

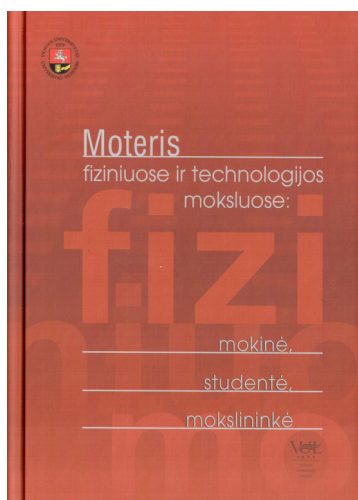
BOOK REVIEWS

 -----TRANSFORMATIONS IN -----
BUSINESS & ECONOMICS

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Reviewed book: Aurelija Novelskaitė, Giedrė Purvaneckienė (sud.). *Moteris fiziniuose ir technologijos moksluose: mokinė, studentė, mokslininkė*. -Vilnius: VUL, 2011.

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Title: **MOTERIS FIZINIUOSE IR TECHNOLOGIJOS MOKSLUOSE: MOKINĖ, STUDENTĖ, MOKSLININKĖ**
(Woman in Physical and Technological Sciences: Schoolgirl, Female Student, Female Scientist, Engl.)

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The publishing of monograph was well-timed. It serves as a response to the critique regarding poorly developed gender equality policy in Lithuanian science and publishing. This publication can be treated as a capital work in the realm of gender studies, because it presents the newest scientific research which analyses gender peculiarities in physical and technological sciences; to be more precise it reveals the problem of women's minority in the above mentioned spheres. This situation can predestine not only scientific career development of women and men, but also the development of Lithuanian science in the period of technological outburst.

The monograph analyses three basic levels of women's participation in science as well as their relation with the essential periods of women's scientific activities and career:

a) studying in a secondary school when the basics of nature sciences, mathematics and information technologies are acquired, when early scientific socialization takes place and when the first decision of future professional choices are made;

b) the period of studies in higher school when not only the system of scientific knowledge as well as scientific skills and competences are developed, but also perspective professional development career and / or family creation possibilities are being assessed;

c) scientific research while becoming a full-time member of academic and scientific communities.

So as to reveal the specificity of these periods the authors use data of empirical research conducted in three different years. The following advantages and exclusiveness of the monograph can be emphasised:

Firstly, it adds a lot to the non-numerous research as regards Lithuanian women's and men's equal possibilities in different spheres of public life; acquaints Lithuanian academic community and society in general with gender issue in realm of Lithuanian science.

Secondly, it overviews the dynamics of equality status among girls and boys, women and men in different life periods starting from secondary school later higher educational institution and concluding in academic scientific research in physical and technological sciences in different educational institutions. Accordingly, a systematic non-stopping and summarising overview of women's career perspective in physical and technological sciences is being revealed. The above mentioned view enables us to compare with women researchers in EU countries and using the results of comparison to develop the gender equality motivating policy in Lithuanian science as well as to initiate women's participation in scientific discussions.

Thirdly, the significant input of the monograph is to expand the limits of social knowledge about the sensitive and poorly researched phenomenon in Lithuania that is peculiarities of gender in science. In that way the monograph adds to the social theory which grounds both the essence of social phenomena and pedagogical processes, creates and develops new research methodologies.

Fourthly, living in the society of limited resources the authors of the monograph rationally cooperate to their scientific knowledge, empirical experience and methodological mastery, which undoubtedly enhance the value and usefulness of the publication.

The monograph consists of the introduction with detailed methodology of empirical research and three topical parts: 1. Initial position: school. 2. The most significant choice: studies at higher school. 3. Scientific research: constant development or final destination? The publication is concluded by the final word that is text "Physical and technological sciences in Lithuania after 50 years. Where are women?"

In *Part I* of the monograph "Initial position: school", comprising *five chapters*, A. Urbonienė overviews and presents preconditions for the development of gender professional motivation in the sphere of physical and technological sciences: *professional motivation* (professional interest, knowledge accessibility in practice, society needs), *effectiveness* (specific professional skills, qualities, acquired knowledge, personal experience) and *behaviour* (additional activities, efforts). The following external factors were identified: study subject (learning methods, specificity of study subject, study level), the impact of women teacher / men teacher (submissiveness to schoolgirls and schoolboys, cooperation between teachers and learners, teacher motivation, teacher competence) and the impact of family members and other relatives. The second chapter of monograph "Researcher: sexy blond women or ugly witch?" was prepared by A. Urbonienė and is closely related to the fashionable image discourse which orients schoolboys and schoolgirls towards inappropriate evaluation of external appearance. The third chapter "Teachers' and learners' attitude towards

women's and men's activities and career possibilities in the sphere of physical and technological sciences" was written by A. Novelskaitė and I. Stonkuvienė. This chapter reveals conscious and publicly declared approval of gender equality assumptions, although, taking into account the fact, that students of pedagogical study programmes are not provided with gender equality education, gender psychology, cultural gender socialisation, gender education pedagogy or didactics. All the above mentioned subjects are oriented to the needs of a child, a youngster of both sexes. They are very helpful providing for the needs of self-realisation, self-awareness, freedom, love and respect, creation, order and harmony. Thus, we may only expect for the generation of teachers with self-contained awareness. The other chapter of monograph "Search for the correct teaching / learning content and methods in the aspect of gender" was prepared by I. Stonkuvienė. It attracts our attention to the fact that in the opinion of majority of teachers the content means and methods of physical and technological sciences prevents schoolgirls and schoolboys from active interest in science. The applied teaching and learning methods do not enhance learners activeness, creativity, independence, although, one of the goals of physics study programme is to enable learners to develop their natural science competence.

Part 2 of the monograph "The most significant choice: studies at higher school" consists of *four chapters*. G. Purvaneckienė in the chapter "Internal and external factors of motivation choosing study area: retrospective opinion of women students and researchers" positively includes the idea that physical and technological sciences are commonly chosen by those schoolgirls who feel that these sciences are interesting or those who have specific skills and inclinations for that sphere of studies. Empirical research has identified examples of successful women's career, parents and competent teachers who are able to conduct interesting lessons and to involve schoolgirls into after school scientific activities. All these factors have a great impact on schoolgirls' professional choices. A. Novelskaitė and A. Urbonienė in the chapter "Does this profession suit me? Women and men students' attitude towards the status of professions related with physical and technological sciences" presents a more optimistic view to the reader claiming, that women students who choose the above mentioned professions demonstrate more egalitarian view points than men students and presume that these professions are equally suitable to both women and men. But women students at the initial stage of studies face stereotypical and discriminatory attitude towards women, thus, they experience more doubts about professional suitability. A. Urbonienė in the chapter "Educational factors motivating women students for the professional career in physical and technological sciences" emphasises the importance of academic environment and organisation of studies which precondition the development of professional motivation for women students studying physical and technological sciences. The second part of monograph is concluded by G. Purvaneckienė's chapter "Studying experience of women students in physical and technological science: support or discrimination?" This chapter is devoted to the analysis of women students' experience while studying physical and technological sciences, to the impact of internal and external factors influencing women students' choice to continue their studies in physical and technological sciences. Besides, this chapter confirms the existence of gender stereotypes in academic environment and negative opinion about studying and career possibilities in physical and technological sciences. It once again attracts our attention to assumption, that if conditions do not change the enrolment of women students into the above mentioned sciences areas on master programme level (or even scientist's professional career) will not increase. Such situation will embed uneven development of technological sciences in our country.

In *Part 3* of the monograph "Scientific research: constant development or final destination?" G. Purvaneckienė presents the chapter "Women's career in physical and

technological sciences: theoretical possibilities and achievements”. This chapter discusses obstacles which women experience on the level of society, institution or individual life when stereotypical attitudes dominate or when infrastructure of educational institution is outdated. The chapter “Reflection of woman as a member of academic community in university mass media” had written by A. Novelskaitė reveals the global tendency of Lithuanian women researchers’ “invisibility” and “non-representativeness” in mass media.

All ideas presented in the monograph are summarised by provocative final text “Physical and technological sciences in Lithuania after 50 years. Where are women?” The answer to this rhetoric question is based on the following conclusions: firstly, if we want to increase the number of women students in physical and technological sciences we must improve teachers’ education in higher schools especially in the aspect of gender and sex education and we must encourage life-long education of teachers. Secondly, if compensatory strategies are not created and implemented in physical and technological sciences (spheres where women students are minority) and if special supportive means for studying women students are not provided, and if universities do not take care of the enhancement of lecturers’ competence as regards gender issues there is a high possibility that the number of schoolgirls choosing physical and technological study programmes will decrease. Consequently, technological innovations in the development of different societal areas will bypass women, will not provide for their need and interests. What kind of life quality is being projected if women as the majority of society is not represented in future physical and technological sciences?

Summarising a claim can be made that this collective monograph is more empiric than theoretic in its nature. Thus, it is especially valuable and useful not only to the participants of different programmes and courses of higher education and other educational institutions, but also to practitioners of public administration, to the employees of continuous study institutions, to the academic community that is interested in social and educational development of Lithuanian society. It must be admitted that the co-authors of this monograph adequately expand the limits of social knowledge about specific phenomenon, which is gender peculiarities in science and considerably add to the creation and development of social theory and insights of pedagogy sciences. It also competently compares our experience with the insights and empirical findings of foreign researchers.

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SANTRAUKA

Kapitaliniame lyčių lygybės politikos mokslo šios leidinyje pristatomi naujausi moksliniai tyrimai, kuriuose nagrinėjami lyties ypatumų fizinių ir technologijos mokslų, konkrečiau – esančios moterų mažumos minėtose srityse, problematika, galinti nulemti tiek moterų ir vyrų mokslinės karjeros kelią, tiek Lietuvos mokslo raidą technologijų proveržio eroje.

Monografijoje analizuojami trys svarbiausi moterų dalyvavimo moksle lygmenys, susiję su pagrindiniais moters mokslinės veiklos ir karjeros periodais:

a) mokymosi bendrojo lavinimo mokykloje laikotarpiu, kai įgyjami gamtos mokslų, matematikos ir informacinių technologijų pagrindai, kai vyksta ankstyvoji mokslinė socializacija bei priimami pirmieji profesijos pasirinkimo sprendimai;

b) studijų aukštojoje mokykloje periodas, kuomet ne tik papildoma mokslinių žinių sistema, lavinami mokslinės veiklos gebėjimai ir kompetencijos, bet įvertinamas ir pasirenkamas perspektyvinis profesinio tobulėjimo, karjeros ir / ar šeimos kūrimo projekto kelias;

c) mokslinė veikla, tapus pilnateise akademinės, mokslinės bendruomenės nare.

Tų periodų ypatumams atskleisti autorės naudoja trijų skirtingais metais ta pačia tematika atliktų empirinių studijų duomenis. Pažymėtini šie monografijos privalumai ir išskirtinimai:

Pirma, ji papildo negausius Lietuvos moterų ir vyrų dalyvavimo lygių galimybių visose viešojo gyvenimo srityse tyrinėjimus platesniu ir išsamesniu aspektu; supažindina Lietuvos akademinę bendruomenę ir, apskritai, visuomenę, su lyčių problematika Lietuvos mokslo sociume.

Antra, apžvelgiama merginų ir vaikinių, moterų ir vyrų lygybės būklės dinamika jų gyvenimo ciklo ašyje, pradedant bendrojo lavinimo mokykla, vėliau aukštojo mokslo institucijoje ir baigiama akademinė mokslinė veikla fizinių ir technologijos mokslų ir studijų institucijose. Tokiu būdu, sudaromas apibendrintas nenutrūkstantis, sisteminis moters karjeros perspektyvumo fiziniuose ir technologijos moksluose vaizdas. Pastarąjį galima lyginti su moterų mokslininkų padėtimi ES šalyse ir, juo remiantis, formuoti lyčių lygybės skatinimo politiką Lietuvos moksle bei inicijuoti moterų dalyvavimo moksle diskusijas.

Trečia, svarus monografijos indėlis, plėtojant socialinio žinojimo apie jautrų ir menkai Lietuvoje nagrinėtą fenomeną – lyties ypatumus moksle – ribas. Tokiu būdu prisidedama prie socialinės teorijos, grindžiančios socialinių reiškinių ir pedagoginių procesų sankirtos, tyrimų metodologijos kūrimo bei tobulinimo.

Ketvirta, gyvenant ribotų išteklių visuomenėje, racionaliai kooperuojamas autorių mokslinis žinojimas, tyrimų patirtis ir metodologinė meistrystė, neabejotinai, tik padidina kūrinio pridėtinę vertę ir naudą.

Monografiją sudaro įvadas su detaliai apibūdinta empirinių studijų metodologija ir trys tematiniai skyriai: 1. Pradinė pozicija: mokykla. 2. Reikšmingiausias pasirinkimas: studijos aukštojoje mokykloje. 3. Mokslinė veikla: nuolatinis kilimas ar galutinė stotelė? Kūrinys apibendrinamas epilogu „Fiziniai ir technologijos mokslai Lietuvoje po 50 metų. Kur moterys?“.

Apibendrinant reikia pažymėti, kad ši kolektyvinė monografija – daugiau empirinio nei teorinio pobūdžio, todėl ypač vertinga ir naudinga ne tik aukštojo mokslo ir švietimo įstaigų programų bei kursų klausytojams, bet ir viešojo administravimo praktikams, taip pat tęstinio mokymo institucijų darbuotojams bei akademinėi bendruomenei, besidominčiai Lietuvos visuomenės socialine ir edukacine raida

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