

**Emilia Szymczak, *The dynamics of women's access to technical studies. Social theory and practice*. Poznan 2016: Adam Mickiewicz University Press. Pp. 395.**

The processes of women's emancipation range from personal life to public sphere, including education and professions where women gradually enter areas which used to be reserved exclusively for men. Of course, it is difficult to find full equality there, particularly in the job market, however women's access to studies is nowadays nearly unlimited. Today they begin to outnumber men even in typically men studies such as law or medicine while in the past women studied mainly pedagogy, art or philology. It seems that the last reserve of men domination is polytechnic but even there things are basically changing.

Nowadays women are observed to show an increasing interest in scientific and technical studies also called STEM (*science, technology, engineering and mathematics*). The data presented in the report "Women in polytechnic studies 2007–2017" definitely show that the number of women in technical studies has a tendency to increase. In the last decade the percentage of female students grew from 31% to 37% and is still growing. In 2017 the total number of women in technical studies in Poland was 104.039 (Raport, 2917, p. 3). Undoubtedly, this phenomenon is connected to the economical and socially-cultural changes happening in the last years as well as to the changes in a modern woman's identity and her growing educational and professional aspirations.

The book by Emilia Szymczak *The dynamics of women's access to technical studies. Social theory and practice* is an exceptionally interesting theoretical and empirical study in the field of the sociology of education, where the subject of women's access to technical studies is discussed in the context of women's position and social status which has changed in the last decades. She rightly points out that polytechnic studies are "the example of vanishing the differences existing in the society and at the same time, by the gradual breaking traditional patterns, roles and beliefs, they are the lab of social change" (p. 11) [the problems of realising the women's emancipation in the area of education are analysed in a broader context by Agnieszka Gromkowska-Melosik in the book *Education and social (in)equality of women. The study of the dynamics of access* (Krakow, 2011)].

The work consists of two parts. The first one—theoretical—contains five chapters that include the analysis of theoretical concepts explaining the ways of perceiving femininity and masculinity. Social and professional roles played by the two groups are the main background here. In this part the author also describes the dynamics of women's access to education at universities and colleges taking into account especially polytechnic education. The other part is empirical and contains the analysis of the research conducted by the author. The participants were a group of female students of polytechnic studies and a group of male engineers working in jobs traditionally recognised as men occupations.

Chapter one in a very convincing way demonstrates two theories concerning the perception of femininity and masculinity—biological essentialism and social constructivism. Emilia Szymczak shows the process of socialising and preparing individuals for traditionally perceived feminine and masculine roles, which result in creating social inequality between sexes. She describes stereotypes that function in society and determine the divisions between male and female categories also in educational and occupational context. This chapter is a very good start to the analyses conducted in the next parts of the book.

In chapter two there are sociological interpretations of women's access to the job market. The analysis of the concept contains the structurally-functional approach with the theory of Talcott Parsons as well as the approach of Samuel Bowles and Herbert Gintis concerning the economic reproduction and finally the theory of cultural reproduction by Pierre Bourdieu. Her essentially advanced contemplation the author conducted from the perspective of women's access to studies and job areas considered as traditionally masculine.

Chapter three shows both the historical view and the modern look at the trends in the access of women to polytechnic studies. Emilia Szymczak starts her analysis with the description of higher education of women in the past. Later she presents the history of polytechnic schools in Poland and in the world. The author shows the stages of the development of such schools as Lvov Polytechnic University, Warsaw Polytechnic University, Gdansk Polytechnic University, Wrocław Polytechnic University and Krakow Polytechnic University. Moreover, she presents statistics describing the number of women in particular studies at selected universities in the first year of their studying. The next part of this chapter concerns the current participation of women at polytechnic studies and the trends for the future in this area. It also relates to how women's choices in education and careers are perceived in the context of their development and functioning in a traditionally masculine job environment. The evaluation of this chapter is definitely positive.

In chapter four Emilia Szymczak in a remarkable way presents the social construction of an engineer's job, paying special attention to current changes in engineering. She highlights that the changes are connected to technological improvements which allowed optimization and affected the contemporary picture and nature of work in this field. As she rightly notices "engineering—as a professional field—becomes another optional occupation that does not have to—in assumption—be performed by people characterised by great physical strength, which traditionally is assigned to men (p. 11). This part also raises the issue of women's sense of identity in an engineer profession and their functioning in this field. This identity is shaped by a number of various factors: social, cultural, political and economic. The end of the chapter presents the problem of masculinisation of women working as engineers. The author asks the question whether undertaking masculine studies at technical schools is the cause of

women's masculinisation and to what extent they are forced to resign from their femininity in order to better adapt in the engineers environment?

Chapter five presents social campaigns encouraging women to conduct their education at technical schools. The author highlights that the schools are "the example and a specific exemplification of actions aiming at counteracting the phenomena of inequality at job market" (p. 192). The next part of this chapter is devoted to analysing online advertisements of selected schools in Poland and abroad, causing modern women to turn their attention to studies thought to be typically masculine. The author basing on advertising campaigns tries to list types women dealing with engineering naming four of them: a specialist, a partner, a perfectionist and an enthusiast. The considerations in chapter five are very interesting and deserves appreciation.

In chapter six the author discusses the methodology of her own study that was conducted with the use of in depth, semi-structured interviews. Emilia Szymczak used open-ended questions which allowed her to fully learn the opinions of women studying at polytechnic schools in Poland and men working as engineers. The starting point for the research was formulating two research problems:

*How do women that study at polytechnic schools perceive their education and the perspectives on realising their plans?*

*How do men working as engineers perceive the potential of women in this occupation and their capabilities and restrictions resulting from the position of an engineer?*

The following part of this chapter analyses and presents the results of the survey in relation to clearly defined areas of study. In the case of the first question the problem concerned educational and occupational choices of women and their access to typically men studies, the adaptation of female students to the polytechnic environment also in the context of women's masculinisation, the perception of potential personal, educational and occupational success of female engineers. In the second question the survey areas covered different roles of men and women at work, to how women function in engineering also in the context of their success and the comparison of the job of an engineer to the role of a mother and wife. In this way the author gained in-depth knowledge of how female students and male engineers see the issues and controversies of polytechnic education of women. This led to many interesting comparisons and conclusions.

Both conducting the research and presenting its results deserves very high evaluation because of the logical argumentation of the author who referred to scientific theories presented in the theoretical part of the work. It is additionally valuable for the dichotomy of the survey in which Emilia Szymczak shows two perspectives of social groups different according to sex, age and experience. The groups are connected to the same area of education which is science and they have or intend to have the job of an engineer.

To conclude, the reviewed work is an excellent treatise on a very important issue in the field of the sociology of education. Emilia Szymczak showed and discussed changes in women's position and social status. The author used vivid literature on this subject that was an excellent base for conducting her research. It is worth emphasizing that the empirical part of the book is very interesting and the analysis of the research results is valuable and complex. It must be clearly highlighted that the reviewed book has a great technical value, very good narration and an excellent writing style. Without any doubts the work by Emilia Szymczak deserves the highest mark.

#### REFERENCES

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