Reporting Student Gender Identity in Papers Presented at the ASEE Gulf-Southwest Conference

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Reporting Student Gender Identity in Papers Presented at the ASEE Gulf-Southwest Conference

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Abstract

Gender equity is a key goal of diversity, equity, and inclusion (DEI) initiatives in engineering education. Our analysis of gender reporting practices in papers published in the proceedings of the American Society for Engineering Education Gulf-Southwest (ASEE GSW) conference demonstrates a need for transparent reporting of engineering education studies with results disaggregated by gender identity, including consideration of genders other than male and female. We propose that ASEE GSW authors provide students who are the subjects of engineering education research or evaluation studies with the opportunity to self-report their gender identity.

Introduction

Decades of research has demonstrated the pervasive gender inequities in the field of engineering and by extension engineering education [1]. Transparent reporting of student gender identity in engineering education studies enables researchers to investigate these inequities through gender-based comparisons of educational experiences, outcomes, and interventions. The disaggregation of research data by gender identity is a critical step in understanding the results and basis of gender inequities that may otherwise be lost in datasets [2]. This is particularly true for students with nonbinary or transgender identities who are often understudied or overlooked entirely [3], [4]. In this paper, we present an analysis of gender reporting practices in papers published in the proceedings of the American Society for Engineering Education Gulf-Southwest (ASEE GSW) conference to assess our community’s progress toward transparent reporting.

Methods

We downloaded papers from the ASEE PEER website (https://peer.asee.org) from the 2019, 2020, and 2021 ASEE Gulf-Southwest Annual Conference collections. All papers in each yearly collection were assessed to determine whether the paper related to engineering education; if the paper reported student data; whether students were surveyed and/or demographic data were collected; and if data on students’ gender were collected. Furthermore, we investigated if any papers acknowledged that students may have gender identities beyond a gender binary of...
male/female.

**Results**

Table 1 reports our results separately for the 2019, 2020, and 2021 conference proceedings, and here we summarize the observations for the three years combined. Of the 214 papers published in the 2019-2021 ASEE GSW proceedings, we focus our attention on the 144/214 that were educational papers, as opposed to technical papers. We further limit our analysis to the 85/144 educational papers that reported data about students, as opposed to faculty data or other topics. Of these, 67/85 educational papers reported that they surveyed or collected demographic data from students. Of these, only 21/67 educational papers indicated that students’ gender information was collected. Moreover, none of the papers acknowledged that students may have gender identities beyond a gender binary of male/female.

<table>
<thead>
<tr>
<th>Total # number of papers</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papers related to engineering education</td>
<td>64/78</td>
<td>38/74</td>
<td>42/62</td>
<td>144/214</td>
</tr>
<tr>
<td>Papers reporting student data</td>
<td>25/64</td>
<td>27/38</td>
<td>33/42</td>
<td>85/144</td>
</tr>
<tr>
<td>Papers reported surveying students and/or collected demographic data from students</td>
<td>24/25</td>
<td>24/27</td>
<td>19/33</td>
<td>67/85</td>
</tr>
<tr>
<td>Papers indicated how students’ gender information was collected</td>
<td>7/24</td>
<td>10/24</td>
<td>4/19</td>
<td>21/67</td>
</tr>
<tr>
<td>Papers acknowledged that students may have gender identities beyond a gender binary of male/female</td>
<td>0/7</td>
<td>0/10</td>
<td>0/4</td>
<td>0/21</td>
</tr>
</tbody>
</table>

**Summary and Conclusions**

It is widely acknowledged that there are persistent gender inequities in engineering education and the engineering profession. Using a simplistic gender binary of male/female, in 2020 approximately 23% of bachelors degrees in engineering were awarded to females [5]. Transparent reporting of student gender identity in engineering education studies would enable researchers to investigate gender-based comparisons of educational experiences, outcomes, and interventions that could inform approaches for mitigating inequities.

The lack of recognition of the diversity of gender identities results in a significant erasure of students, many LGBTQ+ identifying. Furthermore, none of the papers reviewed in this analysis considered students at the intersection of multiple marginalized identities, such as race and gender. By not examining these factors, analysis of student populations is incomplete, and the experiences of key student populations are ignored. The analyses presented in this paper demonstrate a need for
transparent reporting of engineering education studies with results disaggregated by gender identity, including consideration of genders other than male and female.

We propose that ASEE GSW authors provide students who are the subjects of engineering education research or evaluation studies with the opportunity to self-report their gender identity following best practices such as are recommended in other domains, e.g., healthcare [5], and report their study findings disaggregated by gender identity. It is noteworthy that the ASEE Profiles of Engineering and Engineering Technology Survey now offers institutions an “expanded gender option” for reporting “Male/Female/Non-binary Gender/Another Gender or Unknown” [7]. Please see the 2016 report of the Integrated Postsecondary Education Data System (IPEDS) Technical Review Panel (TRP) discussion on gender for additional context [8].

References


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