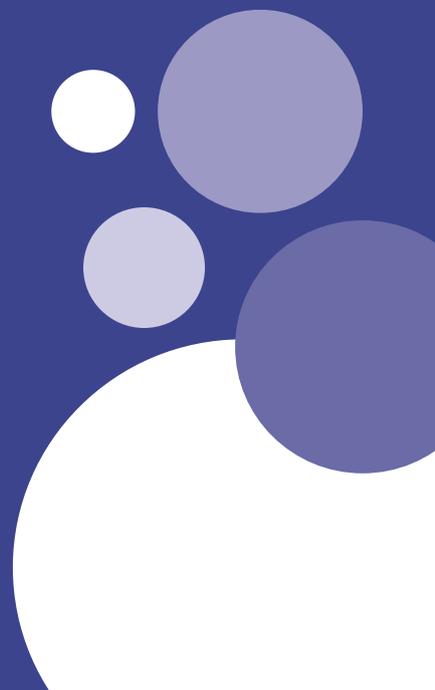


GENDER ISSUES IN ENTREPRENEURSHIP

The importance of cultural rather than biological explanations



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The importance of cultural rather than biological explanations

Kåre Moberg, PhD, The Danish foundation for Entrepreneurship, January 2020

Dealing with gender issues in an educational setting can be problematic. On the one hand, we would like our education system to be both gender and colour blind in order to be equal for all. On the other hand, research shows that there are widespread implicit biases leading to unspoken discrimination, but also that this can be remedied through targeted interventions.

Recent studies in the US have demonstrated that Afro-Americans achieve better medical results if they are paired with an Afro-American physician (Hill, Jones & Woodworth, 2018), and that both Caucasian and Afro-American pupils gain better school results if they are paired with a teacher of similar ethnicity (Gershenson, Hart, Hyman, Lindsay & Papageorge, 2018).

Similar studies, focusing on differences between men and women, have been performed within a large variety of fields. Within the STEM field (Science, Technology, Engineering, Mathematics), it has been demonstrated that females pursue a STEM-oriented education to a higher degree if their STEM-educators are females (Carrell, Page & West, 2010; Dennehy & Dasgupta, 2017; Marx & Roman, 2002; Stout, Dasgupta, Hunsinger, & McManus, 2011).

The differences and the gender stereotyping start at an early age (Cvencek, Dario, Meltzoff & Greenwald, 2011), and parents' perception about what characterises the genders has been demonstrated to have a significant influence (Cheng, Koptic & Zamorro, 2017; Eccles & Jacob, 1986).

Similar to STEM, entrepreneurship can be seen as a male-dominated field. The fact that fewer women engage in entrepreneurial activities than men is a well-documented empirical phenomenon (Coleman & Robb, 2009; Sweida & Reichard, 2013). There are twice as many male entrepreneurs as there are female entrepreneurs

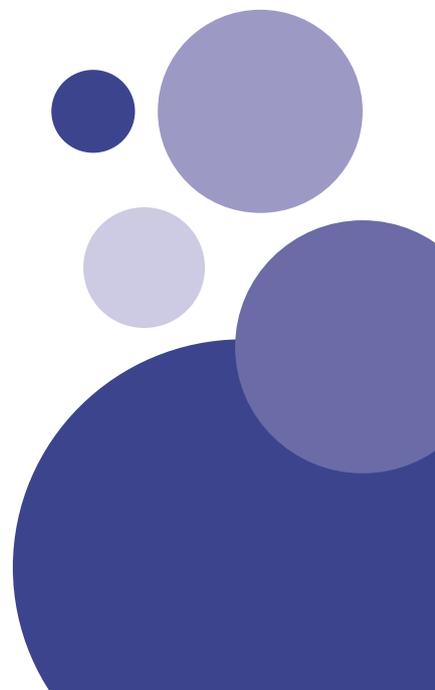
in Europe (EC, 2014; Ester & Román, 2017). In Denmark it is even more skewed with 12% of the males running a business but only 5% of the females.

This gender gap presents an untapped economic potential (Berger & Kuckertz, 2016; Van der Zwan, Verheul, & Thurik, 2012). Research has shown that this gender gap is malleable with the right interventions. Rather than arguing for biological and innate explanations, researchers view the gender differences as primarily driven by personal-level variables, such as psychological traits, motives, values and behavioural patterns (Croson & Gneezy, 2009; Gupta, Turban, Wasti, & Sikdar, 2009; Langowitz & Minniti, 2007).

Lindquist, Sol and Van Praag (2015) demonstrated in their study of adopted twins that the social influence transmitted by the adoptee-parents was twice as large as the genetic influence of the biological parents in regard to their children's entrepreneurial activities. Hoffman, Junge and Malchow-Møller (2014) and Hoffman and Junge (2013) demonstrated that the influence entrepreneurial parents had on their children was mainly the transferring of values such as preferences for uncertainty, risk and independence. They also demonstrated that this influence was almost twice as large if the parents and their children were of the same gender. These results are also backed by findings by Kickul, Wilson, Marlino and Barbosa (2008) and Greene, Han and Marlow (2013), who found that self-employed mothers played a crucial role for their daughters' entrepreneurial aspirations.

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The role of the role model



The role of the role model

Two influential theories that identify stereotyping and implicit biases as the root problem in professions and areas that experience structural underrepresentation of certain groups are Role Congruity Theory (Eagly & Karau, 2002) and Stereotype Threat Theory (Steele, 1997; Steele & Aronson, 1995). Individuals who do not perceive that they fit the stereotypical image of a profession may undermine their ability and aspirations, as well as performance (Brush & Greene, 2018).

Within the field of entrepreneurship this problem is double-fold since characteristics associated with entrepreneurs, such as independence, decisiveness, risk propensity and competitiveness, are typically masculine (Gupta, Goktan & Gunay, 2014), and industries that are associated with high-growth entrepreneurship are male-dominated (Ahl, 2006; Sweida & Reichard, 2013), while women, to a larger extent, work in sectors that experience low levels of entrepreneurial activity (Alsos, Espen, Isaksen & Ljunggren, 2006).

The lack of female role models within the field of entrepreneurship is one of the main causes of female underrepresentation (Ahl, 2006; Bechthold & Huber, 2018; Gupta et al., 2014). In a recent study by Bell, Chetty, Jaravel, Petkova, and Van Reenen (2017), it was found that females who grow up in a neighbourhood with many female innovators (but not male innovators) are more likely to become innovators within that industry, even if they move to a new area as adults.

Bell and colleagues assess the importance of having access to same gender role model as being the main reason to why fewer females opt for a career as innovators. If girls were as exposed to female innovators as boys are to male inventors, during their childhood, the current gender gap in innovation would shrink by half. The argument is that, exposure to same-gender role models counteracts prevailing gender-specific stereotypes (Beaman, Duflo, Pande & Topalova, 2012). If this takes place at an early age it becomes possible to re-define possible future selves (Akerlof & Kranton, 2000) by questioning common social representations (Lavolette, Lefebvre & Brunel, 2012). Although the gender

gap in innovation is shrinking gradually over time, it will take another 118 years to reach gender parity at the current rate (Bell et al., 2017). [1]

Another way to deal with stereotypical threats is to avoid focusing on the stereotype, which in this case would be the male entrepreneur. Instead, the focus should be on the behaviour, that is, to be entrepreneurial. In a well-performed randomised controlled trial by Rhodes, Leslie, Yee and Saunders (2019) it was found that girls who were told that the task was about doing science rather than acting like a scientist demonstrated a higher level of engagement, interest and perseverance in a science-oriented assignment. It can be expected that a similar pattern can be demonstrated for entrepreneurial assignments. [2]

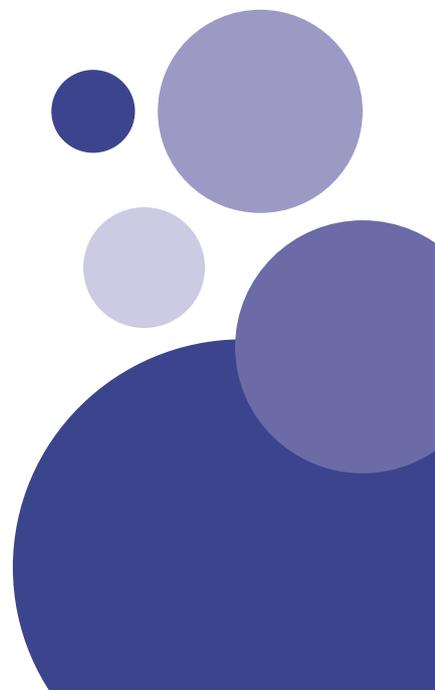
The competitive aspect of entrepreneurship appeals less to females

Some achievement-oriented and agentic characteristics such as risk propensity and competitiveness can be viewed as hindrances to female entrepreneurship in their own right and not just as being part of a masculine stereotype (Charness & Gneezy, 2012; Hügelschäfer & Achtziger, 2014; Jacobsen, Lee, Marquering & Zhang, 2014).

Uncertainty and competition are central concepts in entrepreneurship (Foss & Klein, 2011) and in entrepreneurship education (Jones & Iredale, 2010). It can be argued that the ability to manage uncertainty can be used as a proxy of future entrepreneurial success in a similar manner that mathematical ability is used in STEM (but, unfortunately, much more difficult to assess).

Competitions are also a central concept in many entrepreneurship programmes (Brentnall, Rodriguez & Culkun, 2017). It has repeatedly been shown that females are less inclined to select competitive settings, both in laboratory experiments (Buser, Niederle, & Oosterbeek, 2014; Niederle & Vesterlund, 2007) and in field studies (Hogarth, Karelaia, & Trujillo, 2012; Pekkarinen, 2015).

Shurchkov (2011) found that females, on average, perform less well than males in competitive environments and that this is particularly true when it comes to competing against males. The



results in the study by Gneezy and Rustichini (2004) clearly demonstrate this. In their study, 10-year-old children were asked to individually run 40 meters. They then paired the kids so that the two fastest kids ran against each other, and so on. The authors found no initial gender difference in speed. In competition, boys on average increased their speed, whereas girls became slightly slower.

The most interesting result, however, was revealed when boys and girls competed against each other. Boys won 73% of the times when competing against a girl with a better initial time. This can be compared to the result that girls won 50% of the times when competing against a girl with a better initial time. A girl thus had a much better chance of winning over a faster girl than a slower boy. It should however be noticed that girls, on average, improved their speed when competing against boys.

An interesting finding by Bowles, Babcock and McGinn (2005) is that women have been found to opt out of personal negotiations but are willing to negotiate on behalf of others. In a similar manner, it may be that women are more eager to compete when it benefits others (Niederle & Vesterlund, 2011). [3]

Comparative advantage

When it comes to education, girls fare much better than boys in general (OECD, 2015). In a study based on the results of the PISA tests, Stoet and Geary (2018) showed that, for most countries, girls and boys performed just as well in math and science, but girls performed much better in reading and writing.

According to expectancy value theory (Eccles, 1983; Wang & Degol, 2013), individuals will make rational decisions based on their own relative performance. Rather than pursuing a career as self-employed, it might thus be seen as more rational for girls to opt for a career in established organisations, since educational attainment is valued higher by these. Since it has been found that role models are especially important to entrepreneurs with high educational attainment (Bosma, Hessels, Schutjens, van Praag & Verheul,

2012), it thus is of crucial importance that female role models are provided. [4]

Girls also have a higher level of growth mindset, i.e. the belief that skills and competences can be learnt (Dweck, 2006), except in the case of mathematics (Bagès, Verniers & Martinot, 2016; Dweck, 2007). Given that the STEM sector experiences similar stereotypical threats as the field of entrepreneurship, the results of studies of educational interventions in math education may be of interest to the field of entrepreneurship education.

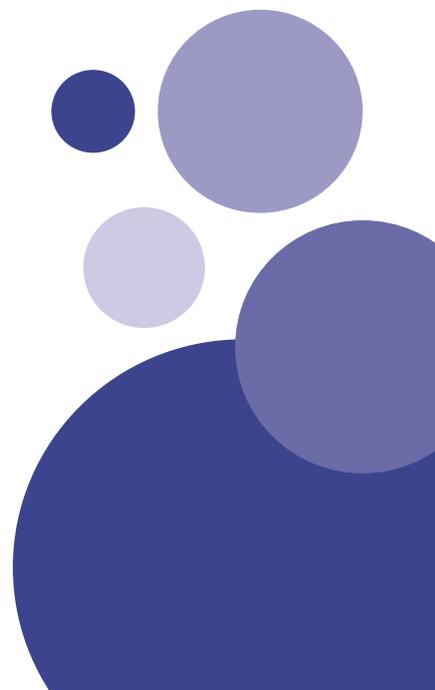
Studies have shown that interventions targeting math growth mindset had a much more positive influence on girls compared to boys (Blackwell, Tresnewski & Dweck, 2007; Good, Aronson & Inzlicht, 2003). In a study where a high schooler told sixth graders before a math test that students' success was due to the effort exerted, scores increased for girls but not boys. Girls with this intervention scored 5% higher than boys, but without this intervention they scored 20% lower (Bagès et al. 2016).

The perception of parents also plays a crucial role. Cheng with colleagues (2017) found that parents' math growth mindset (something first studied by Eccles and Jacob, 1986) increased children's growth mindset with the effect on girls being twice as large as on boys.

Since gender stereotyping is prevalent in the field of entrepreneurship and females have lower confidence in their entrepreneurial ability (Koellinger, Minniti & Schade, 2013), it can be anticipated that similar interventions, targeting entrepreneurial growth mindset and perception of the parents, can have a particularly positive effect on females. [5]

Can entrepreneurship education bridge the gap?

Compared to males, females have not only less confidence in their entrepreneurial ability, but also lower levels of entrepreneurial intentions (Koellinger et al., 2013). Wilson, Kickul and Marlino (2007) found in their study that this pattern holds for both females in middle/high school and for MBA students. They did, however, find that a concentrated focus on entrepreneurship education in the MBA programme had a larger



influence on females' entrepreneurial self-efficacy compared to males. Actually, females in this group, on average, surpassed the males' level of entrepreneurial self-efficacy by the end of the programme.

A similar pattern is found by Lyons and Zhang (2017, 2018), who studied the influence of an incubator programme. The short-term influence of this programme was more profound for Caucasian males, but the long-term effects were much more pronounced for minorities and females - almost large enough to offset the negative association between being a minority or female and subsequent entrepreneurial activity. They go so far as to question whether it makes sense to provide entrepreneurially privileged groups with incubation programmes, since these mainly provide role models and networks to which these groups typically already have access. They argue that these role models and networks should instead be provided to groups that have more difficulty in accessing these types of resources.

Bechthold and Huber (2018) performed an interesting large-scale practical trial on German university students. In this trial they were able to randomise the allocation of entrepreneurial mentors. They found that females who had female mentors increased significantly more their levels of entrepreneurial self-efficacy. Mechanisms that moderated this effect were mentors signalling high levels of supportiveness and interest in the students' entrepreneurial outcomes.

Our own studies show that entrepreneurship education has a more positive influence on females compared to males. In our large-scale study of the challenge-based entrepreneurship programme Youth Start – Entrepreneurial Challenges (Moberg, Huber, Jørgensen & Redford, 2018), we found that female students improve significantly more than male students in their confidence in performing competences that are typically viewed as traditional obstacles to female entrepreneurship, such as financial literacy, managing uncertainty and marshalling resources. It should however be noticed that, due to issues with ceiling effects, it is easier to increase a lower initial level, which is something

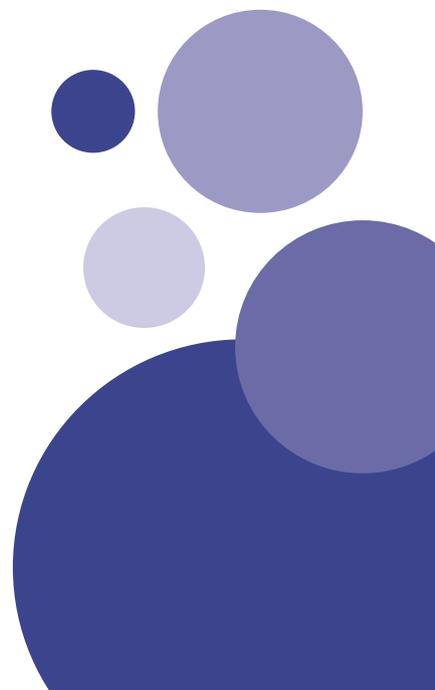
that typically characterises females in these kind of studies.

Summary

Overall, research indicates that entrepreneurship education can be an efficient means to increase interest in entrepreneurship among females as well as their confidence in acting entrepreneurially. There are unfortunately only a handful of well-performed studies within the field (e.g. Bechthold & Huber, 2018; Moberg et al., 2018; Lyons & Zhang, 2017, 2018). There is a great need for additional studies with high methodological rigour in multiple areas and educational contexts. There are multiple studies within the field of STEM education that could be used as inspiration, both in regard to methods as well as topical focus.

3) Likert scales used in psychometric scales have a finite max score. This creates issues since respondents can already before the intervention max out their scores. This makes it impossible for them to achieve a measurable improvement.

Although targeted interventions can be difficult to align with an education system that wishes to be colour and gender blind, there is room for generic interventions (dealing for example with pupils' growth mindset) and strategies for group composition in educational competitions. It is also important that students are exposed to a broad scope of role models of different backgrounds. Since it has been demonstrated that a group of diverse problem solvers can outperform a group of the best problem solvers (Hong and Page, 2004), our society would clearly benefit if more females would engage in entrepreneurial activities and perceive entrepreneurship as a viable career choice.



FIVE TAKE-AWAYS FOR TEACHERS

[1] Use entrepreneurial role models with a varied background

Since the gender effect is strong it is preferable that at least 50% of the role models are female. However, factors such as age, ethnicity, educational background and area of expertise are also important to take into account. Since it can be difficult to provide role models that are relatable to all, it could be a good idea to complement the use of physical role models with online-based role models. Inspirational speeches and interviews of entrepreneurs and entrepreneurial individuals are available online. An alternative could be to have the pupils and the students to go out themselves and interview role models that they find relatable.

[2] Do entrepreneurship

Teach how to do entrepreneurship rather than how to become an entrepreneur. By focusing on the activity you surpass the stereotypical image of the male entrepreneur. By doing this, the focus will be on the behaviour and what this entails, rather than who the persons are that are performing this behaviour.

[3] Use gender-mixed groups

Use gender-mixed groups to avoid issues with competition. Even though females are less inclined to participate in competitions against males, they do improve more when doing so. It is thus beneficial to retain mixed-gender competition, but to deal with its adverse effects.

[4] Convey the image that entrepreneurship can be rewarding

By clearly conveying the image that education is important to entrepreneurs and entrepreneurial activities, it can become more attractive to female pupils and students. Entrepreneurs come in all shapes and sizes, and educational attainment is highly associated with entrepreneurial success.

[5] Provide a different image of entrepreneurship

Infuse in your pupils or students an entrepreneurial growth mindset. Emphasise the importance of effort and that entrepreneurship is something that can be learnt. When it comes to male dominated activities it is important to demystify the activity and the perception of it as being something innate.

Entreprenørskab for alle - evner til at skabe, forandre og gøre en forskel

Fonden for Entreprenørskab hjælper skoler og uddannelser med at fremme entreprenante og innovative evner hos elever og studerende. Vores mål er, at entreprenørskab er en naturlig del af undervisningen på alle uddannelsesniveauer i Danmark. Helt konkret arbejder Fonden for at sikre, at alle elever og studerende færdiggør skole og uddannelse med evner til at skabe, forandre og gøre en forskel som både talentfulde iværksættere og værdifulde medarbejdere til gavn for Danmark. Vi kalder det entreprenant dannelse.

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