



# **How to inspire girls to pursue engineering**

A practical guide for Swedish  
companies and organizations

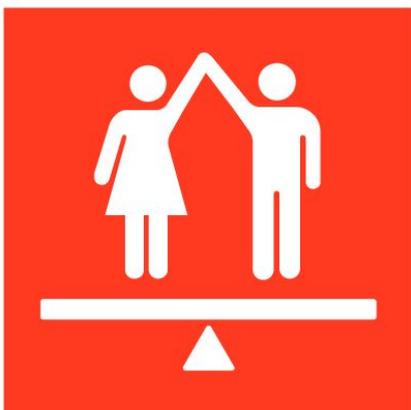
BY WOMENGINEER - 2019 EDITION

**DELMÅL** 4 ▶ A



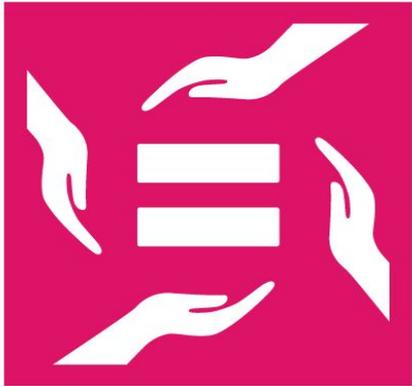
**SKAPA INKLUDERANDE  
OCH TRYGGA  
UTBILDNINGSMILJÖER**

**DELMÅL** 5 ▶ C



**SKAPA LAGAR OCH  
HANDLINGSPLANER  
FÖR JÄMSTÄLLDHET**

**DELMÅL** 10 • 3



**SÄKERSTÄLL LIKA  
RÄTTIGHETER FÖR  
ALLA OCH UTROTA  
DISKRIMINERING**



#### **About Womengineer and IGEday**

Womengineer's vision is that by 2030, 50% of all graduated engineers in Sweden are women. This goal is based on the belief that gender equality within the engineering profession will benefit Swedish growth and welfare.



Introduce a Girl to Engineering Day (IGEday) is a yearly event hosted by Womengineer at which girls are invited to companies throughout Sweden to learn what it is like to work as an engineer. In 2019, 1869 girls visited more than 142 companies throughout Sweden.



**GLOBALE MÅLEN**  
för hållbar utveckling

Everyone working within Womengineer and with the IGEday event is committed to reaching UN Sustainable Development Goal #4, 5 and 10 - Achieve gender equality and empower all women and girls.

**80% of all girls that attended IGEday became more interested in engineering.**

**96% of all hosting companies would like to do it again in 2020.**

**IGEday 2019 reached a Net Promoter Score of 75%.**

**Today, only 33% of Swedish engineering graduates are women. This is described as a challenge for society due, as the huge potential of female engineers is missed out on.**

A McKinsey Global Institute report finds that \$12 trillion could be added to global GDP by 2025 by advancing women's equality. The public, private, and social sectors will need to act to close gender gaps in work and society.

UN takes the same approach by dedicating one of its Agenda 2030 Sustainable Development Goals to the matter, SDG#5.

Throughout the last decade, a wide range of initiatives has started with the aim to balance the distribution between men and women within engineering.

However, the amount of women in technical university programs has only slightly increased, from 30% in 2008 to 33% in 2018.

**This paper strives to provide 5 key insights on what really makes initiatives such as Introduce a Girl to Engineering Day more effective.**

Data is gathered through a post-IGEday survey done by Womengineer.



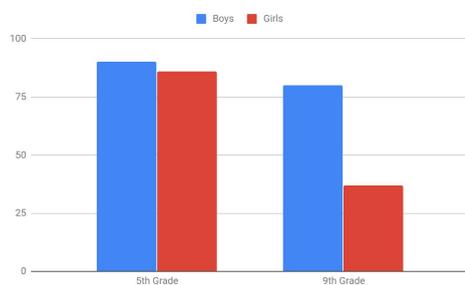
# 1. Girls love technology

Never assume the opposite

# 1. Girls love technology

There is a common myth in society that girls are not interested in technology. This is simply not true. According to Skolinspektionen, the number of boys and girls who claim to be interested in technology in year 5 of primary school are almost identical - approximately 90%.

However, for girls this number drops from 86% at age 11 to only 37% at age 15.



Ulrika Sultan, PhD at Linköping University, claims that girls often require a broader understanding of the societal impact of technology than is currently taught in schools to be truly interested.

As one of the participants at IGEday 2019 points out: *"Everyone knows that a doctor saves lives, but what they don't realize is that developing new technologies can be just as life-saving"*.

## Conclusion

In order for girls to pursue an engineering career, they need to be encouraged to understand what greater impact they can create. We need to help them retain their interest as they grow.

## Recommendation

Never assume a girl to be uninterested in technology!

Enable her to understand that engineers are crucial for a more sustainable world. Use UN's Sustainable Development Goals at your next IGEday to spark a discussion.



**2.**

**A little less  
conversation,  
a little more  
action!**

**Talk with them, not about them**

## 2. A little less conversation, a little more action!

Generation Z engineers are almost born with communication devices in their hands. 87% of 12-15 year olds use Instagram. That's 24% more than the amount of people between 36-45 years old. Take their attention span of 10 seconds, the same as a Snapchat, into consideration when communicating with this generation.

When we asked the girls who participated in IGEday 2019 what the best part of the day was, there was a clear pattern. Seeing factories and production facilities, testing programming and learning how machines work, and trying to solve "real" business problems, were all things they appreciated.

The same goes for meeting female engineers and discussing how their technologies are being used. In short, what the girls really wanted was to really "be an engineer" for a day.

The activities deemed to be the least interesting were power point company presentations. As one girl said "I didn't like when they put us in a corner and made us listen while they were talking over our heads".

### **Conclusion**

In order to inspire girls to pursue an engineering career, it is better to show what engineers in your company do rather than talk about it.

### **Recommendation**

Provide hands-on experience! For example, give them your trickiest business dilemma, and just see what happens.



# **3. Math is perceived as too difficult**

Let's challenge the self-fulfilling  
prophecy together

### 3.

## Math is perceived as too difficult

When asked what obstacles they saw in pursuing an engineering career, the most common response from participants in IGEday 2019 was "*Math is too difficult*", "*I'm not good enough*" or "*I have math anxiety*".

However, statistics show that girls are in fact better at math than boys both in middle school and high school.

What this indicates is that the perceived maths requirements of an engineering career are much higher amongst girls than reality. This may in turn intimidate potentially interested girls from pursuing a career which may be well suited to them.

#### **Conclusion**

In order to inspire girls to pursue an engineering career, we need to inform girls that the maths requirements are not extraordinarily high. At the same time, we need to recognize their anxiety and help them handle it.

#### **Recommendation**

Inform every girl, that straight A's are not a prerequisite in order to become an engineer. If you would like to help young girls get better self-esteem in math, we recommend the non-profit organization MatteCentrum.



**4.**

**A personal  
connection  
is key**

Say hi to Generation Z

## 4.

# A personal connection is key

Our data shows that more than 50% of the girls found out about IGEday 2019 from a teacher or other school staff. This stresses the important role that schools have as the main channel to get in touch with girls at an early stage. Getting teachers to understand why we need to close the gender gap in technology, can also help to reach out to girls who are not yet aware of engineering.

While teachers may be one way to engage girls, other personal relationships will do as well. The girls at IGEday 2019 who did not receive information from their school almost always got it from a personal contact. It could be a friend, a parent, their *"dad's motorbiking friend's son"* or their *"mom's cousin's husband who works as an engineer"* - the important part is the personal connection.

Seeing someone they trust speaking highly of an event or profession is an important aspect of being interested in that event or profession. Note, that this is not gender related.

Many girls at IGEday 2019 noted that speaking to female engineers was the best part of the day, and that they felt inspired and motivated by talking to someone they could identify with regarding their future career.

### **Conclusion**

The importance of role-models and personal connections in inspiring girls to pursue engineering cannot be overstated.

### **Recommendation**

Inspire a culture of good role models. If you have trouble finding them, team up with the initiative Pepp!



**5.**

**Get your CEO  
to sign  
SDG#5**

Gender diversity needs to be  
addressed at the C-suite level

## 5. Get your CEO to sign SDG#5!

To understand the business impact, we asked all participating companies on what organizational level gender diversity is being discussed internally. The answers show that companies in Sweden view engagement of girls into engineering as a human resource and communications matter.

36% of the participating companies did so as per a decision made by their HR department, which indicates that IGEday and similar engagements may often be considered important for future recruitment needs and employer branding matters.

However, only 16% of the participating companies did so thanks to decisions made by top management or the CEO of the company.

This, in turn, may indicate that companies in Sweden are not fully realizing the business impact of closing the gender gap nor its direct consequences for a more sustainable world.

### **Conclusion**

Events aimed at closing the gender gap are still considered to be more of an employer branding matter than a long term strategy to reach higher business impact.

### **Recommendation**

Make your CEO understand that getting more female engineers will boost the bottom line. Use UN's SDG#5 to spark the discussion! Make everyone within your company understand that a minority can't do this. It is a cross gender team effort!

# We need the next generation to be able to reach our mission

In order to test our 5 Key Insights, we gave Malin Ljung Eiborn a call. She is Director of Sustainability and Public Affairs at [BillerudKorsnäs](#), one of IGEday's partnership companies. We asked her about the company's view on equality from a sustainability perspective, linked to our 5 Key Insights.

**Q:** Our first Key Insight is that girls love technology. What does BillerudKorsnäs think about that? Is it true?

**A:** Yes! We see a great interest in what we do among girls. One of the main reasons why we work with IGEday is that we want to inspire even more girls to love technology. Especially when it comes to our sustainability work and how technology can be used to save the planet. For us, it will be crucial to tap into this interest.



*Malin Ljung Eiborn*

**Q:** Companies need to be better at understanding Generation Z. Their online attention span is 10 seconds, like a SnapChat. Do you think BillerudKorsnäs is good at understanding the next generation?

**A:** No. We try, but we could be better at it. Both because we have a great need to recruit the coming years due to staff retiring, but also because we need the next generation to stay innovative. We need the next generation to be able to reach our mission – to challenge the conventional for a sustainable future. We need to talk with them, understand them and attract them to join our journey. →

**Q:** One piece of feedback BillerudKorsnäs was given after IGEday was that your safety presentation was too long and time-consuming. Will you do the same next year, or make it short to fit this generation's attention span?

**A:** If our CEO heard this feedback she would applaud it. The safety presentation is deliberately extensive. Safety comes first in everything we do and we will definitely do it the same way next year. But maybe we should utilize the first 10 seconds better!

**Q:** Math is perceived as difficult by many young girls. What consequences does low self-esteem, among girls, in particular, have for you as a company?

**A:** The direct consequence is that we don't get enough female applicants for our summer jobs and vacancies in general. One reason might be that girls don't dare to apply, thinking it would be too difficult or not for them, when this is not true at all.

**Q:** Last question. We believe that gender diversity needs to be addressed at the C-suite level. Your CEO is female and supportive in this matter. Why is that so important?

**A:** Petra Einarsson is our CEO and she very engaged in diversity matters at [BillerudKorsnäs](#). First of all, her deliberate view of equality is open and inclusive. Not only does she speak freely about the subject. She has first-hand experience from previous jobs. She often says that she has got this far thanks to brave men, and despite the fact that some women might find this intimidating I believe it is true. The minority can't do this work alone.



Petra Einarsson, CEO BillerudKorsnäs



# Thank you for reading!

## Sources of information:

McKinsey Global Institute (MGI) report, The power of parity: How advancing women's equality can add \$12 trillion to global growth

UN Sustainable Development Goal Website, [un.org](https://un.org)

Teknisk obalans? En IVA-rapport om jämställdhet i ingenjörsyrket, IVA 2019

Ulrika Sultan, Doktorand Linköpings University

To Change the Unequal Engineering Branch, Chalmers, 2019

Svenskarna och Internet 2019, Internetstiftelsen

Our own survey done post IGEday 2019 with 79 responding companies (56%) and 524 girls (28%)

This publication is made by the non-profit organization Womengineer.  
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