



**2020 IEEE
International Conference
«Quality Management,
Transport
and Information Security,
Information Technologies»**

IT&QM&IS

ISBN 978-1-7281-8179-0

Proceedings
of the 2020 IEEE International Conference "Quality
Management, Transport and Information Security, Information
Technologies" (IT&QM&IS)

September 07-11, 2020

Yaroslavl
Russia
2020

Preface

The IEEE Russia North West Section, Pashkov State Academy of Industrial Management (Yaroslavl), and the European Centre for Quality (Moscow) are pleased to present the Proceedings of the 2020 International Conference "Quality Management, Transport and Information Security, Information Technologies" (IT&QM&IS).

The Conference was held in Yaroslavl, Russia on September 7-11, 2020, and it was proudly hosted by Pashkov State Academy of Industrial Management. The Organizing Committee believes and trusts that we have been true to the spirit of collegiality that members of IEEE value whilst also maintaining a high standard as we reviewed papers, provided feedback and now present a strong body of published work in this collection of proceedings.

The themes for this year's conference were chosen as a means of bringing together academics and industrialists, engineering and management research, manufacturing and teaching, and providing a basis for discussion of issues arising across the engineering and business community in relation to Quality Management, Information Technologies, Transport and Information Security aimed at developing engineers and managers for the future.

The goal of these proceedings has been to present high quality work in an accessible medium, for use in a wide community of academics, engineers, managers, and industrialists, the community united by the key words: Science, Education, Quality, Innovations in engineering. To achieve this aim, all papers submitted for publication in this journal of proceedings were subjected to a rigorous reviewing process.

Prof. Vladimir N. Azarov,
Dr. Sergey O. Shaposhnikov,
Co-Chairs of the Conference Organizing Committee

Copyright

Copyright for all refereed papers published in the Proceedings is owned by the IEEE.

Publishing Details

Proceedings Edited by S. Shaposhnikov 2017 St. Petersburg, Russia: Saint Petersburg Electrotechnical University "LETI"

Prof. Popov str. 5, 197376, Saint Petersburg, Russia

Telephone: +7 812-234-2691

Fax: +7 812-234-2691

ISBN 978-1-7281-8179-0

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic or otherwise, without the written permission of the IEEE.

978-1-7281-8179-0/20 \$31.00 ©2020 IEEE

Implementing Distance Technologies in the Educational Process of the Master's Program

Vladimir G. Isaev¹, Nadezda P. Astasheva, Ekaterina A. Zhidkova
«Technological University», State Budget Educational Institution of Higher Education of Moscow Region
Korolev, Russia
¹vg.isaev@gmail.com

Abstract—The article presents the results of analyzing the problems that arise in the process of training in a Master's program in one group of students, both with and without basic education in the major of the Master's program.

Teaching options are offered for groups of undergraduates with different levels of basic knowledge in major subjects, based on the experience of teaching undergraduates at the Technological University. As the main method, we offer additional distance learning for undergraduates which aims at forming the basic knowledge necessary for the quality masters training.

Keywords—Master's programs; distance learning; online learning; education

I. INTRODUCTION

At the University of Technology at the Department of Quality Management and Standardization, training in the programme of quality management (Master's level) has been carried out since 2015. For the initial few years, graduates with a Bachelor's degree in Quality Management and Innovation entered the Master's program, and then over time, the situation has changed. Now more and more graduates of other institutes and specialisations enter.

II. THE NEW EDUCATIONAL SYSTEM OF THE RUSSIAN FEDERATION

The education in the Russian Federation has undergone major changes in the context of adopting the Bologna system in 2011. According to the new educational system of the Russian Federation, Master's program is the stage of higher education following Bachelor's or specialist programme. Master's degree is an education level following Bachelor's programme.

Bachelor's degree, in the context of multi-level education, which is currently being implemented in the Russian Federation, is the stage of education that provides general competencies in Quality Management.

The Master's program in Quality Management should deepen the Bachelor's level of education, since it is quite general. A Master's program can enlarge knowledge in terms of tools, professional activities, analytical activities, and so on. It can expand it, because the Bachelor's degree is general, and the Master's degree is implemented in a certain specific subject area related to a specific professional activity on the basis of the Bachelor's degree, in terms of the subjects studied.

Also, the Master's program can also provide another opportunity. This is an opportunity to change the major, when a student receives knowledge in one area in the Bachelor's program, and another one in the Master's program.

Thus, the Master's degree is the next step after the Bachelor's degree in higher education, which is aimed at in-depth study of specialization in the chosen profession. One would think that the specialist's degree gives more thorough knowledge, but specialist students also enter the Master's program, mainly for professional development. The Master's degree program not only gives the opportunity to improve the skills in the chosen area, but also to change the profession.

Those wishing to enrol in the Master's program have the right to apply to no more than 5 higher education institutions at a time. In each of these institutions, the incoming applicant has the right to participate in the competition in no more than 3 majors or areas of training, as defined by Federal law No. 273-FZ On education in the Russian Federation [1] and the rules for admission to Master's degree programs [2].

For admission, you need to have a Bachelor's or a Specialist degree and pass an interdisciplinary exam in the chosen specialty.

A significant number of Master's programs research in the Russian Federation show that 30% of Bachelor's and specialist's graduates choose the same specialty when entering the Master's program, 50% of graduates also choose a similar one, changing their major. At the same time, 20% of graduates choose a completely different area of study that is not related to their previous higher education Fig. 1 [3].



Fig. 1. Directions of basic training for admission to the Master's program