experienced by women within the MENA region.

The study examines four main assets: cultural elements, societal practices, community-based strengths, and religious beliefs using the following Research Questions:

- How do traditional cultural practices and customs in the MENA region influence women's perceptions of belonging within their communities and professional spheres?
- What role do language, art, literature, and other cultural expressions play in fostering a sense of belonging among women in diverse socio-cultural contexts across the MENA region?
- How do family structures, community networks, and societal values impact the sense of belonging among women in the MENA region, especially within male-dominated domains or public spaces?
- How do religious or spiritual beliefs and practices contribute to or challenge the sense of belonging experienced by women in various countries across the MENA region?

II. Theoretical Framework

Yosso's (2006) research findings suggest that Communities of Color possess a unique form of cultural wealth known as community wealth. This wealth encompasses six interrelated forms of cultural capital: aspirational, navigational, social, linguistic, familial, and resistant. [33], and we will use this framework to guide our research. Aspirational capital reflects the ability to maintain hope and dreams for the future, even amid systemic barriers, drawing on stories that nurture a culture of possibility. Linguistic capital involves acquiring intellectual and social skills through communication experiences, including bilingualism and storytelling traditions. Familial capital encompasses cultural knowledge nurtured within kinship networks, expanding the concept of family to include broader community connections. Social capital refers to networks of people and resources providing support to navigate societal institutions historically utilized by People of Color for education, legal justice, and employment. Navigational capital involves maneuvering through societal structures, acknowledging individual agency within institutional constraints, and relying on social networks for guidance. Finally, resistant capital involves oppositional behaviors that challenge inequality, rooted in historical and contemporary efforts of Communities of Color to resist oppression and transform unequal conditions towards social and racial justice [33]. This research will use four of these community cultural wealth as a framework: aspirational capital, linguistic capital, familial capital, and social capital. The interpretation of these four categories, religion, language, family, and culture, form the research questions. Meanwhile, the research uses the Intersectionality of ethnicity, race, and gender as a feminist lens to focus on Muslim and Middle Eastern women.

III. Method

The research employed the qualitative phenomenological feminist approach, an integrated tool for examining the cultural assets that foster a sense of belonging within the study region. The rationale behind a phenomenological feminist methodology was to obtain a comprehensive and holistic understanding of Muslim women engineers in the MENA region [34].

A. Participants & Procedure

All participants must identify as Muslim women born and raised in the MENA region. Each participant also should have graduated from engineering school and a working tenure of at least three years in any engineering domain, whether in the industry or academia. If possible, the population will represent one participant from each country of the study (N=10-21).

Upon receiving the author's Institutional Review Board (IRB) approval, the recruitment process started via email and social media; the interested participants contacted the researchers directly to schedule the interview. The researchers are flexible in scheduling/rescheduling or accommodating the participants. Prior to the interview, the participants will give informed consent outlining the study's purpose and risks in both languages (Arabic and English). After approving the interview transcript, all participants who completed the interview were compensated with a $50 electronic gift card for their participation.

We will conduct semi-structured individual interviews with Muslim Women in engineering [35]. The first author will conduct interviews (90-120 minutes) virtually via Zoom, where the participants will be engaged in open-ended questions and conversations in the participant's preferred language (Arabic or English). An Arabic translation of the consent and interview protocol will be provided to the participants, and an English translation will be provided for the interview transcript. [35].

The interview protocol comprises two components: the background section, designed to establish a framework for conducting interviews, and the main interview questions, which gather qualitative data. These questions specifically aim to answer the research question and explore the impact of cultural assets on Muslim women engineers.

B. Data Analysis: The Coding Process.

We currently have five participants scheduled. Prior to the final paper being submitted, we will have preliminary results to present. The coding process will utilize thematic analysis. The initial phase of the analysis will include deductive coding around each cultural asset and subcode to delineate various contexts within which participants interacted with those assets and the impact of those interactions. This preliminary bracketing around cultural assets will involve identifying and emphasizing key phrases, sentiments, or descriptions that underscore the influence of the correlation between cultural assets and a sense of belonging [36].

Following this, the identified statements and meanings will be organized into thematic clusters, centering on the

influence of cultural assets. Integrating these textural and structural descriptions will facilitate the synthesis of the essence encapsulating participants' experiences [35], which we will use to explain how community capitals enrich women's sense of belonging and support the engineering community within the MENA region.

C. Process Reliability

To ensure the reliability and confirmability of the primary analyst's coding process, we will adhere to the quality guidelines for process reliability outlined by [37]. Initially, all audio-recorded interviews will be transcribed verbatim by the first author and then approved by the participants. Both translators will review the translation for accuracy. Throughout the coding phase, the researcher will meticulously document the analysis process, providing transparency for clarity and mitigating interpretive bias. The first author will compile a concise summary of each participant, outlining the codes utilized and any newly identified codes and synthesizing the combined findings from the timeline and interview data. Consequently, the first authors will systematically code one participant's entire dataset, ensuring comprehensive and coherent analysis. The research team will openly discuss any discrepancies identified to reconcile conflicting interpretations or refine existing codes.

IV. Future Work

The research analysis can demonstrate the main cultural assets and how they nurture a sense of belonging among Muslim women in engineering.

The research analysis endeavors to unravel the intricate dynamics of cultural assets and their role in shaping women's feelings of belonging within this specific socio-cultural context. This approach aims to unveil how individuals from diverse geographical locations with similar cultural, language, and religious backgrounds can develop a sense of belonging to the engineering domain.

By embracing phenomenology feminist perspectives, we aim to illuminate women's lived experiences in MENA, shedding light on how cultural assets contribute to their sense of inclusion and empowerment. Through this inquiry, we seek to offer insights that not only enrich our understanding of women's experiences in the region but also inform strategies to foster greater belonging and agency among them.

V. Positionality

As a researcher from a culturally rich and diverse Middle Eastern region, the first author is committed to fostering positive change and advancing knowledge within her community. With a profound understanding of the intricate social, political, and economic dynamics unique to the Middle East, she brings an insider's perspective that enriches my research endeavors. Her roots as a Muslim woman born and raised in the Middle East and working and living in three of the region's countries imbue her work with a sense of authenticity and empathy, enabling her to navigate complex issues with sensitivity and nuance. In embracing her role as a researcher from the Middle East and engineering community, I am committed to promoting mutual understanding, fostering dialogue, and fostering a culture of respect and appreciation for diverse perspectives.

The second author is a white woman who is not from the MENA region. In her position as an outsider within the community, this work strives to support and elevate; she will defer to the first author when differences in data interpretation occur. Together, the author team believes Muslim women within the United States experience gendered racism and isolation. Through this and future work, we are committed to elevating the experiences of women engineers from the MENA region, working within their home countries and within the United States.

VI. Limitations

The study's geographic restriction to participants born and raised in the MENA region further limits the diversity of perspectives and experiences. By focusing on Muslim women engineers from this region, the study may miss insights from non-Muslim women engineers in the region. Moreover, the study is limited to a geographical location with distinct cultural contexts, potentially overlooking valuable insights into other parts of Africa or other world regions.

Additionally, excluding women who obtained engineering degrees but did not enter the engineering workforce may lead to a potential bias, overlooking the experiences and reasons behind their decisions, which could contribute to a more comprehensive understanding of career trajectories. The requirement of practical engineering work experience from all participants, whether in an industrial or academic setting, may limit the scope of insights, excluding perspectives from women who might have valuable experiences but do not meet this specific criterion.

Furthermore, the requirement for practical engineering work experience from all participants may narrow the scope of insights by excluding perspectives from women who do not meet this criterion, regardless of the relevance of their experiences. Similarly, excluding participants with less than three years of work experience in engineering may overlook the unique challenges, aspirations, and viewpoints of early-career professionals.

Recognizing these limitations and their potential impact on the study's scope, breadth, and applicability is essential for interpreting the findings accurately. Addressing these limitations can help researchers understand the boundaries within which conclusions can be drawn and enhance the relevance and validity of the study's findings.

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References

[1] Silbey, S. S. (2016, August 23). Why do so many women who study engineering leave the field? Harvard Business Review. https://hbr.org/2016/08/why-do-so-many-women-who-study-engineering-leave-the

[2] Knoedler, Dr. A. J. (2006). Investments. NSF. https://new.nsf.gov/funding/initiatives/broadening-participation/investments

[3] Christnacht, A. M. and C. (2021, October 8). Women make up nearly half of the U.S. workforce, but only 27% of STEM workers are women. Census.gov. https://www.census.gov/library/stories/2021/01/women-making-gains-in-stem-occupations-but-still-underrepresented.html

[4] MentorNet. The Underrepresentation of Women in Engineering and Related Sciences: Pursuing Two Complementary Paths to Parity. In: Government-University-Industry Research Roundtable (US); National Academy of Sciences (US); National Academy of Engineering (US); Institute of Medicine (US); Fox MA, editor. Pan-Organizational Summit on the US Science and Engineering Workforce: Meeting Summary. Washington (DC): National Academies Press (US); 2003. Available from: https://www.ncbi.nlm.nih.gov/books/NBK36356/

[5] Ellis, R. (2022, October 28). World University Rankings 2022 by subject: Engineering. Times Higher Education (THE). https://www.timeshighereducation.com/world-university-rankings/2022/subject-ranking/engineering

[6] National Academies of Sciences, Engineering, and Medicine (2019). In M. L. Dahlberg & A. Byars-Winston (Eds.), Policy and global affairs; board on higher education and workforce; committee on effective mentoring in STEMM. The science of effective mentorship in STEMM. National Academies Press (US)

[7] McGee, E. O. (2020). Interrogating structural racism in STEM higher education. Educational Researcher, 49(9), 633–644.

[8] Ong, M., Wright, C., Espinosa, L. L., & Orfield, G. (2011). Inside the double bind: A synthesis of empirical research on undergraduate and graduate women of color in science, technology, engineering, and mathematics. Harvard Educational Review, 81(2), 172–209. http://doi.org/10.17763/haer.81.2.t02224

[9] Joseph, J. (2012). From one culture to another: Years one and two of graduate school for African American women in the STEM fields. International Journal of Doctoral Studies, 7, 125–142. https://doi.org/10.28945/1571.

[10] Ong, M., Smith, J. M., & Ko, L. T. (2018). Counter spaces for women of color in STEM higher education: Marginal and central spaces for persistence and success. Journal of Research in Science Teaching, 55(2), 206–245.https://doi.org/10.1002/tea.21417.

[11] Avraamidou, L. (2020). Science identity as a landscape of becoming: Rethinking recognition and emotions through an intersectionality lens. Cultural Studies of Science Education, 15(2), 323–345. https://doi.org/101007/s11422-019-09954-7.

[12] Espinosa, L. L. (2011). Pipelines and pathways: Women of color in undergraduate STEM majors and the college experiences that contribute to persistence. Harvard Educational Review, 81(2), 209–241.

[13] Wilkins-Yel, K. G., Hyman, J., & Zounlome, N. O. (2019). Linking intersectional invisibility and hypervisibility to experiences of microaggressions among graduate women of color in STEM. Journal of Vocational Behavior, 113, 51–61.

[14] Wilkins-Yel, K. G., Arnold, A., Bekki, J., Natarajan, M., Bernstein, B., & Randall, A. K. (2022). “I can't push off my own mental health”: Chilly STEM climates, mental health, and STEM persistence among Black, Latina, and White graduate women. Sex Roles, 86(3), 208–232.

[15] Hodari, A., & Johnson, A. (2019). Mitigating challenges faced by women of color in physics. Scientia. https://par.nsf.gov/servlets/purl/10113355.

[16] Lee , E., Bekki , J., Carberry, A., & Kellam, N. (2021, January 24). ASEE peer - conceptualization and situating of sense of belonging among international engineering doctoral students: In light of the previous literature. ASEE. https://peer.asee.org/conceptualization-and-situating-of-sense-of-belonging-among-international-engineering-doctoral-students-in-light-of-the-previous-literature.

[17] Wilson, D., & VanAntwerp, J. (1970a, January 1). Left out: A review of womenâ€TMS struggle to develop a sense. SAGE Open. https://ideas.repec.org/a/sae/sagope/v11y2021i3p21582440211040791.html

[18] Wilson, D., & VanAntwerp, J. (1970b, January 1). Left out: A review of womenâ€TMS struggle to develop a sense. SAGE Open. https://ideas.repec.org/a/sae/sagope/v11y2021i3p21582440211040791.html

[19] Vera-Gajardo, A. (2021a, October 9). Belonging and masculinities: Proposal of a conceptual framework to study the reasons behind the gender gap in engineering. MDPI. https://www.mdpi.com/2071-1050/13/20/11157

[20] Vera-Gajardo, A. (2021b, October 9). Belonging and masculinities: Proposal of a conceptual framework to study the reasons behind the gender gap in engineering. MDPI. https://www.mdpi.com/2071-1050/13/20/11157

[21] R. F. Baumeister and M. R. Leary, “The need to belong: Desire for interpersonal attachments as a fundamental human motivation.” Psychological Bulletin, vol. 117, pp. 497-529, 1995.

[22] Hale, C. J., Hannum, J. W., & Espelage, D. L. (2005). Social support and physical health: The importance of belonging. Journal of American College Health, 53(6), 276–284. https://doi.org/10.3200/JACH.53.6.276-284

[23] Cernea, M. M. (2001). Cultural Heritage and Development : A framework for action in the Middle East and North Africa. World Bank. https://documents.worldbank.org/en/publication/documents-

[24] World, B. (n.d.). Arab World. World Bank Open Data. https://data.worldbank.org/region/arab-world

[25] O’Sullivan, A., Rey, M.-E., & Galvez Mendez, J. (2011a). Opportunities and challenges in the MENA region. MENA-OECD Investment Programme. https://www.oecd.org/mena/49036903.pdf

[26] O’Sullivan, A., Rey, M.-E., & Galvez Mendez, J. (2011b). Opportunities and challenges in the MENA region. MENA-OECD Investment Programme. https://www.oecd.org/mena/49036903.pdf

[27] Harb, C. (2016, January 1). (PDF) the arab region: Cultures, values, and identities.Research Gate. https://www.researchgate.net/publication/319159856_The_Arab_Region_Cultures_Values_and_Identities

[28] Islam, S. I. (2017). Arab women in Science, Technology, Engineering and Mathematics Fields: The way forward. World Journal of Education. https://www.sciedupress.com/journal/index.php/wje/article/view/12619/0

[29] Nehmeh, G., & Kelly, A. (2018). Women Physicists and Sociocognitive Considerations in Career Choice and Persistence. ResearchGate Logo. https://par.nsf.gov/servlets/purl/10082148

[30] Moshfeghyeganeh, S., & Hazari, Z. (2021). Effect of culture on women physicists’ career choice: A comparison of Muslim majority countries and the West. Physical Review Physics Education Research, 17(1). https://doi.org/10.1103/physrevphyseducres.17.010114.

[31] Anzaldúa, G. (1990) Haciendo Caras/making face, making soul: creative and critical perspectives by women of color (San Francisco, CA, Aunt Lute Press).

[32] Bourdieu, P., & Passeron, J.-C. (1977). (PDF) reproduction in Education, society and culture. Taylor & Francis. https://www.researchgate.net/publication/280165503_Reproduction_in_Education_Society_and_Culture

[33] Yosso, T. (2006, August 23). Full article: Whose Culture Has Capital? A critical race theory discussion of Community Cultural Wealth. Taylor and Francis Online. https://www.tandfonline.com/doi/full/10.1080/1361332052000341006

[34] Al-Saji, A. (2017, September 19). Feminist phenomenology: 13: The Routledge Companion to Feminist Philosophy. Taylor & Francis. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315758152-13/feminist-phenomenology-alia-al-saji.

[35] Creswell, J. W. (2018). Qualitative inquiry et research design: Choosing among five approaches. SAGE.

[36] Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approach (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

[37] J. Walther, N. W. Sochacka, and N. N. Kellam, “Quality in interpretive engineering education research: reflections on an example study,” J. Eng. Educ., vol. 102, no. 4, pp. 626–659, Oct 2013. [Online]. Available:http://doi.wiley.com/10.1002/jee.20029.