Virtual 8ᵗʰ Higher Education Institutions Conference

26-27 November, 2020
Reinventing Higher Education

PROCEEDINGS

Double-Blind Peer Reviewed

Edited by: Karmela Aleksić-Maslać and Philip Vranešić

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REINVENTING HIGHER EDUCATION

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Content

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Welcome Note

Dear Guests,

On behalf of Zagreb School of Economics and Management, Croaa's first AACSB accredited business school, let me wish you all a warm welcome to our eight consecuve Higher Educaon Instuons Conference — HEIC 2020 — "Reinvenng Higher Educaon"— and a first one held enrely online.

At the me of the last year's Conference, few people could have imagined how profoundly different life would become in 2020. The ongoing COVID-19 pandemic has altered many prac ces we have taken for granted. It has also opened new venues and allowed us to tap into technological resources that some of us may have been reluctant to resort to during the normal mes. ZSEM has, for its part, long been developing its online learning tools, which enabled it to carry on with teaching and working with its internaonal body of students.

The ongoing COVID-19 proves to be not only an immense health crisis that has le in its wake too many tragic outcomes, strained healthcare budgets and economic upheavals, but it also proves to be a significant social and psychological hardship. Such a situaon hardly bodes well for the higher educaon sector. However, we strongly believe that our connued efforts to improve the experience of higher education, not least of which are these annual HEIC-Conferences, can only make us more resistant, enabling us to avail from best prac ces we have acquainted ourselves to, even when we are confronted by most serious of circumstances.

It is for this reason that this year's HEIC Conference is a historic one. We therefore intend to make it as effec ve and thorough as any of the previous ones. As was the case with all the Conference ou ngs so far, this online edion of HEIC shall facilitate exchange of most tangible insights from the higher educaon sector. We hope that the next year's Conference shall take place in a more tradional seng, preferably somewhere on the Adria c Coast, and that by that me we will have overcome the current impediments, nevertheless recounng our experiences and analyzing data about these most unusual of mes.

Best regards,
Đuro Njavro, PhD
Dean, Zagreb School of
Economics and Management

Organizing Committee

dr. sc. Đuro Njavro
Conference chair, Dean, Zagreb School of Economics and Management

mr. sc. Karmela Aleksić-Maslać
Associate Dean, Zagreb School of Economics and Management

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Dean, Luxembourg School of Business

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St.Gallen Institute of Management in Asia, Singapore

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University of Ljubljana, Slovenia

dr. Michael Hanke
University of Liechtenstein, Liechtenstein

dr. sc. Richard Tresidder
Sheffield Hallam University, UK

dr. sc. Shab Hundal
Jyväskylä University of Applied Sciences, Finland

dr. sc. Siniša Krajnović
Digital Services in Market Area North East Asia at Ericsson, Beijing, China

dr. sc. Victoria I. Pyatanova
Plekhanov University, Russia

Keynote speakers

Siniša Krajnović, PhD

Siniša Krajnović is Executive Vice President and Head of Digital Services in Market Area North East Asia at Ericsson. He is responsible for Ericsson Digital Services business in Mainland China, Hong Kong, Macau, Taiwan, Japan, and South Korea. Business Area Digital Services offers products, services, and end-to-end solutions to communication service providers and enterprises in areas such as 5G Core Networks, OSS/BSS, Cloud Infrastructure, IoT, and Digital Transformation. Since 2018 he lives and works in Beijing, China. Krajnović is an experienced Board Member, including both Chairman of the Board role and Board Director role, on various Ericsson local companies and joint ventures boards, as well as on chamber of commerce and business school boards. Previously, Krajnović served as Vice President and Head of Development Unit Networks in Ericsson, living and working in Stockholm, Sweden. He led more than 15,000 engineers in the global R&D organization that focuses on technology leadership of Ericsson's hardware and software Radio Access Network products.

Siniša Krajnović has a long and varied international management background in telecoms, as well as an extensive multicultural experience gained from living and working in Croatia, UK, Ireland, Japan, Hungary, Sweden, and China.

Krajnović is active in the academic world. He is Professor at the Zagreb School of Economics and Management in Croatia, and Program Director of the school's General MBA Program. He is Professor at the Luxembourg School of Business in Luxembourg, and a member of its Advisory Council. Krajnović is also Visiting Professor at the Tsinghua University School of Economics and Management in China. He was co-founder and first president of the Croatian branch of the Project Management Institute, the leading global project management association.

Siniša Krajnović earned MSc and PhD degrees from the Faculty of Electrical Engineering and Computing at the University of Zagreb, Croatia. He completed several executive development programs, at Columbia University in the US, Cranfield University in the UK, University of Zagreb in Croatia, IMD Business School in Switzerland, and Indian School of Business in India.

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Boris Debić, M.Sc.

Boris Debić, Google's Chief History Officer emeritus, is a technologist who spent 15 years with the company from its earliest days and in the period of the most accelerated growth ($3B to $161B revenue/yr, 3500 to 210k workforce). He holds an M.Sc. in Physics from the University of Zagreb, Croatia. At Google he has worked in several roles: Release engineering, G+Privacy, Global Infrastructure, Data center site location, AI driven decision making, Ads serving and machine learning infrastructure, Developer Relations. He has worked with Google.org on analysis and exchange of global climate modeling data sets and agricultural data to provide food security forecasts, also in providing access to education to Syrian refugees in Jordan and across the Arab world. With support from NASA Ames directs Mars Society's NorCal Rover project. He is a board member of several high tech startup companies in both the US and Croatia including http://production.pro which was featured as a top three at Launch Fest in San Francisco. He teaches AI at the Zagreb School of Economics and Management. Prior to Google he held positions in: Silicon Valley startups, most notably E.piphany; the United Nations; the Croatian Ministry of Foreign Affairs and the University of Zagreb. Boris Debić has been a lecturer, invited keynote speaker, IEEE editor and organizer of Computer Science conferences.

Güner Gürsoy, PhD

Prof. Güner Gürsoy has received his Ph.D. from Bilkent University, Ankara, Turkey. He worked in several different universities and taught finance, business analytics, supply chain courses in undergraduate and graduate programs. For his administrative responsibilities, he was assigned as a Department Head, director of Research Centers, director of Social Sciences Institute, director of Distance Education Center, Business and Administrative Sciences Faculty Dean and Vice Rector. In universities he was mainly involved with curriculum developments, quality assurance systems, education system transformation projects, educational technologies and distance education management, strategic planning and management in higher education and foresight workshops on higher education systems. He also worked professionally on system analysis & design, international project management, design with simulation, strategic logistics system development and management. In his research and consulting; he was involved with the blockchain projects for Ticketing Transaction Settlement System of airline companies as well as carbon system design. He is currently managing an Erasmus project on gamification system development for financial literacy. He is also involved in competency-based assessment and learning systems development as well as career management system development with the support of online badge education. He is also working on micro learning systems for white and blue collars in different industries.

PANELISTS 2020
Panel 1: Reshaping faculty capabilities

Moderator
Borna Jalšenjak, PhD

Borna Jalšenjak, PhD is a leadership and business ethics professor at Zagreb School of Economics and Management and Luxembourg School of Business (Luxembourg). He also serves as an invited faculty member at St. Ambrose University in the United States and the Faculty of Philosophy and Religious Studies, the University of Zagreb in Croatia. His research interests are in business ethics and CSR and the cross-section between leadership (especially theories of motivation) and philosophy (primarily philosophical anthropology and ethics). Besides teaching and research, he is dedicated to his coaching practice and applying knowledge to real-life business problems. Dr. Jalšenjak has a master's degree in philosophy and religious studies from the Faculty of Philosophy of the Society of Jesus in Croatia and a doctorate in philosophy from the University of Zagreb. He has taken professional development programs at IESE Business School in Spain and has finished the ICF-certified coach training at Erickson Coaching International in Canada.

Panelists

Metka Tekavčić, PhD

Prof. Metka Tekavčić was named Dean of the Faculty of Economics, University of Ljubljana (FELU) in 2013. From 2001 to 2007 professor Tekavčič was Vice-Dean at the FELU. From 1999 to 2001 she was also the Head of the Academic Unit of Management and Organization. Her research interest lies in the fields of cost and performance management, as well as non-profit and especially education management. Prof. Tekavčič is president of the FELU's Senate and the Head of the Institute for Management and Organization. In 2014 she was awarded the Artemida award for Women's Excellence in Management. From 1992 till 2013 she was a member of the City Council of Ljubljana, Slovenia. She has long been and remains a member of the supervisory boards of many important Slovenian companies and other institutions. In addition to her work, prof. Tekavčič has also served as a member of the advisory board at the University of Primorska and was elected as vice-dean of Challenge: Future. In 2016, the Dean Tekavčič was appointed as a new member of the EQUIS Accreditation Board.

Vesna Dodiković Jurković, PhD

Vesna Dodiković-Jurković, PhD is a Vice Director of the Croatian Agency for Science and Higher Education (ASHE). Within the agency her main responsibilities include: Development and introduction of a model of external audit of Quality Assurance Units at Croatian HEIs; Dissemination of a good practice and promotion of a quality culture among HEI's at national level; Cooperation with other European and international agencies and networks that are oriented on processes of external evaluation in higher education sector; Human resources development and cooperation of ASHE with HEI's and scientific organizations as well as other involved stakeholders; Introduction of QA system in line with ESG at ASHE, and many more. Ms. Dodiković-Jurković obtained her PhD in 1998 from the University of Zagreb, Faculty of Nature Science. Since then she was participating in numerous international training programs such as "Performance Audit in the Public Sector" (Berlin, 2014), "Management of Higher Education Institutions" (Israel, 2012), "Evaluation of Science & Technology Policies" (Manchester, 2012), and many more. Ms. Dodiković-Jurković is also a member of the Scientific Committee CIMQUSEF since 2010.

Dino Ivan Dogan, PhD

Dr. Dino Dogan is an experienced executive and a professor of Management at the Luxembourg School of Business. He has extensive experience in the telecommunications and media sector. Dino has worked 10 years with Alcatel in their German subsidiary and in their Paris headquarters. In the Telekom Austria group, he acted as the CFO of their Croatian subsidiary and as CFO of Mobilkom Austria, overseeing and implementing the merger with Telekom Austria to create Austria's largest telecommunications operator – A1 Telekom Austria. For the successful integration, he was awarded the European Change Communication Award. Dino has also served as the CFO of Croatian Telekom (a member of Deutsche Telekom group) and has worked as a consultant at the Boston Consulting Group. Dino currently runs his own Business consulting and Design management company and acts as the CEO of Europlakat d.o.o. (a member of JCDecaux group). Dino received his MBA and PhD from the University of Stuttgart.

Inga Koryagina, PhD

Inga Koryagina, PhD is a Head of the International Division, Vice-Dean at the Faculty of Finance at the Plekhanov Russian University of Economics and is awarded the 5th place in Associated Professor's university rating in 2019-2020. Her academic disciplines are Marketing, Services Marketing, Strategic Marketing, International Business Etiquette, Cross-Cultural Communications in Business in Russian and English for bachelors and masters. In September 2020 she participating in the project of the Komsomolskaya Pravda website KP.RU — "Healthy conversation". In March 2020 she participated in the preparation of the participant in the finals of the Olympiad on team management in the professional sphere HEAD HUNTER -2020, who took 1st place, Rusalliance "Sova". In January 2020 she received a diploma for the scientific advising of the student who won 1st place in the Open Competition of Initiative Research Projects "HIGH GOALS — 2019" with the article "The Current State of Academic Mobility of Foreign Students in Russia", Rusalliance "Sova". In July 2019 she was a Guest Lecturer at the Pompeu Fabra University International Business School and ESCI Universitat Pampeu Fabra Graduate School of International Business (Barcelona).

Panel 2: Striving in innovating environment

Moderator
Mato Njavro, PhD

Mato Njavro, PhD is the dean of the Zagreb School of Economics and Management, where he teaches financial courses. Mato Njavro is also a professor at the Luxembourg School of Business and a lecturer at the University of St. Gallen and Singapore Management University where he teaches the Chinese Economy course.

From 2016 to 2020, Mato resided in Singapore where he worked at the Institute of Management of the University of St.Gallen in Asia (SGI-HSG) and Singapore Management University. Before moving to Singapore, Mato spent a year as a postdoctoral fellow at Harvard University. His research interests are focused on financial markets, public policy and economic development. He is the author and co-author of several scientific papers and studies, including the Harvard Business School case: "Atlantic Group" on one of the largest M&A transactions in the CEE region.

He is the founder and academic director of the New Europe Business Forum, an interdisciplinary event that brings together world leaders from various fields once a year to discuss topics of great importance to our society as a whole such as entrepreneurship, leadership, scientific innovation and economic policy.

He completed his undergraduate and graduate studies at the Bocconi University in Milan in the field of economics and finance, and received his PhD from the University of St. Gallen in Switzerland in the field of finance. Before earning his PhD, he gained work experience in London working for Lehman Brothers and Nomura, in the investment banking sector.

Panelists

Tamás Pesuth, PhD

Tamas Pesuth, PhD is an Associate professor at the Institute of Finance, Accounting and Business Law, Department of Finance. He received his PhD in International Relations at the Corvinus University in Budapest, Hungary. From 2016 to 2017 he was a Director of International Relations at the University. From 2017 to 2019 he was Director of External Relations at the University. In 2015, he spent five months as a Visiting PhD Researcher at the University College in London. In 2014 he spent 7 weeks at Harvard University and he was a Guest Lecturer at MGIMO University, Shanghai International Studies University, University of Southern California, Marshall School of Business and Saint Petersburg State University, Graduate School of Management. He speaks English, German and Russian.

Panel 3: Sustainable financial models

Moderator
Zoran Barac, PhD

Zoran Barac, PhD is the Managing Director of the Zagreb School of Economics and Management (ZSEM) where he is also the Head of the Finance and Accounting Department. Dr. Barac received his Ph.D. in Management at the University of St. Gallen in Switzerland and his M.Sc. in International Economics at the University of Zagreb, Faculty of Economics and Business. Currently he teaches the course: Corporate Governance. Before joining the Zagreb School of Economics and Management, Dr. Barac held several senior executive and board positions in the corporate sector such as a finance director of the regional media company and CFO of a pharmaceutical distribution company. Before entering the corporate sector, Zoran Barac was the President of the management board of the Croatian Pension Investment Company. Dr. Barac also served as a Governing Board member of the Croatian Pension Supervisory Authority in the period from 2000 to 2005. Dr. Barac currently serves as the President of the Supervisory board of Platinum Invest, an Investment Funds Management Company. He also serves as a Supervisory board member of the ZSEM Business Academy and a member of the Supervisory board of Croatia Airlines. As an experienced coach and sports official he serves as the President of the Croatian Wushu Federation, a national sports organization that governs Croatian Wushu, which is the collective term for the martial art practices and sports which originated and developed in China. Also as a National Wushu team coach, he coached medal winning athletes in national and international competitions. Dr. Barac also served as a member of the Governing Council of the Croatian Agency for the Supervision of Pension Funds in the period between 2000 and 2005.

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Panelists

Irena Martinović Klarić, PhD

Irena Martinović Klarić holds a PhD is biology from University of Zagreb, MS in biomedical sciences form Northeastern University (Boston, USA) and BS in biology from Emmanuel College (Boston, USA). She was a recipient of the doctoral scholarship for the UNESCO/Human Genome program and Wenner-Gren post-doctoral fellowship. As a biological anthropologist specializing in human population biology, she published in a wide range of genetic and anthropological journals and worked in research projects supported by Ministry of Science and Education, Croatian Science Foundation, International organization for Migration, European Social Fund, Smithsonian Institution and Royal Society. Dr. Martinović Klarićhas taught courses in molecular anthropology and applied anthropology at University of Zagreb and since 2015she is the assistant professor at Croatian Catholic University where she teaches general anthropology. In 2017, dr. Martinović Klarić was appointed as a Program Committee Member in Horizon 2020 for health, demographic change and wellbeing. From beginning of January 2019, dr. Martinović Klarić is Executive Director of the Croatian Science Foundation.

Balázs Havelda, MA

Balázs Havelda is the CFO, and Deputy CEO of Diákhitel Központ Zrt. Following his Masters degree from Budapest Corvinus University he worked for Diákhitel Központ and Citibank. In2005 he joined Diákhitel Központ again and he has been working on managing the Hungarian student loan scheme in several positions with continously expending responsibilities for 15 years now. Currently he is responsible for treasury, controlling, BI, risk analyis, finance, accounting and procurements. He has two sons.

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Panel 4: Labor market ecosystem

Moderator
Mirna Koričan Lajtman, PhD

After leading several market analysis projects, Professor Koričan Lajtman joined the Zagreb School of Economics and Management in 2003, first as an Assistant, and then in 2007 as a lecturer. she earned her Master's degree in psychology in area of social psychology, and in 2009 she earned an MBA. She has spent extensive time on academic exchange at ZSEM'a partner universities, such as John Carroll University and St. Ambrose University, both in the United States, and at IESE in Spain, and has completed additional education in the areas of management, communication methods, corporate governance, and human resource management. She also completed a ten day General Management Program organized by Michigan University and the Zagreb School of Economics and Management.

From 2007, she has been the Coordinator for the Graduate MBA Program Management Specialization, and from 2009 she has served in the same capacity for the Human Resource Management MBA Specialization at ZSEM. Professor Koričan is a member of ZSEM's Assesment of Learning Team as part of ZSEM's AACSB accreditation drive. From October 2003 to 2007 she was the Head of ZSEM's Student Satisfaction and Professor Assesment Survey Project, which is conducted twice annually. She also heads the Corporate Governance and Corporate Social Responsibility Project which ZSEM conducts in cooperation with the East-West Management Institute, Hungary. At ZSEM, she teaches the Principles of Management, and Human Resource Management courses at the undergraduate level, and Principles of Management, and Human Resource Management Strategy at the graduate level.

She is currently also an active consultant on a European Union project from the IPA IV component; the component of human resource development.

She has authored numerous research and scientific works (CSR, Women and SME's, Decision Making Characteristics of Board Members in Croatian Banks, HRM Function and Strategy-The Croatian Perspective and others), and has been the editor od many books in the area of management (Modern Management, Negotiation, Becoming a Better Value Creator, Strategic Interviewing, Six Sigma, Strategic Management and others).

She has an active knowledge of the English language, and also can speak French and Spanish.

Panelists

Mike Rosenberg, PhD

Mike Rosenberg, PhD is a Professor of the Practice of Management in the Strategic Management Department of IESE Business School. He began teaching part time in the MBA and Global Executive programs in 1999 and joined the faculty on a full time basis in 2003. Professor Rosenberg lectures in IESE's MBA and Executive Education programs, where he teaches strategy, geo-politics, and sustainability and publishes a weekly blog on these topics under the title Doing Business on the Earth. His first book, titled Strategy and Sustainability (Palgrave Macmillan, 2015), is an exploration of the link between business and the environment and looks at the issue more from the perspective of business executives rather than that of environmentalists. The second book is titled Strategy and Geopolitics (Emerald, 2017) and is written to encourage business leaders to pay more attention to what is happening around the planet. Both books offer his own frameworks for looking at these two issues. From 2004-2009, Professor Rosenberg managed IESE's International Executive Education Unit. He was also the Academic Director for the Advanced Management Program in Media Entertainment and has co-edited Managing Media Businesses (Palgrave Macmillan, 2017), which is based on the course. Rosenberg is also the Academic Director for a Short Focused Program called Leading in a Matrix Organization at IESE's campus in New York City, as well as a for a number of Custom Programs for corporate clients of the school. Prior to join IESE Business School, Rosenberg was the Automotive Practice Leader of Heidrick & Struggles and prior to that he spent 15 years as a Management consultant in Europe, North America and Asia for A.T. Kearney and for Arthur D. Little, primarily in the automotive sector. Professor Rosenberg received his PhD. from Cranfield University, an MBA from IESE Business School, and a Bachelor of Science in Naval Architecture from the University of Michigan at Ann Arbor.

Vladimir Dujić, MBA

Vladimir Dujić, MBA is the head of the learning and development department at Infobip, which together with a global team of 12 people, from Bogota to Manila, is in charge of the global learning and development strategy. Vladimir graduated from RIT Croatia, as he believes in lifelong learning, in addition to continuous education in which he constantly participates, he completed the Master's Certificate in Career and Talent Management from CIPD in London, Cotrugli EMBA in Zagreb and is a certified NLP Coach. Also, the certifier is within the Selectia Employer Partner Certificate project. He gained experience in several industries (tourism, oil, banking and IT) in Croatia and abroad in various areas of human resources from attracting talent and employer branding, selection, talent and career management, employee engagement in managerial development. In practice, Vladimir likes to push the boundaries with projects and initiatives that are forerunners of trends in learning and development employees who have a lot of his (and his team's) projects in different companies have been rewarded by the profession. In private time she likes hanging out with friends, walks and games with her daughter, follow interesting and educational articles and posts on LinkedIn.

Boris Debić, M.Sc.

Boris Debić, M.Sc. Google's Chief History Officer emeritus, is a technologist who spent 15 years with the company from its earliest days and in the period of the most accelerated growth ($3B to $161B revenue/yr, 3500 to 210k workforce). He holds an M.Sc. in Physics from the University of Zagreb, Croatia. At Google he has worked in several roles: Release engineering, G+Privacy, Global Infrastructure, Data center site location, AI driven decision making, Ads serving and machine learning infrastructure, Developer Relations. He has worked with Google.org on analysis and exchange of global climate modeling data sets and agricultural data to provide food security forecasts, also in providing access to education to Syrian refugees in Jordan and across the Arab world. With support from NASA Ames directs Mars Society's NorCal Rover project. He is a board member of several high tech startup companies in both the US and Croatia including http://production.pro which was featured as a top three at Launch Fest in San Francisco. He teaches AI at the Zagreb School of Economics and Management. Prior to Google he held positions in: Silicon Valley startups, most notably E.piphany; the United Nations; the Croatian Ministry of Foreign Affairs and the University of Zagreb. Boris Debić has been a lecturer, invited keynote speaker, IEEE editor and organizer of Computer Science conferences.

Paul A Fadil, PhD

Paul Fadil, PhD is a Professor and Chair of the Department of Management in the Coggin College of Business. He holds a Ph.D. in Organizational Behavior and International Management from Florida State University, and an MBA with a focus on International Business from Florida International University. He has been at UNF since Fall 2004, teaching undergraduate and graduate courses in Organizational Behavior, International Management, Organizational Theory, Human Resource Management, and Administrative Management at both the graduate and undergraduate level. He has won 9 awards across five universities for outstanding teaching and instruction. He has also led over 21 study abroad trips in 11 years to Austria, Hungary, Scotland, Italy, Germany, Jamaica, The Czech Republic, and France. He has taught in Germany, France, Japan, South Africa, Hungary, Jamaica and many other countries. His research focuses on Cross-Cultural applications of Management and Behavioral theories, as well as domestic cultural diversity and social networking theory. He has over 35 articles published in various journals and has won 7 individual research awards and commendations. He has presented at over 100 conferences and keynoted several others. He has also worked with numerous corporations on leadership, motivation, and cross-cultural communication throughout the Jacksonville region. Dr. Fadil has been interviewed by the Florida Times Union and local television and radio outlets over 50 times on various Management topics.

He was also a specific contributor to the local NBC/ABC affiliate where he developed and delivered a weekly topic driven show called "Office Chat" that aired at 7pm every Thursday night on First Coast News. In his down time, Paul loves spending time at the beach with his wife Adrianne and their two beautiful daughters, Jillian and Francesca. He looks forward to many more fruitful years at the Coggin College of Business.

Panel 5: Higher Education in and after COVID – 19

Moderator
Karmela Aleksić – Maslać, MSc

After leading several market analysis projects, Professor Koričan Lajtman Karmela Aleksić-Maslać, MSc the senior lecturer, is the head of the ICT Department at Zagreb School of Economics and Management (ZSEM), head of freshmen and SUR (part-time students). She is co-managing ZSEM's MBA Program Management Information System and is a member of ZSEM's AACSB accreditation team. Master's degree gained at the Faculty of Electrical Engineering and Computing (FER) in Zagreb, where she is also writing her doctoral dissertation in e-learning system quality management. As a teaching assistant at FER, she was engaged in teaching and scientific research activities and has participated in the ten technology and IT projects financed by the Ministry of Science and Technology and Croatian Academic and Research Network (CARNet). She took a leading role in introducing the first projects of various kinds of e-learning in education in Croatia, such as videoconferencing, digital content, multimedia and LMS systems. Since 2002. is working as Head of the ICT Department at Zagreb School of Economics and Management. She developed a course syllabus, "Information and communications technology", "Management information systems", and "Enterprise Resource Planning Systems". She participated in the creation of the syllabus of all elective courses within the ICT Department. She played an essential role in the systematic introduction of e-learning in education at ZSEM and in the e-learning system quality management. She has published over 50 scientific papers in reviewed international conferences or journals. Also was the reviewer in several conferences and journals.

She is the founder and program chair of the ZSEM students conference Management Information Systems.

She is a member of Sloan Consortium, IEEE Education Society, International Network for Engineering Education & Research – INEER; EDEN-European Distance and E-Learning Network, IIIS – International Institute of Informatics and Systemics.

Panelists

Shab Hundal, PhD

Shab Hundal holds a D.Sc. in accounting from the Jyväskylä University, School of Business and Economics in Finland. He is having two master's degrees; M.Sc. Financial Management, Aberdeen Business School, Robert Gordon University, Aberdeen, U.K, and M.Sc. (Honours School) Economics, Punjab School of Economics, India. He also holds a Bachelor of Education (B.Ed.). Currently, Shab Hundal is working as a Senior Lecturer of Financial Management at JAMK University of Applied Sciences. Before it, he worked at the Ministry of Education, Singapore; Aberdeen City Council and Aberdeenshire Council (UK), Marks & Spencer (UK), and British Telecom (UK). Shab Hundal has published several scientific articles in the fields of corporate finance and corporate governance. The journals include Corporate Ownership & Control, International Journal of Business, Governance & Ethics, Eurasian Journal of Economics and Finance, Journal of Transnational Management, etc. Shab is on editorial boards of many journals. He is also a member of the Finance Finland Academy.

Hamadou Saliah-Hassane, PhD

Professor Saliah-Hassane earned a PhD in Electrical and Computer Engineering from McGill University in Montreal, a Bachelor and Master of Applied Science degree from École Polytechnique de Montréal, Canada. He is currently teaching Informatics and Computer Networks and Security at TELUQ University in Montreal where he is carrying research on Intelligent Distributed Systems and Mobile Robotics. Professor Saliah-Hassane is currently chairing the Working Group of the joint standardization activity on "Secure and Trusted Learning Systems" sponsored by IEEE Education Society, IEEE Industrial Electronics Society (IES) and IEEE Computer Society Learning Technology Standards Committee (CS/LTSC). Professor Saliah-Hassane has received many awards in recognition of his accomplishments, including the IEEE Education Society's 2020 Chapter Achievement Award, the EdWin C. Jones, Jr. Meritorious Service Award (2019). And aligned with his work on Distributed Embedded Systems, the IEEE Standards Association award with appreciation for chairing and contributing to the development of IEEE Standard 1876™ – 2019 on "Networked Smart Learning Objects for Online Laboratories" (2019), the IEEE SA 2019 Emerging Technology Awarded to IEEE SA 1876™ – 2019 Working Group and the "2005 Achievement Award" from the International Network for Engineering Education (iNEER) for "Research and Innovation on Online laboratories and for the Advancement of International Collaboration".

Professor Saliah-Hassane is a member several International Committees and Advisory Board including International Association on Online Engineering / Global Online Laboratory Consortium IAOE/GOLC (2009 –) and Yixue Squirel Education Group Learning Science and Technology Board (YixueLSTB) (2018).

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Abdelkrim Haqiq, PhD

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New Teaching and Assessment Methods

Session chair
Goran Oblaković

Project-based learning to foster critical thinking-new model grounded in psychology and philosophy

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Abstract

In this paper, the authors propose a model for teaching in a business school. The model is based on presumptions about human beings as curious, enjoying overcoming challenges, and having non-material needs. These presumptions are based on philosophy, Aristotle and Immanuel Kant, and psychology, Abraham Maslow, Frederic Herzberg, and Self-Determination Theory. The rationale for proposing such a model is the authors' challenges in teaching, relying heavily on cases. Instead of using case studies to develop critical and analytical thinking, the authors propose a project-like approach that addresses human needs and aims to develop critical thinking and problem-solving skills.

Keywords: *project-based teaching method, case study, critical thinking, Herzberg, Kant, Maslow*

1. Introduction

Since the beginning of the COVID-19 pandemic and lockdowns, higher education institutions have faced many challenges in their teaching-learning activities [1]. Individual faculty members responded differently to the challenging task of teaching online without the benefit of having a full classroom to facilitate discussions and learning. Luxembourg School of Business (LSB) is no different and has responded to the COVID-19 context with a mix of distance learning approaches. Current research shows that additional challenge of remote teaching includes problems such as the infrastructure, teachers' and students' experience on online teaching and learning, the change of working hours due to COVID-19 for some part-time students, and the inconvenience of working at home [2].

To maximize students' experience, many methods chosen by faculty members to teach online included case study analysis and discussion. A case study (also called a case, case method, or case study method) is usually a "description of an actual situation, commonly involving a decision, a challenge, an opportunity, a problem or an issue faced by a person or persons in an organization" [3]. LSB's *raison d 'être* is to provide an inspiring and multicultural learning environment for business leaders for companies operating in Luxembourg and across Europe and the world. Moreover, since one of the learning goals of all LSB's programs is that learners will have the capacity to think critically to solve complex business problems and make sound managerial decisions, emphasizing case studies to achieve that goal seemed like an optimal decision.

The case study method promotes critical thinking skills by offering direct data analysis that includes consideration of the outcomes [4]. Next to promotion of thinking and brainstorming, a case study method also creates a need to know and understand things, "enhancing the listening and cooperative learning skills of the students, building partnerships among learners and teachers encouraging attention to and self-consciousness toward assumptions and conceptions" [5]. It is a method of active learning that provides a variety of skills, and "active learning helps students develop problem solving, critical-reasoning, and analytical skills, all of which are valuable tools that prepare students to make better decisions and become better students and, ultimately, better employees" [6].

Unfortunately, in their respective courses, the authors faced many challenges and difficulties in teaching, relying heavily on cases. Later, we realized that we shared the same obstacles to capitalize on the case study methodology through discussion with our colleagues. We realized that, for example, in our classes, students: (1) did not read the case, (2) when discussing the case, students talked just for the sake of talking without realizing were they reaching a solution or not, and (3) in discussions students were very often opting for the most "mainstream" answers without really engaging in analyzing if the answers they were giving the most optimal for the problem.

Literature shows that teaching using case studies can bring beneficial outcomes; it can also cause some difficulties. Grupe and Jay [5] list major obstacles: embedded author biases, a narrow focus on a dilemma facing a single person or group, and limitations in scope a person creating a case or delivering a case might have. Another set of problems is related to time – good cases take time to prepare and requires that the faculty have good questioning skills developed [4]. Additionally, research shows that what hinders problem-solving learning is the emotional strain and difficulty in making own opinions known to the classroom (e.g., 7). The case study method might cause frustration among the less prepared students and those used to the more traditional teaching forms [8].

While admittedly, for many of the mentioned challenges, the blame is with instructors and how skillful they might be running sessions and students and their willingness to engage, still the fact is that in our specific situations, the learning experience could have been better. We felt that we need to try and do something to improve for the next cycle of teaching. In other words, we wanted to create a teaching model stemming from philosophy and grounded in psychology that we felt more comfortable using, and that should work in the LSB's context.

The overall rationale for this paper is an attempt to design a teaching and learning model that takes into account human needs as we see them and overcomes challenges that authors faced when using case studies. In this paper, we will: (1) Present authors' presumptions about learners, based on philosophy, psychology, corporate experience, and our experience as educators, (2) Describe our model and give examples, (3) Try to answer challenges regarding the model that we are aware of at the moment.

2. Our underlying presumptions about learners

We did not enter the discussion on how to try best to engage our learners without any preconceived views on human beings, their needs and interests, and how to incentivize them. The three primary presumptions that have guided our thinking are:

1. People have non-material needs,
2. People are generally curious,
3. People like to complete challenges.

Our presumptions are grounded in various sources across disciplines and personal experience. Philosophy and psychology dominantly influenced our thinking. Precisely, we have read Aristotle, Immanuel Kant, Abraham Maslow, Frederic Herzberg, and Self-Determination Theory. In the text below, we demonstrate how each of the mentioned authors influenced our thinking about humans.

One of the best-known statements about human beings stated by Aristotle can be found in the opening part of his *Metaphysics*. In this book, Aristotle remarks that all human beings have in their nature the desire to know. The text goes as follows:

> "ALL men by nature, desire to know. An indication of this is the delight we take in our senses; for even apart from their usefulness they are loved for themselves; and above all others the sense of sight. For not only with a view to action, but even when we are not going to do anything, we prefer sight to almost everything else. The reason is that this, most of all the senses, makes us know and brings to light many differences between things." [9]

When Aristotle talks about happiness, he states that: "If happiness is activity in accordance with excellence, it is reasonable that it should be in accordance with the highest excellence; and this will be that of the best thing in us." [10, 1177a12-14]. That best thing in human beings is the faculty of activity of intellect:

> "So if among excellent actions political and military actions are distinguished by nobility and greatness, and these are unleisurely and aim at an end and are not desirable for their own sake, but the activity of intellect, which is contemplative, seems both to be superior in worth and to aim at no end beyond itself, and to have its pleasure proper to itself (and this augments the activity), and the self-sufficiency, leisureliness, unweariedness (so far as this is possible for man), and all the other attributes ascribed to the blessed man are evidently those connected with this activity, it follows that this will be the complete happiness of man, if it be allowed a complete term of life (for none of the attributes of happiness is incomplete)." [10, 1177b15-26].

Based on Aristotle's lines quoted above, it does not seem farfetched to say that this goes in line with our presumptions that people are curious and that using our intellect is a need if we want to be happy.

Another philosopher who influenced us is a great German philosopher Immanuel Kant. When taking into account what Kant writes in *Religion within the Boundaries of Mere Reason* [11] and *Anthropology from a Pragmatic Point of View* [12], human beings can be viewed as having four natural predispositions. Those predispositions are

predisposition to animality, technical predisposition, pragmatic predisposition, and a moral predisposition [12]. In the development of all of the four predispositions, education is crucial. Wilson [12] summarizes it like this: "The talents and abilities of human beings are like germs that need to be developed out of them: 'It is for us to make these germs grow into humanity, by developing the natural predispositions in their due proportion, and to see that human beings reach their destiny.'"

Having this in mind would seem that not only people "desire to know," as Aristotle would put it, but they need to know to live their lives in a way that makes them not only potentially human but fully a human being. Another reason to be interested in education.

Abraham Maslow also influenced our ideas. The search for meaning for Maslow starts with the need for knowledge and then proceeds to the desire for understanding. Maslow explains the connection between the two like this:

> "Even after we know, we are impelled to know more and more minutely and microscopically on the one hand, and on the other, more and more extensively in the direction of a world philosophy, religion, etc. The facts that we acquire, if they are isolated or atomistic, inevitably get theorized about, and either analyzed or organized or both. This process has been phrased by some as the search for 'meaning.' We shall then postulate a desire to understand, to systematize, to organize, to analyze, to look for relations and meanings" [13].

Again, this idea of curiosity surfaces and supports the idea of creating a teaching model equipped with the ability to cater to it.

Similar insights are coming through in the ideas of another psychologist, Frederic Herzberg. When Herzberg [14, pg. 13] talks about myths, he mentions that they provide emotional support and cater to human beings' intellectual needs. Human beings' intellectual needs are such that humans must give a unified meaning to the data they are receiving. He proceeds to talk about them in this manner: "Man will disintegrate psychologically if he is unable to cope with the tremendous amount of information that he receives and if there is no possibility of giving the data some unified meaning." [14] Again this necessity to understand points out to the curiosity which is present in all of us.

The last source that inspired us in creating our teaching model is Self-Determination Theory (SDT). SDT is a theory of motivation [15]. In the context of this theory, self-determination means: "(…) a quality of human functioning that involves the experience of choice, in other words, the experience of an internal perceived locus of causality." [15, pg. 38].

The basic notion and understanding of human beings in the context of SDT is that human beings have a natural, innate tendencies towards the development of an "ever more elaborated and unified sense of self." [16, pg. 5]. Nevertheless, it is important to emphasize that the mentioned development will not be possible without also some other factors being present and fulfilled. The factors which support or thwart this innate human tendency is the social environment, which caters for integrated and vital human functioning. In their words: "Thus, in SDT the social context is viewed as playing a crucial role in supporting individuals' potentials versus stimulating their vulnerabilities." [17] For a social environment to do that, it needs to take care of three needs: competence, relatedness, and autonomy. These needs are the fundamental and innate requirements for deciding is the environment supportive or not for integrated and vital human functioning and development. [16, pg. 5-6] SDT's outlook on the human condition can be summarized as follows: "The fullest representations of humanity show people to be curious, vital, and self-motivated. At their best, they are agentic and inspired, striving to learn; extend themselves, master new skills; and apply talents responsibly. (…) Yet it is also clear that the human spirit can be diminished or crushed and that individuals sometimes reject growth and responsibility." [18]

Based on the scholars' insights mentioned above, we created a teaching model that, we believe, addresses the human need for curiosity and solving challenges and creates a learning atmosphere that supports innate human tendencies of autonomy, relatedness, and competence.

3. Bridging the gap between our presumptions and teaching practice

Today's learning approaches aim to provide students with relevant knowledge to successfully cope with their current and future professional challenges. It is assumed that there is a currently pertinent store of knowledge that needs to be transferred to the students. It does not matter whether the learning format is the classic lecture, learning in smaller groups, or analyzing business cases that have been popular for some time. In the final surveys of the imparted learning content, the aim is always to ensure that as many students have the same level of knowledge. There is nothing wrong with that.

In our experience, however, the learning success of every student depends on their motivation. Learners' motivation is influenced, among other things, by the extent to which the teacher manages to inspire the learners for the respective learning content. Based on a positive attitude towards the learning content, the learners develop a significantly higher engagement level in the learning process and ultimately achieve a better learning outcome. Why is that? We see a clear connection between the assumptions mentioned earlier that students are people with immaterial needs, who are generally curious and want to master the challenges presented to them successfully. Suppose the teacher manages to address the immaterial needs of the learners with the learning content. In that case, learners' curiosity will also positively influence the course of the individual learning process. Once this process of enjoying learning has been successfully initiated, the learners will (want to) successfully master both the actual learning process and the challenges that await in their professional life.

Behind this is the principle of positive self-influence: if I enjoy doing something, I will usually do it well. If I do something well, I'll be rewarded. If I am rewarded for something, it increases my motivation to do better, both for my benefit and for the benefit of my organization — a classic win-win situation.

Based on the above-mentioned importance of curiosity and the conquering of challenges for the individual, in our experience, the individualization of the learning content by encouraging critical thinking represents an essential contribution to students' self-motivation. It is about the individual interpretation of the knowledge imparted and the associated generation of individually meaningful knowledge. The inclusion of general knowledge, constructive critical questioning, and new knowledge derivation represents an enormous enrichment for the individual and, consequently, society. The digital transformation currently taking place creates many opportunities for knowledge access. However, we can see now, at the beginning of this process, that significant manipulations are possible when defining what is declared to be a relevant body of knowledge. If this trend continues, the intellectual mainstreaming initiated could reduce the learning process back to the pure transfer of knowledge.

It is a contradiction in terms: we have more information available. Nevertheless, there is a risk that we will lose our ability to critically question any data and thus deprive ourselves of the satisfaction of our needs for curiosity, challenges, and our formation of opinions and knowledge. Therefore, all educational establishments and teachers are urged not to let the ability to think critically become a lost art. Because of, or despite the digital transformation and the associated supposed flood of information, we must ensure that our students are provided with the relevant knowledge in a form that ensures that both the learning/knowledge goals and the individual human needs for curiosity, challenges, and, ultimately, self-actualization are satisfied. Nowadays, this often also means helping students become aware of their individual needs. The intensive and unreflective consumption of information and knowledge has already significantly reduced self-knowledge and self-realization.

Based on insights from practice, we have designed a model that should enable the teachers to prepare and convey relevant knowledge in a form that, based on constructive critical thinking, satisfies the students' individual human needs for self-realization and leads to better learning success. Also, there are incredibly positive personal experiences with the German school system of the 1970s / 80s, in which the development of constructive critical thinking among the learners was an important goal. One of the backgrounds for this objective was the historical experience from National Socialism, during which divergent ideas and opinions were draconically nipped in the bud. The "Defend against the beginnings" initiative by promoting constructive critical thinking became the leitmotif of an entire generation.

4. The model

We have decided to offer a learning model that considers the above-explained insights and our understanding of how vital curiosity and challenges are for human beings (Figure 1).
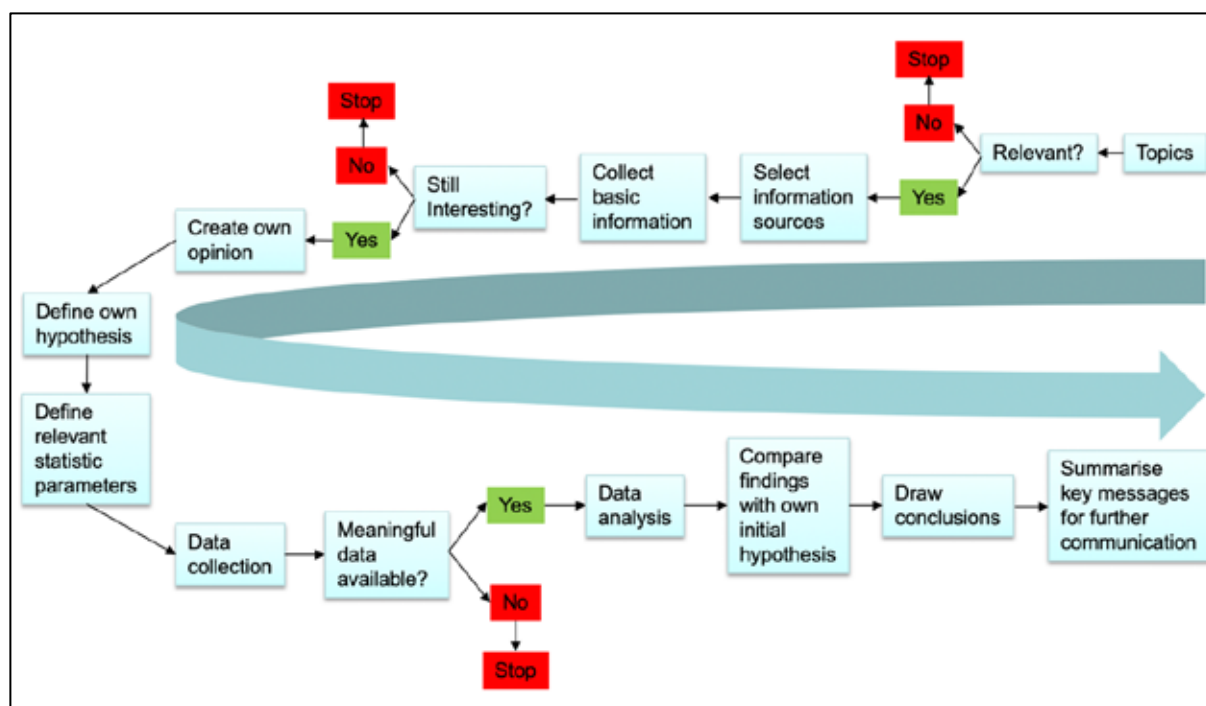
Figure 1. Project-based workflow for fostering constructive critical thinking

In an increasingly digitized and networked world, it is easy to gain access to a wide variety of topics. The continually increasing flood of information can even turn out to be problematic when the first step is to identify relevant learning content and suitable learning formats. Belongingness to the general store of knowledge, the attractiveness of the topic for the learners, and the potential for promoting constructive critical thinking can be used as orientation parameters. The assessment of the learning content's attractiveness for the learners nevertheless assumes that the teacher has dealt with his audience's preferences and has drawn the appropriate conclusions.

Once the topic's primary relevance has been considered, the next step is selecting suitable information sources to deepen the issue further. The teacher must be aware of the latent risk of preferring easily accessible information when obtaining information. However, the algorithms used in search engines contain an enormous potential for manipulation in forming opinions, as specific content is displayed with a higher priority.

Once the teacher has gained a more detailed insight into the topic, the question arises again whether the course content is still relevant or exciting. At this point, too, the criteria "belonging to the general knowledge to be conveyed," "attractiveness of the topic for the learners," and "potential to promote constructive critical thinking" can be used.

If the assessment is positive, the teacher must form his own opinion regarding the teaching content and learning format. The hypotheses derived from this must then be subjected to verification/falsification using statistical data collection. The prerequisite for this is the availability of relevant data. If this is the case, the next step is to analyze the data, compare the initial hypotheses with the analysis results, and work out the actual teaching content and learning formats.

The situation-specific preparation of the essential learning messages in terms of effective and efficient communication to the learners is of great importance. Here, it is less about the actual learning content than how the learning content is conveyed.

We believe that the workflow presented here can help teachers provide relevant learning content in a form that is attractive for learners, thereby motivating them to learn and teach them constructive critical thinking. Teachers can also use this process to train learners to think critically. Based on the essential learning messages that the teacher has defined after going through the entire process, it is the task of the learners to reflect on these messages for themselves by going through the same process. In a time of increasing mainstreaming, we see this as an essential contribution to ensuring diversity in opinions formation.

5. Instead of a conclusion - Challenges in front of us

The model presented in this paper is something that we still have to test in the classroom. Therefore, we are limited in what we can conclude at this point. We do, however, believe that the model does address learners' innate needs.

Specifically, the need for curiosity is being addressed in all stages of the model. In essence, the whole activity is centered around "finding out" more about the issues at hand. This is true no matter if we look at the model as something teachers might use to guide them in preparing for the class or looking at it from the learners' side where students are being trained to approach complex questions or problems and provide answers or opinions. On the other hand, the need for conquering challenges is also addressed so that, by using this model, learners are given a challenge. If they follow the model's steps, they should be able to form pertinent opinions and provide relevant answers.

We do, however, feel that we might encounter challenges in using this model. For example, how do we make the students curious about what we want them to learn and not about other things that might interest them? In other words, if we are correct that human beings are curious, that does not mean that they have to be curious about the things that we want them to learn in our classes. They could meet their innate need for curiosity in some other field. This would also, we believe, have a negative impact on their need to conquer challenges in the context that we want them to conquer challenges. Potential issue identified in the literature is the professor bias towards cases methodology and critical thinking as a learning goal. If the teachers are not inclined to use some sort of project-based, problem-based, or case study methodology, then our model could never work in their context. Finally, and probably the issue we are least likely to resolve, we feel that the general social context, our social surroundings, is not an ideal context for any critical-analytical discussion.

Nevertheless, by giving a challenge to learners and providing them with a method for approaching it, we believe that we have addressed the needs for curiosity and overcoming challenges that all learners have. By addressing those needs, we should register higher levels of learners' motivation and engagement, even when teaching remotely.

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Teamwork and peer feedback – lessons learned from Croatian and international students

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Abstract

Business today presupposes multicultural teams. Inter-team feedback helps to change behavior and improve team performance. The culture of giving feedback differs among countries, as does the implementation of peer assessment. If students from Croatia are not competitive as their colleagues from other countries and if there is a difference in how peer assessment is approached, that can present a challenge in contemporary multicultural work environments. One way to implement and assess teamwork is through a simulation where business school students compete to achieve the best market results. During the simulation, research using rubrics was conducted on a sample of 87 students in the MBA program. Out of the sample, 57 students were from Croatia while others were of a different nationality. In total, 273 marks were obtained for teamwork, where each team member assessed all other members in six categories: involvement, attitude, teamwork, input, quality, and punctuality. Results showed that there exists a statistically significant difference between Croatian and international students. Croatian students tend to grade their team members higher, meaning that Croatian students are less objective and tend to protect non-active members. Students that are more critical and give diverse and lower grades to their team members have better results on the written business report. The correlation between class attendance and participation with the students' average grade is positive and statistically significant. Female and male students do not differ in their assessment of their team members. As teamwork in multinational teams is one of the essential competencies in the labor market, it is vital to instill a more competitive spirit in Croatian students.

The Assurance of Learning Process in a new AACSB accredited Jesuit Brazilian Business School

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Abstract

This paper aims at presenting the process of implementing the Assurance of Learning for AACSB accreditation of the Unisinos Business School (University of Vale do Rio dos Sinos / Brazil). It focuses on the case study of the bachelor program of Business Administration: Innovation and Leadership to discuss the development of data collection, data analysis, the implementation of improvements and the evaluation of the implemented improvements in the program. The research points out assessment as an assumption for improvement, considering the student learning path as the target of the evaluation process. To get data, two tasks were conducted with two different groups of students. The tasks dealt with the Leadership Learning Goal planned in the range of goals set in the scope of the accreditation project. In the first task, fifteen students were assessed in a volleyball match. In the second one, thirty-four creating lemonade businesses. The results show that, in the first activity, almost half (48%) of the students exceeded the expectations designed for the task. Meanwhile, in the second one, most of the students (73%) exceeded them. The analysis of those results led to real improvements in the program curriculum.

Keywords: *AACSB Accreditation, Assurance of Learning Process, Unisinos Business School.*

1. Introduction

With two campuses located in the South of Brazil, one in São Leopoldo (headquarters) and another in Porto Alegre, the University of Vale do Rio dos Sinos (Unisinos University) was created by the Antonio Vieira Association (ASAV) on May 17, 1969. The Jesuits manage six higher education institutions in Brazil, including Unisinos, the others being: the Pontifical Catholic University of Rio de Janeiro (PUC-Rio); the Catholic University of Pernambuco (Unicap), in Recife; the Fundação Educacional Inaciana University Center (Unifei), in São Paulo; the Jesuit Faculty of Philosophy and Theology (FAJE), and the Dom Helder Câmara Higher School and School of Engineering (EMGE), in Belo Horizonte. They also administer 17 elementary schools and are responsible for many social programs in the country.

Unisinos is the biggest Brazilian Jesuit university, with 20,146 undergraduate students, 1327 graduate students and 1713 MSc and PhD students. The university's principal drivers are: (i) lifelong learning; (ii) trans-disciplinary practices; (iii) regional development; and (iv) the humanities and technology. Figure 1 presents some of Unisinos's numbers.

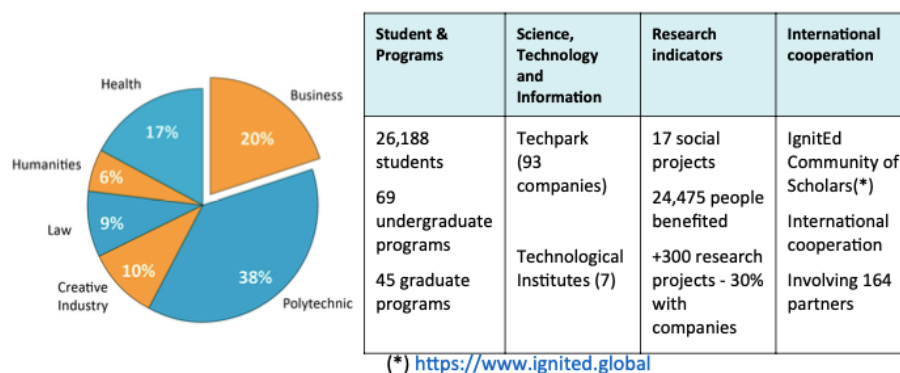| Student & Programs	Science, Technology and Information	Research indicators	International cooperation
26,188 students 69 undergraduate programs 45 graduate programs	Techpark (93 companies) Technological Institutes (7)	17 social projects 24,475 people benefited +300 research projects - 30% with companies	IgnitEd Community of Scholars(*) International cooperation Involving 164 partners

(*) https://www.ignited.global

Figure 1. Unisinos statistics at a glance [1]

Unisinos University has six schools: Business; Law; Humanities; Creative Industry: Communication, Design and Languages; Health; and the Polytechnic. Unisinos Business School integrates the business, economics and accounting areas at both the undergraduate and graduate levels. At the undergraduate level the school offers the following programs: BA in Business Administration; BA in Business Administration: Innovation and Leadership; BA in Business Administration: International Business; BA in Accounting, and BA in Economics. At the graduate level, there are four Masters programs: MSc in Administration; MSc in Accounting; MSc in Economics; and Master of Business Administration (MBA), and three doctoral programs: PhD in Administration, PhD in Accounting and PhD in Economics.

Accredited by AACSB in early 2020, Unisinos Business School signed up to the accreditation process in 2013 when it became a member of AACSB. In the first semester of the following year, it became eligible for accreditation and, in the second semester of that year, it received a first visit from its mentor. The accreditation process lasted until the second semester of 2019, when Unisinos University was visited by the Initial Accreditation Committee. Due to the recognition of the Assurance of Learning process by that visit, the Unisinos Business School was inspired to construct its own formal procedure for the Assurance of Learning. To do so, it was necessary to understand the whole process from scratch. Between 2014 and 2017, the Assurance of Learning process was designed with the help of heads of programs and faculty members. The first data were collected in the second half of 2017, and three semesters later the first loop was closed.

The aim of this paper is to discuss the implementation of the Assurance of Learning process at Unisinos Business School with regards to the stages of data collection, data analysis, implementation of improvements and evaluation of the implemented improvements. The analysis will focus on one of the Unisinos Business School's programs: BA in Business Administration: Innovation and Leadership. This paper comprises the following sections: Definitions of the Assurance of Learning Process, Methodology, Discussion and Recommendation.

2. Definitions of the Assurance of Learning Process

This section concisely defines the Assurance of Learning process relating to the stages of data collection, data analysis, implementation of improvements and evaluation of the implemented improvements. To align itself with the assessment perspective for improving student learning, this paper focuses on how student learning outcomes inspired curricular improvements related to the Leadership Learning Goal. This section, therefore, defines some essential theoretical concepts about Assurance of Learning Process for future analysis.

Over and above the description of each part of the process there are two political perspectives with regards to the process that it is important to highlight: one is the perspective of assessment for accountability, and the other is the assumption of assessment for improvement: "adopting either one of these two perspectives will decisively influence institutional choices about what and how to assess, how to organize assessment, and how to communicate assessment results" [2]. As Blaich and Wise [3] point out, there is an approach aligned with this second perspective that is oriented by the responsibility that administrators, faculty and staff embrace as teachers and professionals. Despite this viewpoint appearing occasionally in the debate about the purpose of assessment initiatives, the discussion in this paper is oriented by the perspective of assessment for improving student learning.

According to Palomba and Banta [4], "assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development". In the first edition of their book, Palomba and Banta established six strategies for managing the outcomes of assessments.

Table 1. Strategies for effectively assessing outcomes [4].

Agree on goals and objectives for learning
Design and implement a thoughtful approach to assessment planning
Involve individuals from on and off campus
Select or design and implement data collection approaches
Examine, share, and act on assessment findings
Regularly reexamine the assessment process

These strategies are deep-seated in Figure 2, which represents the whole Assurance of Learning process according to AACSB [5].
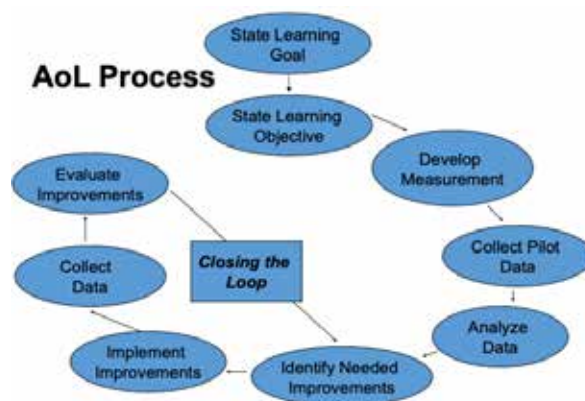
Figure 2. AoL Process [5].

First, "agree on goals and objectives for learning" (Table 1) – this is related to "state learning goal" and "state learning objective" (Figure 2) – means that each degree program guarantees that both general and specific knowledge and skills are learned [6]. More specifically, while learning goals reflect what the program wants the students to know and understand, learning objectives represent what the students are able to do. Second, "design and implement a thoughtful approach to assessment planning" (Table 1) – which is complemented by "develop measurement" (Figure 2) – consolidates the step in which each program maps out its curriculum in order to define direct and indirect measurement, which sets up the assessment planning process. According to Kopera-Frye, Mahaffy and Svare [7], "curriculum mapping is a versatile process tool that can help faculty discern whether different curriculum components align; and if not, what adjustments can be made".

Third, "select or design and implement data collection approaches" (Table 1) – whose purpose is the same as "collect pilot data" (Figure 2) – corresponds to the phase in the process when student learning data are collected. Because collecting data is "much easier than using the information to improve student learning" [8], it is quite easy to attribute more importance to this phase than to the following: "examine, share, and act on assessment findings" (Table 1) or "analyze data", "identify needed improvements" and "implement improvements" (Figure 2). Certainly, "if faculty do not participate in making sense of and interpreting assessment evidence, they are much more likely to focus solely on finding fault with the conclusions than on considering ways that the evidence might be related to their teaching" [9]. Finally, "regularly reexamine the assessment process" (Table 1) – this is divided into "collect data", "evaluate improvements" and "closing the loop" (Figure 2) – does not end the process; it actually restarts it.

Rather than just listing the steps of the process equally, in the second edition of their book, Palomba and Banta [10] consider assessment to be a continuum that comprises three phases: (i) planning, (ii) implementing, and (iii) improving and sustaining the process. Initially, the planning phase has five goals: engage the stakeholders in the process; establish purposes; build a thoughtful approach to assessment planning; produce a written plan; and time assessment. Then, in the implementation phase it is necessary to appoint a leader, choose or create data collection approaches, allocate resources, educate faculty and staff, assess resources, processes and outcomes, and share the findings. Finally, the improving and sustaining assessment phase leads to credible evidence being obtained, the use of assessment findings being protected and the assessment process being re-analyzed.

3. Methodology

As this paper aims at discussing the implementation of phases of the Assurance of Learning process in the BA in Business Administration: Innovation and Leadership of Unisinos Business School, this section sets up the analysis stages and the empirical context.

3.1 Stages of the analysis

Our analysis comprises an analysis of how phases of (i) data collection, (ii) data analysis, (iii) the implementation of improvements and (iv) the evaluation of the implemented improvements have been developed for the BA in Business Administration: Innovation and Leadership relating specifically to the Leadership Learning Goal.

The Leadership Learning Goal is one of the learning goals set in the scope of the process of Assurance of Learning related to the AACSB accreditattion of the Unisinos Business School. This learning goal is measured throughout the process of assessment, it means, the Assurance of Learning itself. The Leadership Learning Goal is the one related to the leadership competence planned for the program of this case study, focused on innovation and leadership. This learning goal is verified and assessed through the traits of (i) the objective, (ii) the strategic perspective, (iii) motivation and (iv) follow-up performed by students during the tasks carried out for the data collection.

Besides the Leadership Learning Goal, the program establishes another related one: the Teamwork Learning Goal. It is not covered in this study case and focused on other traits: (i) interpersonal competence, (ii) predisposition / proactive behavior and (iii) cooperation.

3.2 Empirical context

In this section we present the empirical context. Unisinos University's institutional guidelines from 2001 for the creation of innovative programs mark the beginning of the BA in Business Administration: Innovation and Leadership. Created in 2002 by a group of professors with multidisciplinary knowledge, the program had its first class on the São Leopoldo campus in 2003, and it was recognized by the Ministry of Education in 2005 when the program received its maximum grade. The curriculum was revised two years later, and the program received authorization from the Ministry of Education to be also offered on the Porto Alegre campus, where the first class was given in 2011. In 2019 the Ministry of Education gave the program its seal of excellence: this was the first undergraduate program in the entire history of the university to receive a mark of 4.96 (out of a total of 5.0) in the recognition renewal process.

The program's curriculum consists of Learning Programs (*PAs*), an innovative curriculum model whose organization is based on the relationship between knowledge from different areas. The learning process is, therefore, developed in network and embraces (besides the specific knowledge of professional training) other cognitive, sociocultural and emotional knowledge and skills that surpass the logic of cognitive-instrumental rationality. The characteristic profile of an alumnus is someone who works in an organization and promotes and drives change in a creative, competent and ethical manner, with an entrepreneurial and critical spirit; he/she has also been trained in a solidly theoretical, experience-based and humane way. More specifically, the purpose of the program is aligned with the development of professionals who are alert to changes in the market, to new (and sustainable) business possibilities and to the improved development of society as a whole. This profile is oriented towards a professional performance perspective that is linked to heterogeneous local and regional needs that are constantly changing. At the same time, it is expected that alumni will be able to work in other contexts and environments in which their management training is relevant, whether at a national or international level. The focus of the program is precisely on the development of broader, trans-disciplinary skills that do not limit the performance of the alumni to a specific sector of the economy or to a specific professional context.

4. Discussion

The aim of this section is to discuss the last four stages of the Assurance of Learning process (data collection, data analysis, the implementation of improvements and the evaluation of implemented improvements). Analysis of these phases in the BA in Business Administration: Innovation and Leadership ensures that the Assurance of Learning process is related to the assessment for learning paradigm in Unisinos Business School. Data related to student learning in this program lead to real improvements in the curriculum.

The data for the Leadership Learning Goal were directly measured and collected during a volleyball game involving students from the Leadership course, which is part of Learning Program 4. The students were divided into two groups, and their objectives were to organize their volleyball team, plan their strategy, play the game and keep the team motivated throughout the activity. The students were evaluated by the instructor on the following traits: (i) the objective, (ii) the strategic perspective, (iii) motivation and (iv) follow-up. The objectives of the team

activity for the students make the volleyball game appropriate assessment material for the Leadership Learning Goal: during this task team members are expected to carry out the activity in accordance with their own particular leadership traits.

This first data collection happened in the second semester of 2018 and fifteen students (out of a total of 79 of the program) were evaluated. The results were as follows: 48% of the students exceeded expectations, 48% of the students met expectations, and just 3% of the students did not meet expectations (Figure 3). The dimension in which students performed worst (13% of students did not meet expectations) was "The student provides his/her team with feedback". The dimensions in which students performed best (73% of the students exceeded expectations) were "The student establishes achievable expectations (goals and targets)" and "The student performs actions aimed at self-assessment". As the performance target establishes that 85% of the students must meet or exceed expectations and 15% of the students must exceed expectations, students in the first data collection exercise reached the performance target that had been established.
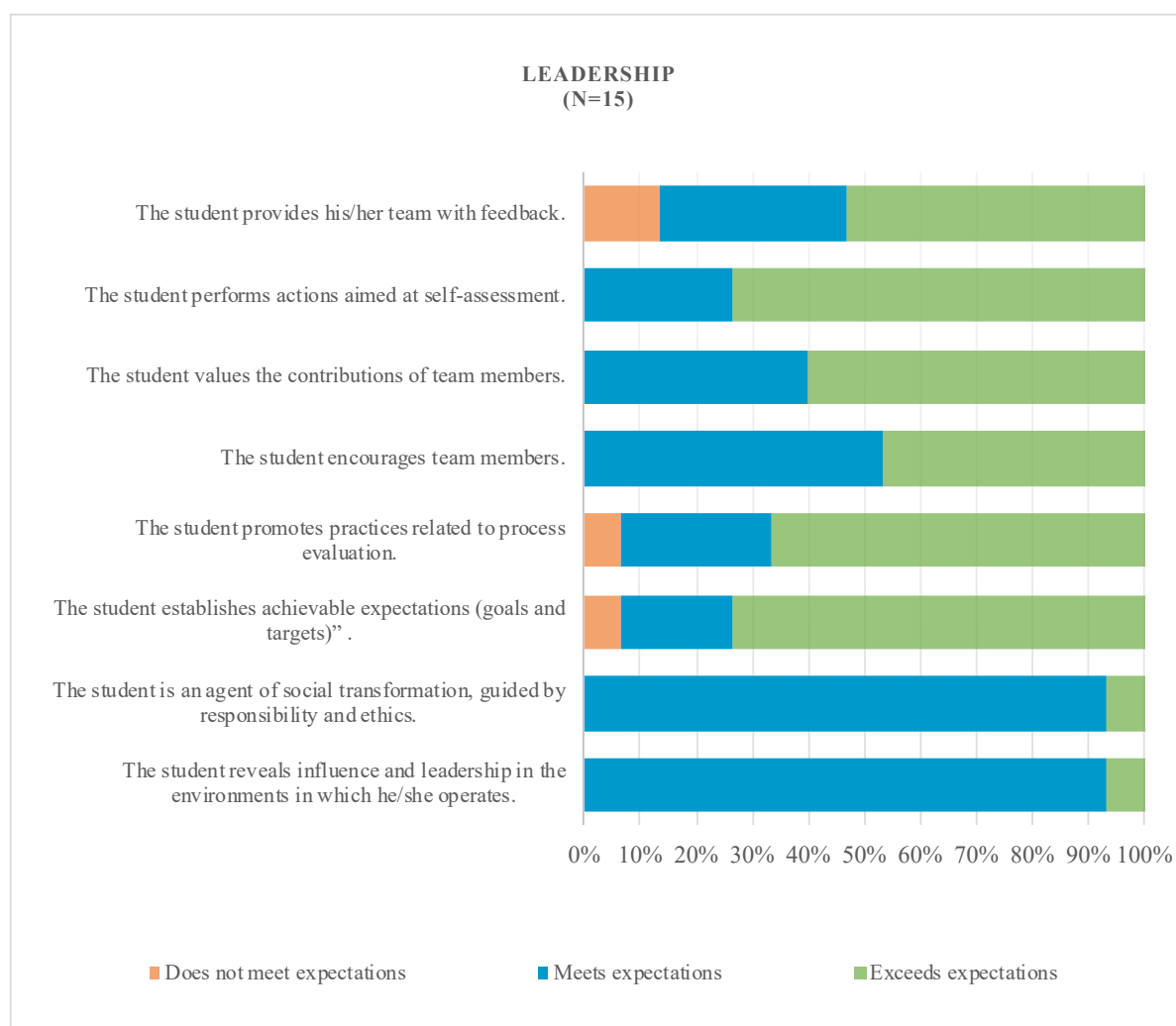

Figure 3. Results for the Leadership Learning Goal (Data Collection 1).

When analyzing data on student learning, despite the fact that some students reached the performance target, the two heads of the program, the core faculty members and the instructor of the Leadership course planned to organize activities to help the students further increase their skills related to the Leadership Learning Goal. These improvements were therefore implemented in the following semester of the Leadership course (Learning Program

4): (i) classes focused on leadership traits (purpose, strategic perspective, motivation and follow-up); (ii) market outreach activities, such as lectures involving external guests, technical visits to companies, directed case studies and discussions with leaders; (iii) the inclusion of leadership seminars, which were evaluative activities in which students researched and made presentations on class topics that linked theoretical content with practical experiences; and (iv) a reflective activity by students, the aim being for them to analyze, reflect on, assimilate and share class knowledge and experiences.

In the second data collection exercise, students were challenged to set up a lemonade business, during which they had to organize teams and produce, communicate and sell the product. Students were evaluated, as in the first data collection, on the following traits: (i) purpose, (ii) strategic perspective, (iii) motivation and (iv) follow-up. In this exercise, 34 students were evaluated (out of a total of 77 of the program) in the second semester of 2019. The results were as follows: 73% of students exceeded expectations, 21% of students met expectations, and 6% of students did not meet expectations (Figure 4). The dimension in which students performed worst (15% of students did not meet expectations) was "The student is an agent of social transformation, guided by responsibility and ethics". The dimension in which students performed best (100% of students exceeded expectations or met expectations) was "The student provides his/her team with feedback". With the same performance target (85% of students must meet or exceed expectations and 15% of students must exceed expectations), students also reached the performance target in the second data collection exercise.
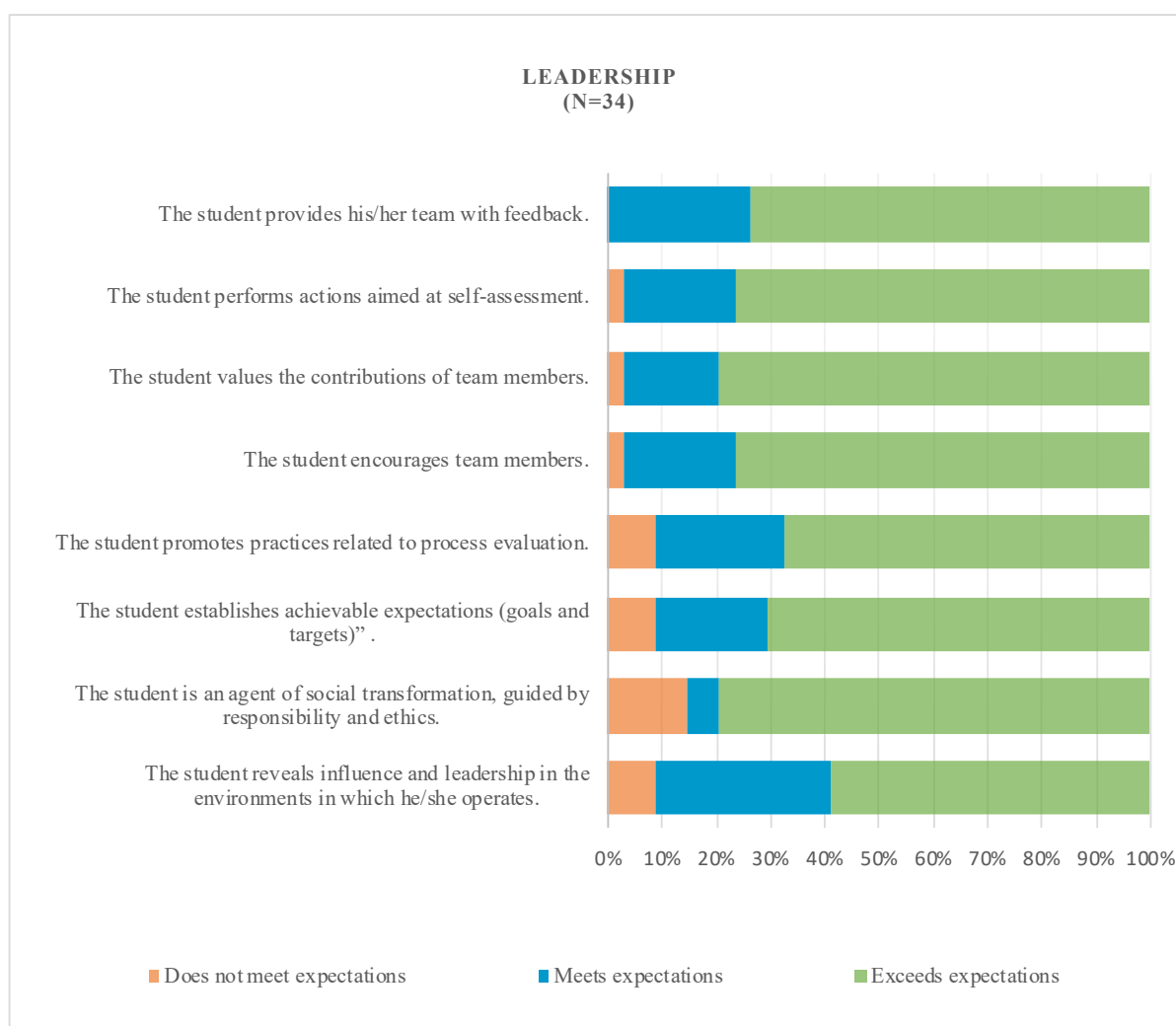

Figure 4. Results of the Leadership Learning Goal (Data Collection 2).

Analyzing the results of Table 3, 97% of the students met or exceeded expectations in the first exercise, while 94% of the students met or exceeded expectations in the second one, revealing little difference. However, focusing on the percentage of students who exceeded expectations, the increase is significant from the first to the second opportunity: whereas 48% of students exceeded expectations in the first exercise, 73% of them got the same result in the second one. The dimension in which students performed worst in the first exercise (13% of students did not meet expectations) was the dimension in which students performed best in the second exercise (100% of students exceeded expectations or met expectations), which is "The student provides his/her team with feedback". These findings can undoubtedly be explained by the valuable practice and useful activities that were organized and carried out between these two exercises.

One of the possible conclusions achieved from the analysis of these final phases of the Assurance of Learning process is that the BA in Business Administration: Innovation and Leadership program focuses on improving student learning. The actions planned by the heads of the program, the core faculty members and the instructor on the Leadership course were designed to improve student learning with regards to the Leadership Learning Goal by way of qualified and significant classroom activities. Despite the fact that it is easier to attribute more importance to data collection than to the next phases [3], researchers scrutinized the assessment findings with the purpose of identifying which curricular improvements were possible and, above all, desirable.

Table 3. Results of the Leadership Learning Goal (Data Collection 1 and Data Collection 2).

Traits	Dimensions	Data Collection | Outcome #1 (2018/2) N = 15 students				Data Collection | Outcome #2 (2019/2) N = 34 students			
		Does not meet expectations	Meets expectations	Exceeds expectations	D M E	Does not meet expectations	Meets expectations	Exceeds expectations	D M E
Purpose	The student reveals influence and leadership in the environments in which he/she operates.	0%	93%	7%		9%	32%	59%	
	The student is an agent of social transformation, guided by responsibility and ethics.	0%	93%	7%		15%	6%	79%	
Strategic perspective	The student establishes achievable expectations (goals and targets)".	7%	20%	73%		9%	21%	71%	
	The student promotes practices related to process evaluation.	7%	27%	67%		9%	24%	68%	
Motivation	The student encourages team members.	0%	53%	47%		3%	21%	76%	
	The student values the contributions of team members.	0%	40%	60%		3%	18%	79%	
Follow up	The student performs actions aimed at self-assessment.	0%	27%	73%		3%	21%	76%	
	The student provides his/her team with feedback.	13%	33%	53%		0%	26%	74%	
Learning goal average performance		**3%**	**48%**	**48%**		**6%**	**21%**	**73%**	

5. Recommendation

This paper focused on the case study of the Bachelor of Business Administration: Innovation and Leadership (one of the Unisinos Business School programs) with the aim of discussing (i) the data collection, (ii) the data analysis, (iii) the implementation of improvements and (iv) the evaluation of the implemented improvements, that are the final phases of the Assurance of Learning process. Information on student performance specifically related to the Leadership Learning Goal were collected through two exercises (a volleyball match and the creation of a lemonade

business) and it indicated that, since the first exercise, students have reached the performance target: 48% of students exceeded expectations. Even so, curricular improvements at the course level (within the Leadership course) were designed by the instructor of the Leadership course, the core faculty members and the two heads of the program, for example, classes focused on leadership traits, market dissemination activities, leadership seminars and reflective activities. Although these curricular improvements, which are of a pedagogical category, belong to the course level, not the program level, they can explain the fact that, in the second data collection, 73% of the students exceeded expectations. Thus, closing the loop, the analysis of the students' performance in the two data collections allows to say that the implemented improvements had an important role in the student's learning.

So, the most important contribution of this paper is that it provides evidence that it is possible to plan (and execute) better teaching activities for improving learning and resist to the "appeal of data". Three lessons stem from this process. First, activities designed to improve students' ability to learn lead to more efficient ways of analyzing the data collected and of proposing actions for improvement. Second, educational teams definitely work better together: the success of any process is facilitated by collective and collaborative reflection and decisions, undertaken by different faculty members in this case. Finally, it is important to understand further the potential of any process that produces indicators on student learning, especially in Brazil, which lacks research addressing this point. Over and above procedures related to the accreditation process, this paper prompts preliminary reflections on ways of assessing the learning process in our university.

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Perception of artificial intelligence in education – students vs professors

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Abstract

The education process has changed drastically with the rapid use of new technologies. New generations conceive learning at a different pace nowadays, meaning if learning has changed, so should professors adapt their traditional role to new teaching methods. Technologies, in the educational context, offer different approaches and styles of learning and teaching, such as e-learning, MOOC, gamification, etc. However, one of the biggest trends for any sector, especially for education, is artificial intelligence (AI). A survey was conducted among professors and students from different schools and universities in Croatia in order to grasp an overview of AI perception in education. The results show interesting discussions and insights in the ethical AI dilemmas in education.

Keywords: *Artificial intelligence, education, students, professors*

1. Introduction

The use of new technologies in education such as e-learning [1]-[3], MOOC [4], gamification [5]-[7] and artificial intelligence [8]-[10] has drastically changed the way of learning and teaching today. Technology offers great possibilities in improving the learning process, for example, using the EdTech platform such as McGraw Hill's ALEKS where lectures are personalized to each student in order to maximize students' potentials. Another good example is the „Duolingo Effectiveness Study" [11] research which states how 34-hour usage of the app is equivalent to the whole semester learning another language.

Artificial intelligence is a term that refers to any system that demonstrates the ability to cope independently in normal life situations [12]. Although the term has been used for over 70 years, the practical usage of AI has been developing in the last 20 years. According to Google Trends (Figure 1), AI was more searched on Google in 2004 than any year in the period of 2005 – 2017. Since the end of 2017, it seems that AI has grown significantly as the technology developed as well throughout the years. Other queries were added in order to see any correlation with touching fields such as machine learning, data science and deep learning. It is obvious that there is a correlation as all of fields were more searched in the period of 2017 – 2020, as was AI as well.

In the next part of this paper, research results of AI in education survey will be presented and discussed.
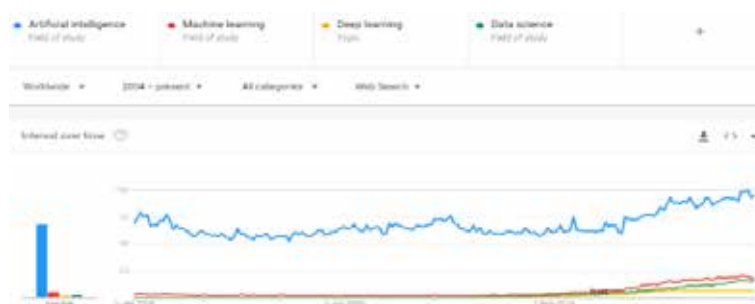

Figure 1. Google trends on AI, ML, DL and DS

2. Research

The aim of this research is to verify at what extent do students and professors use specific elements of AI in education and what is their perception of it – along with its ethic principles and possibilities in education. The research was conveyed by a survey for students and professors in Croatia.

In the survey for students, there were 304 students (45% women, 55% men) from 17 different schools and universities that participated. In the survey for professors, there were 33 participants (70% women, 30% men) from 8 different institutions.

The survey is consisted out of 18 questions, and this research will present and discuss a few of them.

2.1. Familiarity with AI

In the first part of the research, the aim is to test how much are participants familiar with the term of AI. The Likert scale was used from 1 to 5, under which 1 represents "I am not familiar with AI at all" and 5 "I am very familiar with the term AI".

Figure 2 shows that 40% of students have answered their familiarity of the term with a grade 3, 24% with 4 and 14% answered with a grade of 5. 22% of the participants have answered with a grade of 1 or 2, meaning they don't understand the AI entirely.

Further indicators were added, such as mean, which is 3.21, with median and mode which are graded with 3.
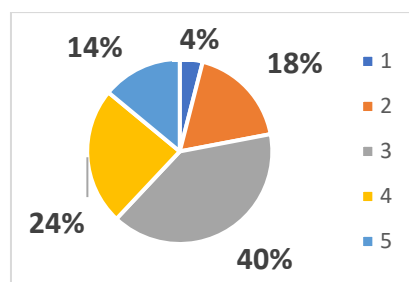

Figure 2. Participants familiarity with the term of AI (students)

As expected, all of the professors were familiar with the term of AI. The mean, median and mode are all 5.

2.2. AI contribution to the quality of education

This question, Figure 3, of the survey is exploring participants perception regarding AI contribution to the quality of education. 5% of students believe that there is no or at least only a small AI contribution to the education.

Average grade of students regarding this question is 3.8, with a median and mode of 4. It is interesting to see that the mean of this answer is bigger for 0.59 than the grade given in the familiarity question.

Although one part of the students is not familiar with the details of AI, they still believe it can help to improve the quality of education.
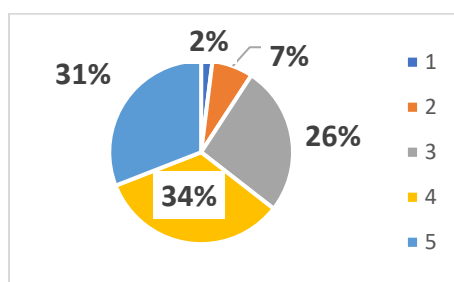

Figure 3. Contribution of AI to the quality of education (students)

All of the professors that participated in this research are aware that AI does bring quality to the education process and that it plays a big role now, and in the future (Figure 4). The mean is 4.9, meaning other indicators such as median and mode are the highest grade of 5.
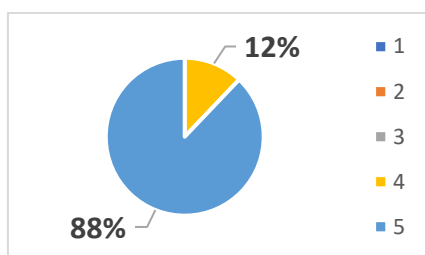

Figure 4. Contribution of AI to the quality of education (professors)

2.3. AI impact on student motivation in education

This question is involved with participants opinions on whether AI brings students motivation in the education process or it doesn't have an impact whatsoever. On the Likert scale, 9% of the student participants, answering with a grade of 1 or 2, don't believe that AI helps or impacts student motivation, while 34% of students gave a grade of 4 (Figure 5).

The mean of 3.8 shows that most of the students believe in AI and its contribution to motivation in education. Additional indicators, median and mode, are 4.
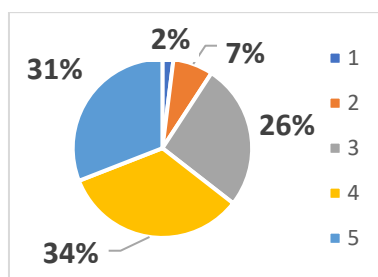

Figure 5. AI impact on motivation in education (students)

Although students' belief regarding this question varies, professors are confident that AI positively impacts student motivation in education (Figure 6). Mean is 4.95 with a median and mode of 5.
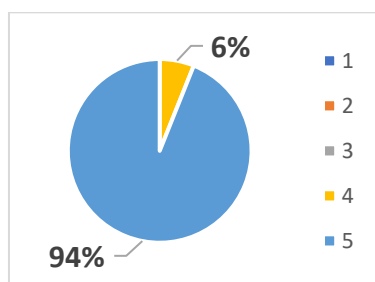

Figure 6. AI impact on motivation in education (professors)

2.4. Current state of AI development in education

The next question was formulated as "Do you agree that AI is still not developed enough to be successful?", where 1 is "I don't agree at all" and 5 (I agree completely). 30% of students gave a grade of 3, producing a mean of 3.7, with median and mode of 4 (Figure 7).
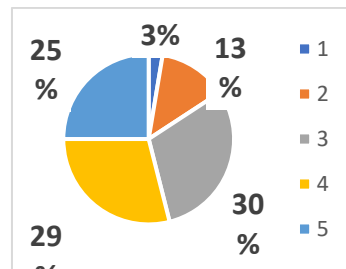
Figure 7. Current state of AI development (students)

Most of professors are aware of the great possibilities that AI offers, especially what it might offer in the future, so they are not satisfied with the current development (Figure 8). The average grade is 4.7, meaning that most of them believe that AI is still not on its highest level of performance in education.
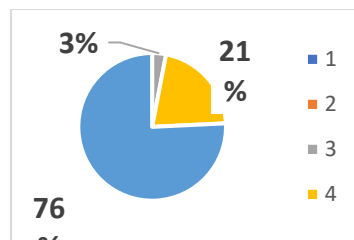
Figure 8. Current state of AI development (professors)

2.5. Can AI replace professors?

One of the most interesting question in the survey is: Can AI replace professors in education? Figure 9 shows that 28% of students believe that it is possible, however, the average grade is 2.4, with a median and mode 3. The mean is lower by a full point when relating to other students' answers, meaning that students still believe that professors are necessary in the education process.

Figure 9. Can AI replace professors in education (students)

Professors are very skeptical of this replacement, as their answers bring the average of 1.8 (Figure 10).

Figure 10. Can AI replace professors in education (professors)

Only 3% of students believe professors could be replaced by AI in the next 5 years, 13% believe it will happen in next 5-10 years, while 15% believe that it will happen in the next 10-20 years. 17% of students answered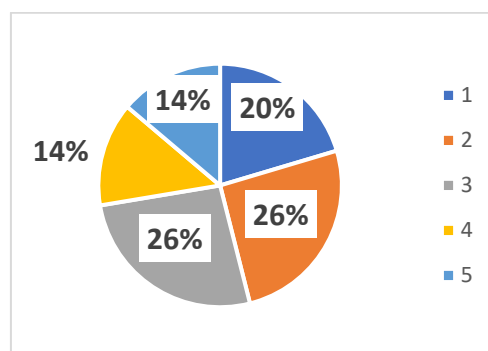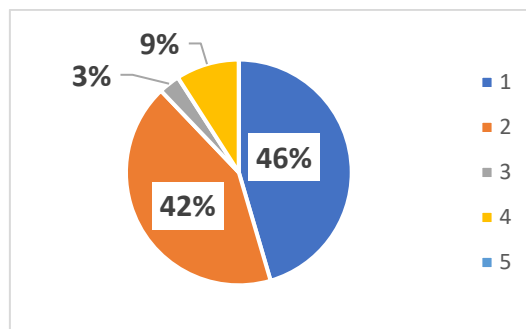 that it is still a lot of time needed before that happens (20-50 years). However, professors have a different perception regarding this answer. Only 12% of professors believe that they will eventually be replaced – 6% in period 10-20 years and 6% in period 20-50 years – the rest strongly believe that their skills in teaching are irreplaceable.

2.6. Usefulness of digital assistants for professors

Students believe that digital assistants should help professors in organizing and presenting lectures (Figure 11). The average grade is 3.9, while median and mode are 4.
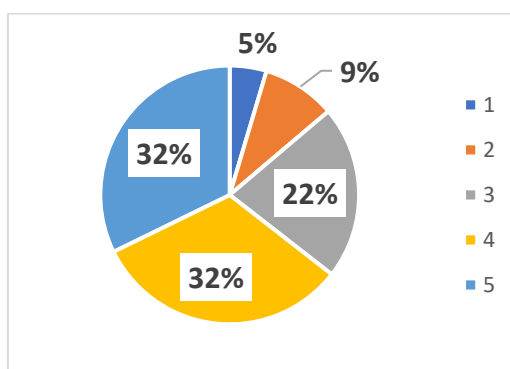

Figure 11. Usefulness of digital assistants for professors (students)

As professors are more aware of AI potential, 91% of professors would prefer to have a digital assistant in order to provide qualitative lectures to students (Figure 12). The average grade of professors is 4.7 with a median and mode of 5.
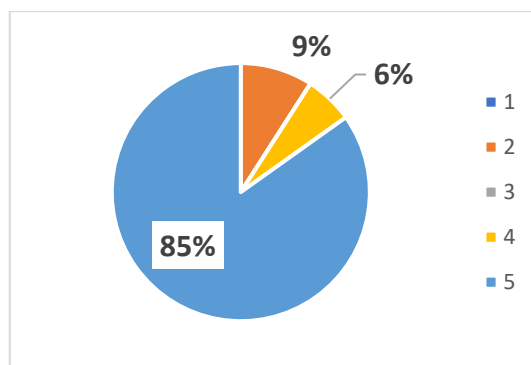

Figure 12. Usefulness of digital assistants for professors (professors)

2.7. AI application example – Japan case

Based on an example from a school in Japan – where students put a special gearset on their head which measures each student's activity and concentration in real time, participants are asked to express their opinion regarding that case and if they are willing to participate in that sort of experiment.

The scale for this question is from 1 to 3, where 1 means "I wouldn't participate", 2 "I don't know" and 3 "I would participate". Most of the student participants (49%) wouldn't participate in that kind of experiment, 32% that they are not sure if they would participate, while 19% of them would allow to measure their activity and concentration (Figure 13). The average of 1.7 shows that participants aren't too satisfied with this kind of experience (median and mode are 1).
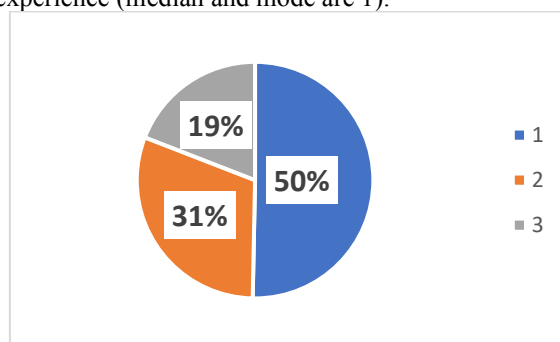
Figure 13. AI application example – Japan case (students)

Unlike students, 57% of professors would agree to this kind of experiment. The average is 2.2, while median and mode are 3 (scale 1-3). Professors believe it would greatly help them in bringing quality to the lectures because AI would suggest the development of the class and how well students are doing, enabling professors to adept their lectures appropriately Figure 14.
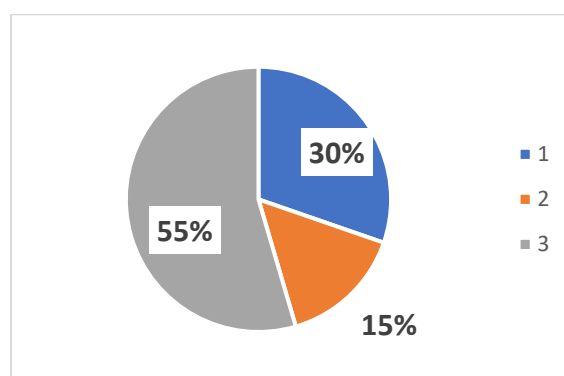
Figure 14. AI application example – Japan case (professors)

The participants were asked to grade (scale of 1-5) how much is the experiment ethical (1 is "Highly unethical" and 5 is "Completely ethical"). 55% of students gave a grade of 1 or 2, creating a mean of 2.5, a median of 2 and a mode of 1 (Figure 15).
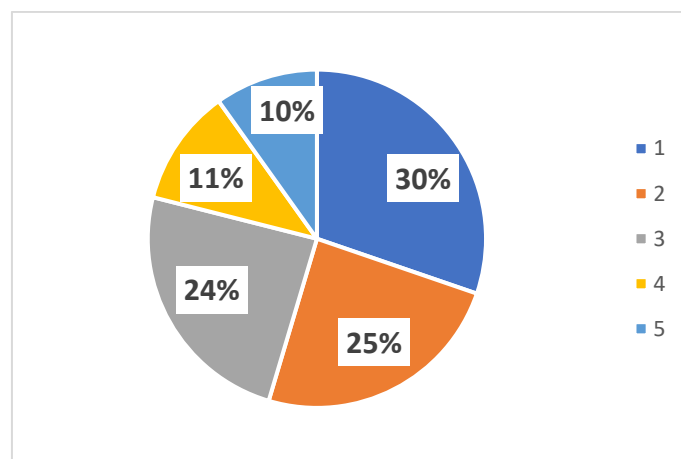
Figure 15. AI ethics – Japan case (students)

Professors also believe that the experiment isn't ethical, although as seen from previous answers, they would still like to use it. 76% of professors answered 1 or 2, while 24% of professors don't see any ethical problems (grades 4 or 5). The average is 2.2, with a median and mode of 2 (Figure 16).
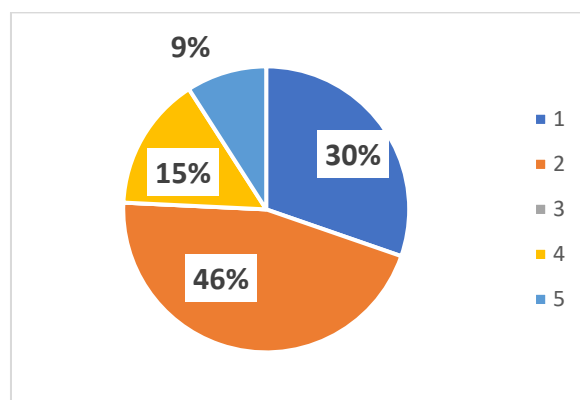
Figure 16. AI ethics – Japan case (professors)

3. Conclusion

This paper focuses on students and professors' perception regarding artificial intelligence in education. It is clear that artificial intelligence is the future of any sector, especially education. However, it was interesting to see how students and professors share some of the opinions and perspectives regarding impact, motivation, ethics, etc., but also, have different opinions on certain topics, such as Can AI replace professors?

Overall, the survey shows that professors have a better understanding and belief in AI than students, as long as it remains as a digital assistant, but not as a replacement. Also, professors and students are aware of the unethical experiment case from Japan, but professors are still interested in results of such an experiment.

Additionally, as this is only the beginning of AI in education research, further research is required. In the development of this topic, more practical examples of AI will be evaluated and discussed as there are many different tools, methods, generations, classes, etc. that can be used in order to assess and measure at what extent does AI support education processes.

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Changes and Challenges in Higher Education

Session chair
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Stress in Maritime Industry

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Abstract

Background: In a dynamic business and living environment, minor or major changes represent a challenge that companies and employees face almost every day. This can cause stress in the workplace and decrease overall productivity and job satisfaction. Using a systematic review, 109 studies on the stress and strain experienced by seafarers were identified for the period January 1990 to January 2012.
Subjects and methods: The goal of this research was to examine stress in the workplace and to determine the effect that stress has on employees' behaviour. An empirical research was carried out in a medium-sized maritime company using a questionnaire. The questionnaire, containing ten statement related to their workplace and work tasks, was distributed to all 273 employees by an online survey software. The respondents rated the statements from 1 to 5 (1 expressing a complete disagreement with the statement, and 5 a complete agreement with the statement).
Results: Based on the obtained results, the total arithmetic mean is greater than 2.5. The main hypothesis – employees are exposed to stress - and four auxiliary hypotheses were confirmed.
Conclusion: The result obtained from this research show the obtained results show that the majority of employees feel to be exposed to different sources of stress in their workplace – work tasks, colleagues, superiors, deadlines, etc. The next step would be to conduct research to determine what groups of employees are exposed to stress, to examine the stress levels and to analyse the key sources of stress.

Keywords: *Stress, Stress Management.*

1. Introduction

It is known that some of stressors in everyday professional communication come from work organization, career development, education, professional development requirements, interpersonal communication, lack of communication, conflicts with colleagues/co-workers/superiors, impossibility to use annual leave and fear of losing a job. The aim of this paper is to examine the examine the effects of stress in the workplace.

Research has shown that employees are exposed to more than a hundred stressors a day. The most common stressors at work, as commonly reported in the literature, are the feelings that employees are underpaid for their work, have too much work, not enough opportunities for promotion, job that is not challenging or does not require involvement, lack of support from colleagues or superiors, conflicting requirements, inability to influence important decisions in their work. Everything that takes place within a business company or an organization, and these include communication, interpersonal relationships, the ways in which work is done, delegated, and executed, and many other characteristics of organizational and social nature are potential sources of stress.

Using a systematic review, 109 studies on the stress and strain experienced by seafarers were identified for the period January 1990 to January 2012 [6]. The conducted literature review makes it clear that most maritime field studies have focused on fatigue and watch systems in the shipping industry - in each case as univariate parameters. Thus, scientific field studies with comprehensive multivariate stress and strain analyses on board are required. Only 13 of the identified maritime studies were conducted as field studies, and in 10 of these studies, the focus was on the watch system and/or on fatigue. According to the study results, sleepiness tends to be stronger in the 2-watch system than in the 3-watch system (particularly between 4:00 and 6:00 a.m.). Occasional

short sleep episodes appear to provide adequate recovery. Fatigue does not appear to depend on the seafarers' age and is often associated with poor sleep quality; noise and night shifts are also considered to contribute to fatigue. Stress among the seafarers was primarily recorded in sleep diaries (9 times) and with devices for measuring physical activity (4 times). As a rule, a questionnaire [5] was used to assess the strain on the crew on board; 7 studies also additionally recorded biometrical parameters. Only in 6 cases were several groups with different ranks on board investigated. [6].

2. Definition and Nature of Stress

The word *stress* comes from English language and can be explained as load, tension, pressure [1]. Although human body has a sort of built-in mechanism for protection against stress, in reality it is a very complex and still insufficiently researched area. There are many definitions of stress, but it can generally be described as a reflection of emotional and physical reactions that are accompanied by a subjective feeling of overload, which arise as a reaction to certain events [4]. Stress affects everyone. Stress is a response to an event or a situation.

A person's mental health is related to his or her ability to adapt, and to cope with changes and stress. Stress affects mind and body in direct and powerful ways. Stress consumes human energy and contributes to fatigue, negative thinking, and disturbing emotions, including anxiety, fear, frustration, anger, self-pity, and depression. Depending on the reactions it causes, it can be distinguished as: *physiological stress* (reaction of the organism to harmful stimuli), *sociological stress* (reaction of a social community or organization to pressures or stimuli to which it is exposed) and *psychological stress* (a harmful transaction between an individual and a certain property of the environment, which includes both stimulus and reaction; its occurrence is conditioned by a judgement of an individual, that determines whether a stimulus or situation will cause stress).

The existence of stress is concluded on the basis of indicators, which can be physiological, experiential (e.g. unpleasant feelings of fear, anger, helplessness) or behavioural (e.g. changes in the efficiency of problem solving) [2]. The way we communicate and implement decisions is crucial to employees' sense of safety and to levels of stress. Two people may experience an identical event, but one experience an extremely high level of stress and the other does not, accepting an identical situation, which may be exhausting and frustrating, but which may bring experience, knowledge, or some other positive outcome in the future.

3. Goal of the research

The goal of this research was to examine stress in the workplace and to determine the effect that stress has on employees' behaviour. An empirical research was carried out in the maritime company XY. Its basic activities are related to safety of navigation, i.e. maintenance of maritime waterways, implementation of aids to navigation, providing radio, etc. One main hypothesis and four auxiliary hypotheses were suggested.

Main hypothesis

H0 – If the arithmetic mean of the total sample is greater than 2.5 employees are exposed to stress

Auxiliary hypotheses

H1 - If the arithmetic mean is greater than 2.5 the statement No.1 "I have to quickly make important judgments and decisions" is true.

H2 - If the arithmetic mean is greater than 2.5 the statement No.3 "I think I am paid less than I deserve" is true.

H3 - If the arithmetic mean is greater than 2.5 the statement No.4 "No matter how hard I work and try, it has no effect in this system " is true.

H4 - If the arithmetic mean is greater than 2.5 the statement No.10 " I work better when I am pressured by deadlines " is true [5].

3.1. Research methodology

The research was conducted in XY, a maritime company based in Split, Croatia. The questionnaire [5] was distributed to all 273 employees by an online survey software. It included ten statements, which the respondents had to rate. The questionnaire was anonymous.

3.2. Sample

The research included several independent variables – age, sex, level of education and number years of employment. 32% of respondents were female and 68% male, more than 60% of employees ranged from 30 to 55 years, 49% finished secondary school, 36% had a bachelor's degree, master's degree, and a PhD, and the remaining 15% finished primary school. The majority of respondent are more than 10 years employed in the company.

3.3. Questionnaire

As previously mentioned, the questionnaire containing 10 statements[5] was distributed to all 273 employees of XY company by an online survey software in November 2018. The respondents rated the statements from 1 to 5 (1 expressing a complete disagreement with the statement, and 5 a complete agreement with the statement). The questionnaire was anonymous. The following statements were included in the questionnaire:

1. I have to make important assessments and decisions quickly.
2. No one consults me about problems occurring at work.
3. I think I get paid less than I actually deserve.
4. No matter how hard I work and try, it has no effect in this system.
5. I do not have a good communication with all my colleagues at work.
6. I do not have confidence in my superiors.
7. There is too much workload for me.
8. I have a feeling that others do not respect much what I do.
9. I get annoyed quickly and I react angrily.
10. I work better when I am pressured by deadlines.

The employees were given 30 days to fill in the questionnaire. Around 90% of employees took part in the research.

3.4. Results

The results were collected from the online survey software and were analysed using Microsoft Office Excel Software. The results obtained from the questionnaire can be seen in Table 1.

Number	Statement	Arithmetic mean
1	I have to make important judgments and decisions quickly	23.6
2	Nobody consults me on problems that occur at work	17.4
3	I think I am paid less than I deserve	25.8
4	No matter how diligently I work and try, in this system, it has no effect	22.2
5	The communication with my colleagues at work is not very good	15.2
6	I have no confidence in my superiors	16.8

7	My job load is too big for me	20.6
8	I have a feeling that others do not respect what I do	20.8
9	I get irritated quickly and I react sharply	15.6
10	I function better when I am pushed by deadlines	17.8

Table 1. The results obtained from the questionnaire.

After analysing the obtained results, the set hypotheses were discussed.

The main hypothesis H0 – If the arithmetic mean of the total sample is greater than 2.5 employees are exposed to stress - is confirmed. The overall arithmetic mean was 20.5

The auxiliary hypothesis H1 - If the arithmetic mean is greater than 2.5 the statement No.1 "I have to quickly make important judgments and decisions" is confirmed. The arithmetic mean is 23.6

The auxiliary hypothesis H2 - If the arithmetic mean is greater than 2.5 the statement No.3 "I think I am paid less than I deserve" is confirmed. The arithmetic mean is 25.8

The auxiliary hypothesis H3 - If the arithmetic mean is greater than 2.5 the statement No.4 "No matter how hard I work and try, it has no effect in this system " is confirmed. The arithmetic mean is 22.2

The auxiliary hypothesis H4 - If the arithmetic mean is greater than 2.5 the statement No.10 " I work better when I am pressured by deadlines " is confirmed. The arithmetic mean is 17.8

Based on the obtained results, the total arithmetic mean is greater than 2.5. It is particularly evident in the statement number 3 that employees are poorly paid for the work they perform (arithmetic mean 25.8). The recession has affected the entire society, so employees are afraid that this will affect their income as well. They also agree with the assumption that they function better under the pressure of deadlines (the arithmetic mean is 17.8), which means that the existing dynamics of work obligations, designed for a longer period of time, is relatively acceptable for employees. Stress is also present in the fact that employees are required to quickly make important judgments and decisions, and are not adequately paid, i.e. according to the results, the employees feel that they are not paid as much as they deserve, which is a prerequisite for a successful implementation of new tasks and directly affects the employees, their future and the future of the company.

5. Conclusion

Stress is a response to an event or a situation. It is a part of the normal process of adapting to the environment and consists of adaptive behaviour (coping). This is usually considered to be a result of a connection
with the environment that an individual assesses as significant to one's well-being. Work-related stress, fatigue, depression, and anxiety also account for a large percentage of workplace health issues. Uneven workload patterns, toxic cultures, infrequent breaks, and many other factors can contribute to stress and discomfort [7]. Exposure of employees to stress of physical, social, or environmental nature for a long time can make it difficult for a person to cope with it. Both employers and employees have roles to play in maintaining a safe working environment.

The goal of this research was to examine stress in the workplace and to determine the effect that stress has on employees' behaviour. An empirical research was carried out and the obtained results show that the majority of employees feel to be exposed to different sources of stress in their workplace – work tasks, colleagues, superiors, deadlines, etc. The company needs to conclude that stress is a problem, and decide how to take certain steps to resolve the issue. The next step would be to conduct research to determine what groups of employees are exposed to stress, to examine the stress levels and to analyse the key sources of stress.

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The Emergence of sustainable consumption in an overconsumption society

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Abstract

The consumption has increased every year since the middle of the 70's and the annual volume of consumption per person is currently four times bigger than in 1960. It has led to the creation of an overconsumption society. People consume way more than what they need, to follow trends, to feel part of a social group, or to fulfil non-rational needs. The over consumption behaviours have impacted our planet in many ways. The last two decades have been characterized, to a certain extent, by the raise of powerful upswing of ecological and social considerations, and especially in the consumption area. Hence, the principle of sustainable consumption has emerged and progressed. However, many consumers are not fully aware of their ecological impact linked to their consumption. Even if the notion of sustainability is more and more present in customers daily life, it still has lot of progress to be done. The population of industrialized countries must adopt their consumption habits to face new social injustices and environmental threats. This paper deals with the ways people are consuming and two opposite trends: the sustainable consumption and the overconsumption. It has been analysed the relationship between sustainable development and consumption, how it can lead to a sustainable consumption, and if sustainable consumption can compete with our current overconsumption society in order to know.to what extent sustainable consumption is emphasised in consumers' choices and mindset today, instead of keeping overconsuming.

Keywords: _Consumption, Overconsumption, Sustainable development, Sustainable consumption, Consumers_

1. Introduction

The aim of this thesis was to determine to what extent the sustainable development is becoming a major concern in our consumption, which is nowadays way more than needed. Indeed, our actual society is qualified as an overconsumption society and many experts have warned that it has lot of negative effects, notably on the environment. In other words, the goal was to see how we – as customers, are sensitive to this new trend of consumption, the sustainable consumption, which appear at first glance to be the complete opposite of our current way of over-consuming. However, even if the consumption is universal and has always been part of humanity, the questions studied in this work where: When do the notion of consumption society has emerged? What are the factors that has led us to an over-consumption society? In what way are we overconsuming?

On the other hand, the sustainable development is a topic well discussed since the 70's. It has known over the past decades a significant evolution with how we define it, how countries integrate it and how people view it. The most popular definition about sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987). To achieve this, the United Nations has established a list of 17 sustainable development goals to transform the world in 2015. The consumption is obviously concerned by this relatively new topic, and that is why the 12th goal is about having a sustainable consumption and production. Another significant measure implemented by the United Nations Conference on Sustainable Development in Rio (2012) is the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (hereafter the 10YFP). As we are currently in 2020, the 10YRF should end in two years, and we must be able to see already some of its effects, which are discussed in this paper.

Authors have also searched in which context and which reasons have led the sustainable consumption to raise awareness and consideration? How adopting a sustainable consumption could be better for our actual economy and lifestyle? Is it possible for consumers to change their habits in order to preserve the hearth and its inhabitants? Are consumers willing to change radically their habits and modify their ways of living?

2. Theoretical review of the concept of consumption, consumers and sustainable development

The consumption evolution is not linear and did not just change by the increasing number of purchases. Obviously, people living in the 21st century do consume much more than their counterpart from 19th century. But they also consume new things and in very different ways. It can be explained by the upgrading of the living standards, technical progress or the extension of market production places over countries (Daumas, 2018). Few researchers also claim that the consumption has increased due to a bigger demand which was linked with the evolution of consumption structures, in the process of western countries' industrialization. After the Second World War, France and other western industrialized countries has known a period called the "30 glorious". This represents a time period of about 30 years with plentiful prosperity. According to authors, it is also the point from when the society of consumption has begun (Herpin & Verger, 2008). Indeed, the consumption has never stopped to increase since this period, both in volume and in value.

Different reasons can explain why the consumers started to increase significantly their consumption. First of all, they gained free time, thanks to the positive modifications of labour rights. The salaries were also revised upward, and lifestyles also kept changing with even more women's work and urbanization (Bournay & Pionnier, 2007). Mid 1990s, the third industrial revolution started with a new communication system, internet. (Brown, 2015). At the same time, new technologies arose such as electronics, telecommunications and computers. For the philosopher Jean Baudrillard (1998), the consumption is a major feature of western societies, indeed he states that their whole cultural system is based on consuming. He claims that the consumption is not a matter of satisfying a need anymore, it is a matter of differentiation. According to M.-E.Chessel (2012), the terms "consumption" and "society of consumption" are often used for the same meaning.

Consumers are key players of the society of consumption. Indeed, there are the ones who spend their money into goods or services offered by companies. That is why it is essential for the firms to have a good knowledge of their consumers in order to maximize their profits and contribute to this society of consumption.
Obviously, the consumers' profiles are different from a company to another and their needs and expectations are evolving over the years. However, we can still observe some similarities (Brée, 2017). It has been proven that several economic factors have a direct impact on the consumption. First of all, the household's consumption is not the same depending on the price of the good or service. A second economic factor which plays in favour of consumption is the ease of getting a credit. Thirdly, the innovation impacts also the consumption. The novelty and higher performance of a good or service are factors which attract consumers (Sampognaro, Antoinin & Plane, 2017).

Indeed, the consumption can be used as a tool to show from which social environment someone is from. Nowadays, industrialised countries, such as France, are over-consuming. This is possible because the production can follow this high demand, thanks to all the progress made these last decades. Overconsumption is a phenomeon that corresponds to an extreme consumption, it is all about acquiring new goods and services all the time in an excessive way. It shapes consumer's life and the dynamics of social organization. One of the effects is that it creates huge ecological degradation (Schulz, 2017).

The sustainable development must also be applied at the company level. It concerns the company environment in its entirety: the internal and external actors, the economic partners, etc. Indeed, all actions taken and implemented by a company have a direct or indirect influence on what surrounds it. Stakeholders (such as employees, shareholders, consumers, partners) must assume their roles in terms of social responsibility.
Sustainable consumption is characterized by the need to adopt consumption habits to ensure both sustainable economic development and environmental protection for the benefit of present and future generations.
This definition emphasises the fact that it is possible to meet individual needs as well the collective ones by doing sustainable consumption (Brundtland & Ofstad, 1994). Schaefer and Crane (2005) underline that the definition must include a cultural and social facet of consumption to be accurate. According to Marchand, De Coninck, and Walker (2005), sustainable consumption can also be explained by consumers' sense of citizenship. For them, consuming responsibly means having local and global impacts on the environment. The responsible consumer is therefore a committed citizen for the rest of the world. He is a citizen of the world who thinks about the collective well-being of his planet.

3. Research Methodology and results

After secondary resaerch, primary research has been conducted using a questionnaire as a part of quantitative research method in order to veryfy following hypotheses :
Hypothesis 1
The hyper-consumption trend is in decline.
Hypothesis 2
Consumers know what sustainability is and are sensitive to it.

Hypothesis 3
Consumers know what sustainability consumption is and are sensitive to it.
Hypothesis 4
Consumers tend to a sustainable consumption rather than an over consumption.

As the people targeted where frenchs, the questionnaire was only carried out with questions/answers in French. This allows maximum comprehension and avoids creating a bias if people do not speak or understand English well.

Table 1: The sum-up of the participants' age.

Age	total (value)	total (percentage)	cumulative
18-24	70	43,2%	43,2%
25-30	48	29,6%	72,8%
31-35	0	0,0%	72,8%
36-45	4	2,5%	75,3%
46-55	28	17,3%	92,6%
56-67	10	6,2%	98,8%
68 and more	2	1,2%	100,0%

Table 2: The sum-up of the participants' status.

Status	total (value)	total (percentage)	cumulative
Student	30	18,5%	18,5%
Employee	98	60,5%	79,0%
Liberal profession	12	7,4%	86,4%
Unemployed	14	8,6%	95,1%
Retired	8	4,9%	100,0%

Table 3: The sum-up of the participants' income.

Monthly income	total (value)	total (percentage)	cumulative
Less than 1000 €	32	19,8%	19,8%
1000 € - 2000 €	72	44,4%	64,2%
2000 € - 3500 €	44	27,2%	91,4%
more than 3500 €	14	8,6%	100,0%

Graph 1: Ranking of the annual budget devoted to each category of consumption *(1 the lowest / 5 the biggest)*
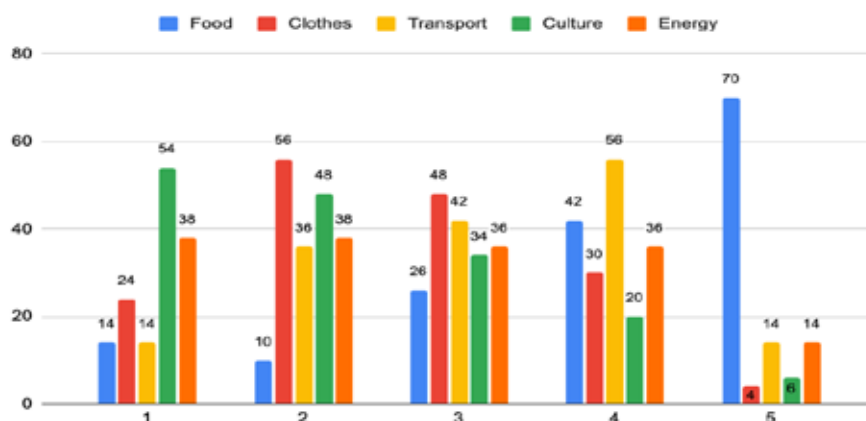
Graph 2: Current consumption compared to the French average
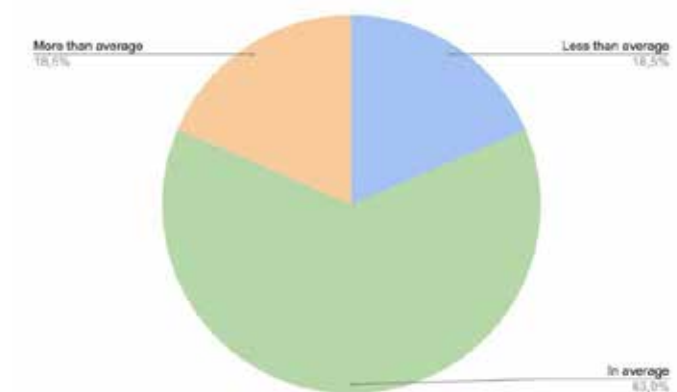
Graph 3: Evolution of consumption over the last 5 years

Table 4: The desire for a change in consumption

	Answers	Answers (%)
Yes, perfectly	52	32,1%
No, I would like to be able to consume more	22	13,6%
No, I would like to consume less	88	54,3%

Graph 4: Means of communicating sustainable development today

Where do you hear most about sustainable development today?
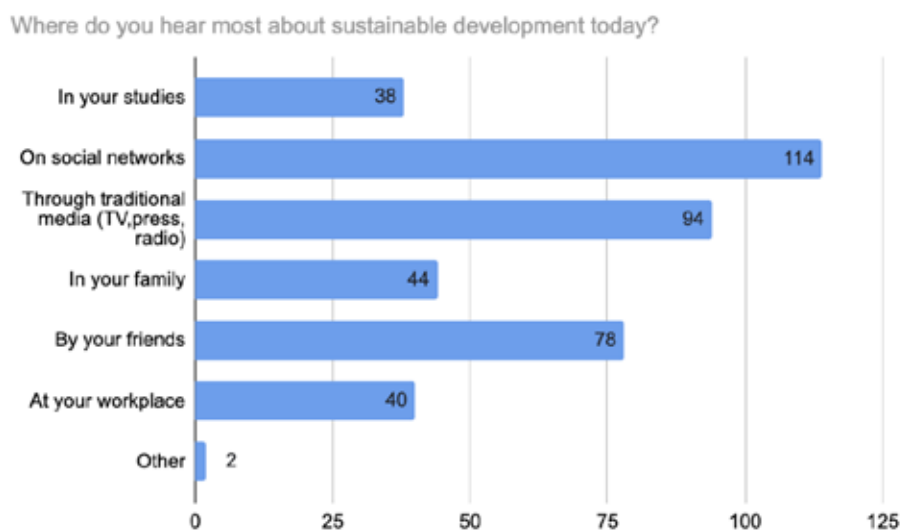
Graph 5: Actors with the greatest impact on sustainable development issues
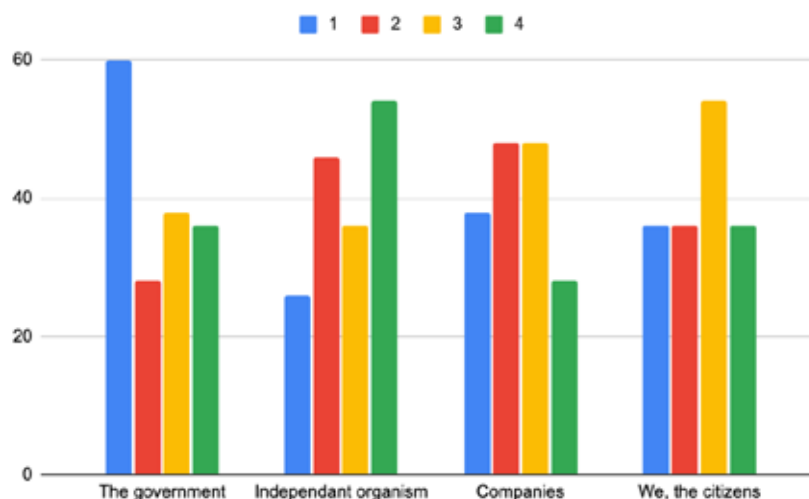
Graph 6: The position of French consumers with regards to environmental issues, depending on where they live.
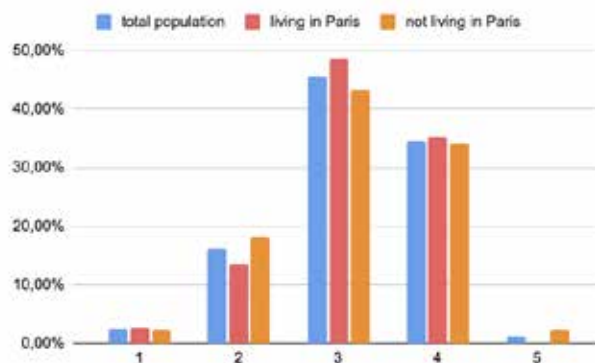
Graph 7: Percentage of sustainable consumption out of total consumption
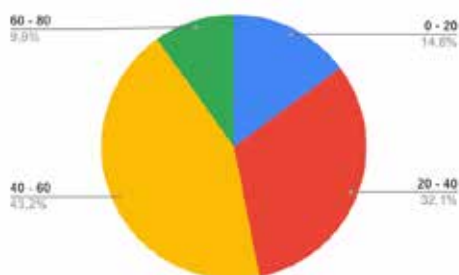
Table 6: Percentage of sustainable consumption out of total consumption, by gender

% sustainable consumption	MEN	WOMEN
0 - 20	30,4%	8,62%
20 - 40	26,1%	34,48%
40 - 60	30,4%	48,28%
60 - 80	13,0%	8,62%
80 - 100	0,0%	0,00%

Graph 8: Sectors in which efforts are being made to consume sustainably
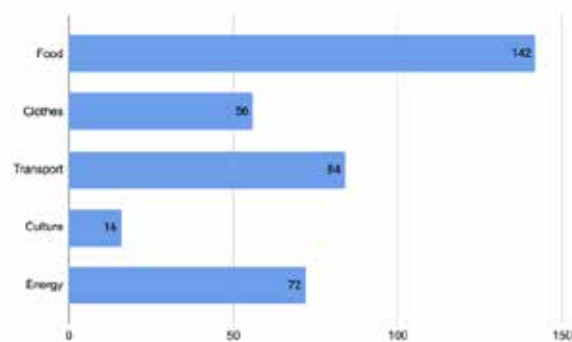
Graph 9: The desire to improve its consumption and make it more sustainable.
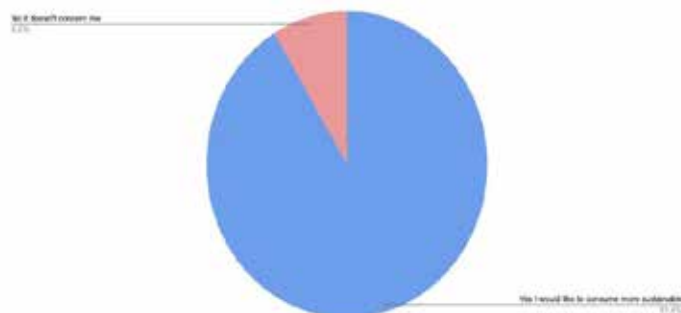
Graph 10: the barriers to sustainable consumption

Conclusion

The aim of this paper was to study two opposing current phenomena: over-consumption and sustainable consumption. More precisely, the authors wanted to see how sustainable consumption emerges in today's overconsumption society. Thanks to detailed literature review, the authors has been able to put forward four main hypotheses that have emerged from this research. These hypotheses have been tested in primary research using questionnaire (N=162) on French consumers. The research focused on French trends, one of the author's native country. The H1 mentions the fact that the trend of over-consumption is declining. This hypothesis is partially confirmed because people do want to change but it is not yet well implemented. The H2 refers to the fact that French consumers are aware of and sensitive to sustainable development. The first part of the hypothesis is fully confirmed, the panel has a good knowledge of sustainable development. The part concerning sensitivity is half confirmed, because they visualize the importance of this notion but do not feel that they are necessarily decisive actors. The analysis carried out in relation to H3 has made it possible to draw up an inventory 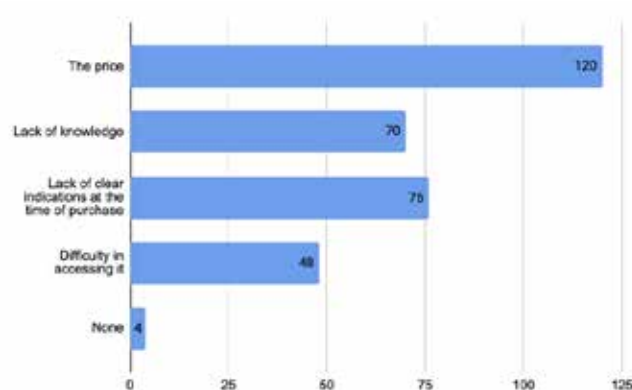of the current state of sustainable consumption. While H4 looks at the future wishes and desires of French consumers. Both hypotheses are confirmed, but it is important to balance them in the validation. Indeed, the majority of the panel is in line with these two hypotheses, but a small part that cannot be ignored is neither sensitive to sustainable consumption, nor prefers to tend towards sustainable consumption rather than over-consumption. It is possible to conclude that there is in France indeed a strong emergence of sustainable consumption and that people are interested in it and are beginning to practise it.

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How to teach the craft of qualitative research methods: Lessons from the digital transformation due to Covid-19

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Abstract

This paper discusses the need for practical hands-on experiences for students to develop their understanding of, and skills in, qualitative research methods, and reflects on lessons learned from the digital transformation due to Covid-19. With a focus on an undergraduate course on research methods for business students the paper reports from and reflects on the development of workshops in qualitative interviewing and analysis for students to practice these skills. With the pandemic, all teaching was quickly moved online in spring 2020, including the practical workshops. This paper reflects on the challenges and benefits involved in the transition to online workshops, the changing role of the teacher, and what we can learn from these experiences as we return to campus-based workshops or develop more flexible formats integrating online asynchronous elements.

Keywords: *teaching research methods, research pedagogy, workshops, online, qualitative methods*

1. Introduction

Business students are interested in developing their skills in finance, marketing, strategic development and other subject related competencies for their coming work life. On the other hand, students often show limited understanding for the importance of methodology [1]. Still, understanding how knowledge taught during their education is constructed, what distinguishes scientifically based knowledge from other knowledge claims, and how to pursue own investigations using credible research methods should be of vital importance for business graduates in their future work life. While the importance of developing research method skills is recognized there is limited guidance for teachers, and research and theory for methods pedagogy is underdeveloped [2]. For educators, teaching research methodology often poses a challenge to not only spur an interest for this subject but also to support students in developing an ability to manoeuvre among a multitude of alternative perspectives, approaches, and ways to conduct business research.

This challenge could be seen as particularly evident when it comes to qualitative research methods. Qualitative research has been described as a craft, which rather than simply following specified procedures requires developing individual skills and, to some extent, reflexivity [3]. This implies that students should develop an awareness beyond seeing research work methods as a set of techniques in a value-free toolbox; instead being able to reflect upon the principles behind, and consequences of, alternative methods. For teaching research methods this implies that students need opportunities to actually conduct some data collection and analysis activities as learning a craft requires immersion in a concrete research situation to practice relevant activities [3,4]. Teachers must therefore pedagogically design a course so that it allows for an iterative process between theoretical principles, practical applications and own reflections.

While there is an enormous amount of available methods for sampling, data collection, and analysis of qualitative data in the methods literature; this literature seldom gives precise or definite instructions on how to collect and handle qualitative data. Instead, the qualitative researcher must, at least to some extent, develop one's own method as one goes along. Developing practical research skills thus also involves learning to be flexible and deal with contingencies that may come up during the process [3]. This implies that exercises in qualitative research

methods must be accompanied by elements of critical reflection, i.e. that students are encouraged to think over and discuss their practical experiences [1].

Within the course on research methodology taught at our undergraduate business programs, the pedagogical approach also needs to take into account considerable resource constraints. The research method course is a five week, full-time module, which sets limits on what students have time to do during the course. In addition, the number of students in the class is large, which means that the teachers' time for individual tutoring is limited. The challenges of teaching the craft of qualitative research methods under these constraints were handled through developing workshops where students both apply particular techniques and discuss and evaluate the outcome. The design of these workshops were in themselves an invention; further, as a result of Covid-19, workshops were transferred to online teaching during spring 2020 which created additional challenges and further ingenuity. The particular challenges of teaching research methods to business students, such as the abstract yet applied nature of the subject, the lack of perceived relevance for students, and the broad spectrum and varied perspectives included, are all exacerbated when transferred to a web-based format [5].

The purpose of this paper is to report and reflect on the development of hands-on workshops in qualitative interviewing and analysis. In addition, the paper reflects on the challenges and benefits involved in the transition to online workshops with ensuing change of the role of the teacher, and what we can learn from these experiences to enhance student learning.

2. To teach the craft of interviewing and qualitative coding

Qualitative research methods may require different approaches to teaching and learning, with more focus on the interpersonal interactions of students and teachers [4]. The characteristics of qualitative research make researchers themselves an important part of the research process, for instance in actively posing follow-up questions, in the way of transcribing oral data, in coding chunks of text, during writing, etc. [6]. Sometimes described as the researcher actually being the research instrument [3]. Moreover, qualitative research methods could be applied under a variety of epistemological and theoretical approaches; thus, it is important for researchers to consciously reflect upon the foundational standpoints and ambitions when applying qualitative methods. While teaching qualitative research methods from a pragmatic view can be seen as a set of techniques that "can be taught in the sense of recipes" [4] the authors of this paper hold what Breuer and Schreider [4] describes as a more paradigmatic point of view. Qualitative methods are more than just tools to pick up from a box; they need to be reshaped and adjusted to the specific research situation such as the issue under study, the shape and quality of empirical data, the researcher's experiences, and the often vague/emerging character of the research design [6]. Therefore, methods literature on collecting and analysing qualitative data are rather to be seen more as frameworks or guidelines than precise instructions.

These attributes contribute to the teaching of qualitative methods particularly challenging, requiring both hands-on practice as well as continuous reflection. Student understanding of the relevance of research methods courses, including for their future thesis work, can be improved by transitioning to more activity-based learning that requires active student engagement and reflection rather than with a traditional approach focusing on theoretical concepts and abstract knowledge [1]. One of the most common methods to collect qualitative data is interviewing; therefore, we believe that it is particularly relevant for business students to gain experience from planning and performing qualitative (semi-structured) interviews. This type of interview is an active interplay between two (or more) participants (notwithstanding with different roles); thus each interview is a unique event [7]. Nevertheless, careful planning is vital both in terms of what to ask (themes to cover), how to ask (e.g. regarding wording, openness, spontaneity etc) and how to listen, confirm and probe in relation to the respondent's answers. One common beginner's mistake is to focus too much on oneself instead of on the respondent [8, p. 101]. The skill of interviewing, in terms of being a good listener, confident in asking questions, daring to allow silence to prompt further speech, could however be trained and improved [8]. Similar could be said about thematic coding; while it is a common approach to analyse qualitative data there is an abundance of varieties. To conclude, interviewing and qualitative coding could indeed be seen as a craft or even an art; not only developed through practice but, equally important, through reflections on experiences from practice.

The notion that qualitative research methods is a craft that requires conscious iteration between theoretical principles, practical application, and critical reflection, makes the notion of student-centered learning relevant. Weimer's remark that "the hard and messy work of learning can be done only by students" [9, p. 10] seems to fit particularly well. The emphasis in teaching should be placed on introducing students to developing tacit skills

through practice under supervision, similar to an apprenticeship [3]. This implies that the role of the teacher is to facilitate and support the learning activities of students and that focus should be on what students (not the teacher) is doing [9]. It is the students who should do the interviewing and coding. Even if this might be seen as a less glamorous teacher role, it is no less important than the role of a midwife for a woman in labor. In order to encourage students to follow the instructions to come to class prepared, there must be consequences if coming unprepared, Weimar [9] argues.

The increased use of digital forms of teaching and learning means that many developments are taking place, with potential for improvements, but also raises concerns for teaching qualitative methods for example what it means for the proximity and social interaction that is perceived to be important [4]. Online teaching may limit opportunities for experiential learning, and the interaction, feedback and non-verbal communication needed [10]. Reported experiences of e-learning business research methods, where students worked on a research project, showed that the time required, both for the students to complete the course activities and for the teacher was more than initially expected [4]. To overcome the challenges of teaching qualitative research methods online it is important to engage students in reflexivity, allowing them to practice their skills, and make the learning dynamic and meaningful for example through a blended learning environment with opportunities for live interaction, including with the teacher, as well as off-line elements such as asynchronous online discussions, video clips etc [10].

2.1. Empirical background

The educational setting for this paper is a second-year undergraduate level course in Business Administration on business research methods. Each year approximately 300 students will take this course as it is a required part in the programs of the Business School in order to be accepted into the thesis course and to be able to get their degree. The course is given several times every year, with group sizes ranging from 40 to over 200 students, often involving four or more teachers. This is a five-week, full time course, with a broad aim ranging from theoretical/principal issues to practical/technical methods. Thus, the course should both develop students' understanding for how scientific ideals, values and perspectives influence scientific knowledge creation, and their ability to explain and apply quantitative and qualitative methods. Furthermore, students should practice to plan and design an empirical study based on a specific research question and a theoretical framework that they have formulated in groups. This implies that the course is intense, including several elements in order to develop both fundamental understanding for the principles behind scientific research, as well as hands-on experiences of the craft of research practices.

The way the course initially was designed, the more theoretical aspects of the learning outcomes were examined in a written exam while the more practically oriented learning outcomes were examined in a group research project, where students planned, performed and reported on an empirical study. Both teachers and students evaluations of this indicated that this group work was very time consuming and that a lot of time and effort of the students were spent on developing a theoretical framework and on collecting and analyzing either a large number of interviews or questionnaires. Even more concerning was that in this course design students would choose to do either a qualitative or quantitative study, and reported that their understanding was limited about the research practices of the other approach. Furthermore, the need to quickly assess an empirical material implied that tactical motives rather than appropriateness often guided students' sampling and data collection choices. In order to better support the students in reaching the learning outcomes of the course, involving theoretical understanding for and practical insights into both qualitative and quantitative methods, the group work was redesigned. The group research project was changed into doing a research proposal. By excluding the actual empirical study and reducing the theoretical framework the students' focus was directed more towards reflecting on the research design of a potential study and the possible consequences of their methodological choices. However, the change to a research proposal meant that the teaching team needed to construct other tasks that would allow the students to experience data collection and analysis practices in order to develop an understanding for both quantitative and qualitative research methods. As part of the intention to provide concrete, "research-like" experiences of research practices, the course was redesigned in 2017 to include two workshops in quantitative methods and two in qualitative methods, the latter which are the focus of this paper, dedicated to data collection and analysis respectively.

3. Designing practical workshops to give hands-on experience

At the qualitative research workshops, students work together in groups with guidance and support from the teacher and a lot of focus is on joint reflection to develop the learning. Before these workshops, there has been a lecture on qualitative data collection and analysis; further, students are asked to prepare for the workshops by reading the chapters in the course literature covering these topics. Workshops are scheduled in two-hour sessions with four groups in each session, and three to five students per group. The workshop sessions are held in a large room where groups are placed at separate tables. Both of the workshops begin with the teacher explaining the intended procedure, handing out hard copies of required materials, and presenting a time table for the session. For each of the workshops there are checkpoints where the students are asked to reflect on what they are doing and each session is concluded with a joint discussion in class.

In the first qualitative workshop: "Collecting qualitative data", each group is assigned with a business-related topic, from which they are to formulate a research question and develop a semi-structured interview guide. A semi-structured interview was selected for the workshop as this is a common method used in student theses in later semesters. The group is then split in two halves to carry out their interview with a respondent from another group; then they re-join with their original group to reflect on their experiences.

In the second qualitative workshop: "Analysing qualitative data", groups are presented with a ready-made interview guide from which they are to formulate a focus for analysis of an empirical material in the form of two (short) interview transcripts. The students then follow a (quite strict) thematic analysis procedure, requiring them to code elements in the interviews, aggregate codes into themes, and finally integrate themes into overall conclusions. They are also to present and compare their analyses and conclusions with the other groups and reflect on how their findings and analysis could be presented in a research report.

When groups work on their tasks during these workshops, the teacher moves around in the room and stops at tables to see how the work is progressing. The teacher may sit down with a group to watch what they are doing (e.g. jotting down interview questions, colouring interview transcripts) to comment and advise when needed. In case the teacher during the tour around notices some general problem, s/he may easily interrupt and call the attention of all students in class. Furthermore, the joint reflection at the end of the workshopshop implies that experiences and, potentially, difficulties encountered by one group are brought up to all students, thus students not only learn from their own work and mistakes, but also get insights into challenges encountered by the other groups.

3.1. Reflections on the campus workshops

The physical presence in the classroom allows the teacher to unobtrusively monitor groups and actively support them to further advance their understanding and practice of the qualitative methods. If anything is unclear it can quickly be addressed and any misunderstandings can be corrected. Importantly, even though the course contains a large number of students, the physical workshops allow the teacher to interact with smaller groups of students and identify areas that the group find difficult to grasp, which can be addressed in upcoming lectures, or to identify students who are struggling and may require additional support. It is easy to also initiate and lead joint discussions.

The introduction of the practical workshops were well received by students. Course evaluations in the years before the change indicated that the interest in the course topic was limited and that the students found the balance between tasks to be skewed, with too much time spent on the research project. In the three years that the workshops have been run they have been very appreciated and many students commented that they learnt a lot from these occasions. Overall, students find the tasks on the course suitable and corresponding well to the learning outcomes, and in the open comments fields the workshops are frequently brought up as very fun, useful and as good learning opportunities. For example, they felt that it was good to have actually tried to do an interview so that they know what to expect and be better prepared if deciding to do an interview study for their thesis. The experience made them reflect on what they could do differently and what to think about when developing interview guides. Similar reflections came out of the analysis workshop.

Student reflections on the value of practical workshops agree quite well with teacher experiences. Moreover, also being supervisors on student theses later in their program, we have experienced that thesis teams nowadays seem less biased towards using a particular method, either qualitative or quantitative depending on what they chose for their research proposal in the methodology course. Having tried out both approaches, they have

developed a broader understanding, allowing for choosing data collection methods more based on the research question.

Some developments have been made during the years, for example instructions and expectations have been clarified according to student comments. An issue that was brought up the last time the course was given on campus, was that in case a student missed the examining mandatory workshops, the student was assigned an individual written task that consisted of analyzing a qualitative study's data collection and analysis. The student representatives felt that the written task did not correspond to the same learning that came from workshop participation. This was brought to the attention of teachers, but with the practical nature of the workshops we saw little opportunity to provide the same opportunity for practice and joint reflection.

There is however one key challenge with the workshop design, which is the limited time for groups to complete the entire procedure in a two-hour session in the respective workshop. For instance, if a group in the first workshop, focused on interviewing, gets stuck in the formulation of a research question, this will affect the time available for developing their interview guide. Or if half-way through the second qualitative workshop it becomes evident that one group has misunderstood the coding procedure and needs to restart, then they won't be able to finish all the steps. With the large student body taking this course it is, however, not possible to extend the time allocated to each session.

4. Redesigning to digital workshops

When Swedish universities turned to on-line teaching in Mid-March, 2020, this had considerable consequences for the design and completion of the research methods course that was to be held in May with approx. 200 students. The main focus was to maintain the quality of education and to assure that the same learning outcomes could be reached while completely online. The Business School allowed for teachers to consider various tools, including the use of the video-conferencing platform Zoom, and this option was selected by the teaching team as the best option for many of the course activities as it allows to uphold real-time interaction with the students. However, not least the transfer of practical workshops from campus to online required much contemplation. At some point during these deliberations, we even considered to entirely skip the workshops and substitute with another assignment not requiring direct interaction between students and teachers. Still, our experience with written reassignments had shown that these were a poor substitute for actually experiencing doing an interview or working with coding. Thus, we were finally able to develop an online version for the respective qualitative workshops to be held through zoom-meetings. The key considerations for the transition to online workshops included that the students should get some practical experience of these research activities and that there should be opportunities for further reflection and learning. Additional considerations were that students should interact in small groups, that teachers should be able to both monitor and support groups during their work and that the workshop should be practically and technically feasible. Further, the fact that teachers could not deliver hard copies of instructions at the workshop, or unobtrusively look over students' shoulders, must also be taken into account.

4.1. The online version

Also in the online version, workshops were scheduled in sessions; however the length of sessions varied as will be described below. Instructions for the respective workshops were published on the course website in advance, and students were requested to read those before entering their scheduled zoom-session. There were also links to youtube-films with advice on how to perform interviews or code qualitative data. Apparently, this introduced an element of responsibility for students to prepare - individually or in their groups - that was not present in the campus version.

The first workshop, "Collecting qualitative data", was organized so that each session, with four student groups, began with a one-hour zoom-meeting where the teacher went through the workshop outline and reminded students of the importance to carefully follow the instructions. Student groups were then assigned to break-out rooms in order to develop their research question and interview guide. They could call on the teacher in case of questions, and to get their research question and interview guide approved. There was a deadline to submit their interview guide to the teacher through the chat function at least 15 minutes before the end of the workshop. The teacher also "walked around" in the break-out rooms to check on the groups' progress.

For the interviews, the teacher connected two groups but let the students themselves arrange when and how to complete the interviews (with two members from each group): in digital or physical meetings. The requirement

was that interviews should be completed during the same day; further, each group was to rejoin after the interviews (in their own chosen forum) to discuss their experiences. Finally, groups should summarize their experiences in writing through a shared online-document that all students had access to and could edit. After the workshop, teachers compiled a "guide on what to think of when conducting interviews", based on student experiences, and published this on the website as a joint outcome from this learning experience.

The second workshop, "Analysing qualitative data", also built upon careful student preparations. Instructions for the outline of the workshop and the coding procedure were published on the course website together with links to youtube-films on qualitative analysis. Furthermore, we prepared an instruction film where our thematic procedure was visually demonstrated. Students were encouraged to watch this film together in their groups.

The workshop began with assembling eight groups in one zoom meeting; here, the interview guide and interview transcripts (same as in campus workshops) were digitally shared (through the chat function). Student groups were then assigned to break-out rooms to work on the analysis. In order to facilitate for groups to get started, the teacher gave each group a specific focus for the analysis (instead of groups developing this themselves). Groups were reminded to carefully follow the written coding instructions.

Groups had two hours at their disposal for analysis work. They could choose the forum for their work (online or physical meeting), but were encouraged to divide their group in two pairs, each coding one interview transcript at a time. They were also presented some suggestions for how to practically complete the coding online, in case they chose that group work format. The teacher was available in the zoom meeting at specific times for questions and guidance. There were also check-points where students were to present their coding work to the teacher. After two hours, all students were required to return to the joint zoom-meeting and be prepared to present their work to other groups, both orally and by sharing their screen to illustrate their coding work.

4.2. Reflections on the online workshops

With the workshops being digital, teachers came to place a much stronger focus on explaining the process of interviewing and analyzing beforehand, as well as developing and giving clear instructions on the workshops. While the design of the workshops meant less time in class for the teacher, it meant more time for preparations and follow-up work. Much more time was also spent at the start of the workshop to explain the design of the workshop and to make sure that the students had prepared and understood the task.

As students were placed in break-out rooms for the tasks, the teacher did not have the same overview of the different groups' progress and insight into how they were doing. The role of the teacher was mainly to be available to answer questions and although it was possible to "walk around" in the groups' break-out rooms, this was time-consuming and inflexible. Another practical limitation was that if questions came up from one group that were relevant also to other groups, this had to be communicated to each individual group. While messages could be sent to all through a chat function this was often missed by students who were busy with their task. Further, as students had to work more "alone" without supervision and advice, it was a challenge to catch if a group, or individual student, were having problems at an early stage. On the other hand, the digital format including a share-screen option allowed the students to easily share what they were working on with the teacher, and with the other groups when asked to.

The online format allowed, and probably also required, more time for students to complete the respective workshop. An advantage that they could go through each step in the design of the interview guide and in coding of interviews, respectively, not being limited to a fixed two-hour deadline. We found this to be positive for student learning. In particular in the first workshop, when there was increased expectations on group reflections in a written format after the workshop, the students showed more in-depth reflections than in the short oral summaries in the campus workshop. They were also given more space to express their learning and could read others' reflections, too.

The transition to online workshop format was quite positively received by the students who evaluated the course positively in the summative evaluation. Several students commented on their learning from the workshops and that they found them valuable; apparently, practising qualitative data collection and analysis techniques worked well also online, according to students. What might be kept in mind is that with the rapid transition to online teaching due to Covid-19, students probably had some understanding for the fact that things would be different from normal teaching.

5. Discussion and conclusion

With the limited time available in a system of consecutive course modules, ideals of continuous learning over longer periods of time are not possible. For the research methods course for undergraduate students in Business Administration, the development of hands-on workshops in qualitative interviewing and analysis was a pedagogical transition that gave every student the opportunity to experience these parts of the qualitative research process at least once. This was found to be more effective than a larger research project and made sure students not only practiced either qualitative or quantitative methods. While the physical workshops allowed for joint reflection and instant teacher feedback, the limited time of the workshop hampered the learning. However, the large student groups make extending the time for the workshop or adding additional seminars or supervision unviable.

When the quick transition to online teaching was forced in spring 2020, requiring some deliberation on how the same type of learning could practically be achieved, the experience was positive in some aspects and the workshops were still appreciated by students. Although the transition was challenging it also turned out to be an opportunity to enhance student learning as the new format to some extent switched responsibility for learning from teachers to students, which is a key ingredient of student-centered learning.

The first key in this shift was the increased emphasis on student preparation before the workshops. Instructions were published beforehand and students were encouraged to carefully study those. Further, with links to additional resources available online, students were offered more diverse sources of information on interviewing and qualitative analysis. They were also encouraged to look for other sources, in all requiring more preparation time for students. Similarly, this required more work also for teachers before the workshop, in particular as the clarity of written instructions was imperative. While there was no control whether students had done their preparation, it quickly became apparent at the beginning of the workshop that they needed to turn to these resources to be able to complete the assignments with limited teacher guidance.

Secondly, there was less direct interaction between teacher and students during the workshop; hence, students had a greater responsibility to find their own way, learn from their mistakes with less supervision and support. This also shifted the role of the teacher with more focus on giving careful instructions and answering questions rather than actively monitoring and guiding their process. The switched responsibility for learning from teachers to students should be challenging for students since being dependent could be a safe and predictable position [10, p. 70]. Although the process of completing the assignments was "less smooth" compared to campus workshops and students made some mistakes and many indeed found it challenging, they also found it to be a learning experience.

Thirdly, while student completion of (basically the same) interviewing and analysis assignments took considerably longer time in the online format, the asynchronous elements of the workshops turned out to be valuable for student learning. When not being tied to the two-hour format, students could go through the steps in the respective assignments more at their own pace. Further, while the summarizing joint reflection at the end of each campus workshop was found valuable for learning, yet as Benson and Blackman [1, p. 49] observe, reflections require time. In the online format there was more time for students to reflect on their experiences and on their learning. Additionally, the written group reflections in a shared document after the first online workshop on interviewing increased students learning from and with one another, which is yet another characteristic of student-centered learning [10].

Based on these experiences, we have found that the shift towards more student-centered learning should be maintained when teaching is returned to campus. A blended learning format combining campus-based workshops with asynchronous elements from the online version could be the key to achieving both hands-on experience, interaction and reflection. The benefits of spontaneous interaction in campus workshops with the teacher moving around for questions and guidance should be maintained. However, the following elements should be integrated from the online workshops:

- Student preparations beforehand. Instructions, video films etc should be carefully studied.

- Students work independently with specific check-up points.

- Disconnect completion of cross-group interviews, and coding sessions, from the class-room setting.

- Written group reflections to be completed after the completion of the assignment, which should be even more valuable if also discussed in class.

This paper has reported on the development of hands-on workshops on an undergraduate methods course in order to enhance student understanding and learning for both principle and practical issues involved in collecting and analysing qualitative data. We have explained the design of, firstly, the campus workshops including step-by-step procedures for students to, on the one hand, plan, conduct and reflect upon a semi-structured interview and, on the other hand, to code interview data, aggregate codes into themes and interpret overall patterns. These workshops were positively perceived by both students and teachers; in particular, teachers could unobtrusively monitor and, if needed, guide students' work, and easily initiate joint reflection and learning. Still, the limited time available for student groups to complete all parts of the assignment was an enduring challenge, however considered as unavoidable due to resource restrictions.

Further, we have described and reflected on the transition of qualitative workshops to online teaching. In this format, considerable effort was placed by teachers to develop clear instructions and to search and offer a variety of supporting sources on interviewing and coding. This also required students to spend considerably more time in preparing for the workshops. Furthermore, the scheduling of workshop sessions included both online and asynchronous elements, which reduced the stress from the above mentioned time limitations and also encouraged more in-depth student reflections as well as sharing of experiences between students. In many ways the online workshops supported a shift towards even more student-centered learning, particularly when it comes to transfer of responsibility for learning to students and the role of the teacher.

The specific characteristics of qualitative research, that the individual researcher is personally embedded in the research process and that developing qualitative research skills require practical experiences, continuous reflection and flexible adaptation to upcoming circumstances [3, 6] are, apparently, mirrored in that in teaching qualitative research methods, focus should preferably be placed on students' active role for managing the practical assignments and the importance of their own reflections on experiences. We therefore argue that, unexpectedly as it may seem, a forced shift to online teaching enhanced our awareness of the direct correspondence between *conducting* qualitative research and applying student-centered learning when *teaching* qualitative methods; further, it directly contributed new ideas on how to support student learning also in campus settings.

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Impact of professors' personal factors and digital literacy on students' satisfaction in COVID-19 Pandemic

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Abstract

Due to institutions' and professors' unpreparedness, higher education institutions have faced many challenges in content delivery and student experience during the COVID-19 pandemic. In this paper, we explored the impact of the COVID-19 pandemic on faculty performance measured by students' evaluations at the end of the semester. We assessed the connection between the pandemic-related anxiety and behaviors, as well as some more subjective variables, with the job performance of faculty. Empirical data was gathered from 26 professors from the Zagreb School of Economics and Management in April 2020 and 127 students who evaluated the professors in May 2020. Interestingly, the results show that ZSEM faculty is more positively rated by the students amid the pandemic than their rating before the pandemic (May 2019). Furthermore, some faculty members experience higher levels of anxiety, predicted by levels of conscientiousness and neuroticism. Higher education institutions might rethink coaching and mentoring programs to support faculty and lower anxiety levels. To conclude, results also show that more digitally literate, more self-efficient, and less extroverted lecturers are – students are more satisfied with their work amid the pandemic.

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Groundwork for higher educational institutions – Assessing perceived service quality

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Abstract

Today's competitive environment is similarly omnipresent in education. The focus on providing superior service quality became imperative for higher educational institutions as competition intensified, internationalisation is ubiquitous and top-quality higher educational institutions implement international accreditation standards. Students perspective on institutional performance related to service quality is becoming relevant as they are considered as higher educational institutions primary stakeholders. Therefore, the purpose of this research is to explore perceived service quality in a HEI from a student perspective. Research was done on a sample of 368 students from a public higher educational institution in Croatia. It applies SERVQUAL scale to assess perceived service quality and approaches the employees by distinguishing between faculty and administrative staff. Research results point out that there is a need to differentiate between faculty and administrative staff in assessing perceived service quality. This is based on research results that point out the difference among perception of several service characteristics between faculty and administrative staff. Following on that, paper also offers managerial implications for HEI management practices.

Keywords: *Perceived service quality, Higher educational institutions, SERVQUAL, Faculty members, Administrative staff, Croatia.*

1. Introduction

Quality of education has never been so profoundly stressed as important or relevant for future of education. Adherence to specific standards of quality for higher educational institutions (HEIs) is important, relevant and assures continuous improvement. Still, many focus on quality issues, but only a few are ready to commit themselves to achieving that goal throughout the institution, and to constantly improve. Consistent with afore mentioned, is a number that roughly includes 1- 5% of business schools in the world that hold either AACSB or EQUIS accreditation [1], [2], [3]. However, if we take into account triple crown institutions (holding AACSB, EQUIS and AMBA accreditation) there are less than 1% of these HEIs in the world [4]. These institutions are committed to improving service quality in different aspects.

Moreover, this research topic is also highlighted in the academia. Abdullah [5] points out that focus on service quality is becoming an important competitive trend and a key strategic issue. This is also manifested in educational context, as Teeroovengadum, Kamalanabhan and Seebaluck [6] stress that focus on service quality is a necessity for HEIs as internationalisation is present, the number of private HEIs is growing, and state funding is diminishing. Consequently, focus on service quality at HEIs is becoming more than a necessity as it provides unique advantage compared to their competitors, both between private, and public sector HEIs. Therefore, HEIs focus their attention on exploring perceived service quality [7]. Before stating a change, the management of the HEI should be aware of the current level of perceived service quality, and to measure it after applying specific practices to enhance it. In this way a measurable starting point is set. Therefore, aim of this research is to understand current level of HEI's service quality before management decision to approach top business schools, as well as focus on continuous improvement of service quality.

There are different stakeholders of the HEIs. A traditional approach [8] emphasizes government, students, and academic community as HEIs stakeholders or more widely HEIs stakeholders are scientific community, business, government, the public sector and the general public [9]. Also, Benneworth and Jongbloed [8 according to Burrows, 1999) point out that HEIs should focus on a variety of stakeholders that are grouped into

several categories among whom are clientele (students, employers…), employees (faculty, administrative staff, support staff) and others. Hence, exploring service quality at HEI could focus on different stakeholders. Students are considered as primary customers of the HEIs [5], and consequently they could be also considered as the primary or the most important stakeholders of the HEIs. Therefore, the purpose of this research is to explore perceived service quality in a HEI from a student perspective.

Since, Parasuraman, Zeithaml and Berry [10] and Parasuraman, Berry and Zeithaml [11] have developed service quality SERVQUAL measure, different research directions have emerged related to service quality. This extends also to the HEI context [12], [5]. One stream of research focuses on exploring service quality by assessing expected, and perceived service quality, therefore, continuing Parasuraman, Zeithaml and Berry [10] work by adapting items to specific HEI context. Second stream of research extends SERVPERF scale to the HEI context by focusing on work by Cronin and Taylor [13], and the perceptions of service quality. Third stream applies evaluated performance (EP) scale [14], and measures the gap between perceived performance, and the ideal amount of a service feature. Fourth stream of the research on service quality is related to developing different measures of service quality by developing new scales in HEI context such as HEdPERF [5] or HEDQUAL [15]. As SERVQUAL scale captures different dimensions of services also in the HEI context, and it is proven and reliable in different service contexts [16] this research will apply SERVQUAL scale to student perspective on service quality, and it will extend the original scale in order to distinguishing faculty and administrative staff. It follows the guidelines found in AACSB 2020 standards [17] and EQUIS 2020 standards and criteria [18] which emphasise the need to separately evaluate faculty and administrative staff. Following that reasoning, the research question is, does distinguishing between these two groups of employees; faculty and administrative staff, give additional insight in HEIs service quality when using SERVQUAL scale.

2. Empirical research

2.1. Research methodology

With aim to explore posited research question; analysis was conducted on a purposive sample of students from Faculty of economics and business, University of Rijeka during 2012. A structured questionnaire, and paper and pencil method were used to collect the data. A total of 368 fully answered questionnaires was collected. Questionnaire consisted of questions related to socio-demographic profile of the respondents, and questions applying previously established SERVQUAL scale [10] [11]. In order to gain additional insight about perceived quality of the HEI's staff quality, the original SERVQUAL scale was adapted to the HEI context. Hence, doubling the items related to employees, in order to separately evaluate the quality of teaching and non-teaching service quality of the HEI, therefore, consequently distinguish between faculty and administrative staff. Moreover, the original scale of 22 items was expanded to 30 items. In the questionnaire when referring to SERVQUAL dimensions on perceived items we used HEI name to make it more clear to the respondents that this set of questions they should focus on HEI they are attending, and in the expected section we made it clear to the respondents that should focus their answers on business schools in general. Scale used a 7-point Likert-type scale, anchored with "strongly disagree" (1) and "strongly agree" (7).

Descriptive statistics and bivariate statistics were used to describe the pattern and characteristics of HEI quality as well to describe the research sample using SPSS ver 26.

2.2. Research sample

Research sample consists of 368 respondents, whose demographic characteristics are presented in Table 1.

Table 1. Sample demographic characteristics

Characteristic	Description	Frequency	Percentage (%)
Gender	Female	286	77.7
	Male	82	22.3
Study status	Full-time	304	82.6
	Part-time	64	17.4
Education	Secondary school gymnasium	160	43.5

	Secondary professional school	208	56.5
Household income	Lower than 800 EUR	131	35.6
	Between 800 and 1300 EUR	153	41.6
	Above 1300 EUR	84	22.8
Year of the study	2nd undergraduate	2	0.5
	3rd undergraduate	107	29.1
	1st graduate	75	20.4
	2nd graduate	184	50

Source: Author

Profile of the typical respondent is female (77.7%). Studying full-time at HEI (82.6%) at 2nd graduate study year (50%), comes from professional secondary school (56.5%), and with an average household income between 800 and 1300 EUR (41.6%).

2.3. Analysis of the research results

To achieve paper's purpose perceived-expected analysis of the perceived service quality elements at HEI paired samples t-test was used. In the following Table 2 dimensions of the SERVQUAL scales are presented and the items are grouped in following dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Items that were doubled due to distinction between two levels of service employees at HEI, administrative staff and faculty, are presented in their already established dimensions. Added items that were used instead of original SERVQUAL scale employees, are noted with (A).

Table 2: Perceived-expected analysis of perceived service quality elements

Items	Perceived		Expected		Difference	T-value
	Mean	SD	Mean	SD		
Tangibles						
T1 - School has to have up-to-date equipment.	4.13	1.328	6.37	1.033	-2.236	-26.131
T2 - School's physical facilities should be visually appealing.	4.23	1.370	5.26	1.340	-1.037	-10.468
T3 - School's faculty should be well dressed and appear neat. (A)	5.62	1.230	6.18	1.156	-0.56	-7.060
T4 - School's administrative staff should be well dressed and appear neat. (A)	5.60	1.201	6.09	1.151	-0.485	-6.231
T5 - The appearance of the physical facilities of School should be in keeping with the type of services provided.	4.77	1.418	5.78	1.311	-1.005	-10.301
Reliability						
REL1 - When School promises to do something by a certain time, it should do so.	4.05	1.429	6.61	0.922	-2.561	-30.312
REL2 - When you have problems, School should be sympathetic and reassuring.	3.91	1.637	6.3	1.077	-2.386	-23.091
REL3 - School should be dependable.	4.34	1.461	6.39	1.003	-2.045	-23.766
REL4 - School should provide its services at the time it promises to do so.	5.49	1.405	6.32	1.129	-0.835	-9.725
REL5 - School should keep its records accurately.	4.69	1.566	6.52	0.971	-1.832	-20.667
Responsiveness						
RES1 - It is not necessary for School to tell students exactly when services will be performed. (-)	4.42	1.861	4.09	2.017	0.328	2.946**
RES2 - It is not necessary to receive prompt service from School's faculty. (-) (A)	4.54	1.681	3.98	1.919	0.56	4.163

RES3 - It is not necessary to receive prompt service from School's administrative staff. (-) (A)	4.31	1.730	4.01	1.872	0.293	2.099**
RES4 - School faculty is not always willing to help students. (-) (A)	4.45	1.665	5.47	1.851	-1.021	-8.339
RES5 - School administrative staff is not always willing to help students. (-) (A)	4.08	1.764	5.63	1.835	-1.555	-12.526
RES6 - Employees of School are too busy to respond to students requests promptly. (-)	4.06	1.562	3.62	1.754	0.437	3.666
Assurance						
A1 - You can trust School faculty. (A)	5.01	1.326	6.33	1.038	-1.323	-16.679
A2 - You can trust School administrative staff. (A)	4.53	1.534	6.1	1.211	-1.571	-17.227
A3 - You feel safe in your transactions with School's employees.	4.5	1.587	6.32	1.120	-1.819	-18.430
A4 - School faculty is polite. (A)	5.07	1.375	6.57	0.950	-1.504	-18.257
A5 - School administrative staff is polite. (A)	4.15	1.762	6.63	0.898	-2.472	-23.626
A6 - Faculty gets adequate support from School to do their jobs well. (A)	4.47	1.258	6.29	1.103	-1.816	-23.433
A7 - Administrative staff gets adequate support from School to do their jobs well. (A)	4.49	1.273	6.21	1.144	-1.715	-20.656
Empathy						
E1 - School does not give you individual attention. (-)	3.73	1.647	4.39	1.738	-0.667	-5.434
E2 - School faculty does not give you personal attention. (-) (A)	3.87	1.653	4.68	1.746	-0.808	-6.422
E3 - School administrative staff does not give you personal attention. (-) (A)	3.92	1.653	4.7	1.775	-0.781	-6.376
E4 - Faculty of the School do not know what your needs are. (-) (A)	4.33	1.600	4.24	1.749	0.093	0.760*
E5 - School administrative staff do not know what your needs are. (-) (A)	4.02	1.619	4.22	1.754	-0.195	-1.627**
E6 - School does not have your best interest at heart. (-)	4.34	1.692	5.56	1.754	-1.213	-9.890
E7 - School does not have operating hours convenient to all their students. (-)	4.93	1.654	4.38	1.954	0.557	4.274

Notes: (-) Items were coded in reverse; (A) Items added to the original scale when distinguishing between administrative staff and faculty; * Difference is not statistically significant; ** Difference is statistically significant at p<0.05; All other pairs have differences statistically significant at p<0.001.

Source: Author

Analysis show that in the first service quality dimension, Tangibles, all the items have statistically significant difference between perceived and expected values. All the items have higher expected than perceived values. The highest difference between perceived and expected values is in the item "School has to have up-to-date equipment", indicating that novelty of the equipment is perceived lower than expected. The lowest difference between perceived and expected is noted in the physical appearance of the faculty and administrative staff. Difference between values of faculty (M(p)=5.62 and M(e)=6.18) and administrative staff (M(p)=5.60 and M(e)=6.09) is noted, but it is not substantial. The average gap for Tangibles is 1.065.

In the second dimension, Reliability, all the items are related to HEI in general, and do not include employees. Moreover, all the items have statistically significant difference between perceived and expected values. All the identified gaps are going in the same direction, indicating that expected values are higher than perceived ones. The highest difference between perceived and expected values is in the item "When School promises to do something by a certain time, it should do so.". And the lowest difference between perceived and expected values is noted in the item "School should provide its services at the time it promises to do so.". The average gap for reliability is 1.932. As it is larger than Tangibles it indicates that HEI is performing lower in this dimension.

Third service quality dimension, Responsiveness, focuses on employees. All the items have statistically significant difference between perceived and expected values. Difference between two items is statistically significant at p<0.05. The greatest difference between perceived and expected values is in the item "School administrative staff is not always willing to help students." where expected value is greater than perceived (M(p)=4.08 and M(e)=5.63). And the lowest difference between perceived and expected values is noted in the item "It is not necessary to receive prompt service from School's administrative staff.". Difference between values of faculty and administrative staff is noted. It is present both between perceived and expected values of the following items: "It is not necessary to receive prompt service from School's faculty/administrative staff." (perceived values (M(p/faculty)=4.54 and M(p/administrative staff)=4.31) and expected values (M(e/faculty)=3.98 and M(p/administrative staff)=4.01)) and item "School faculty/administrative staff is not always willing to help students." (perceived values (M(p/faculty)=4.45 and M(p/administrative staff)=4.08) and expected values (M(e/faculty)=5.47 and M(p/administrative staff)=5.63)). For the item "It is not necessary to receive prompt service from School's faculty/administrative staff." in expected values difference is present, but it is not substantial. The average gap for Responsiveness is 0.699, hence lower than average gap for Tangibles and Reliability.

In Assurance, as the fourth service quality dimension, all the items have statistically significant difference between perceived and expected values. Items in the Assurance factor are all in the same direction, indicating that respondents have greater expectations than what are the perceived values. The highest difference between perceived and expected values is in the item "School administrative staff is polite", and the lowest difference between perceived and expected values is noted in the item "You can trust School faculty". Difference between values of faculty and administrative staff is noted. It is present both between perceived and expected values of all the items distinguishing between these two groups of employees: "You can trust School faculty/administrative staff." (perceived values (M(p/faculty)=5.01 and M(p/administrative staff)=4.53) and expected values (M(e/faculty)=6.33 and M(p/administrative staff)=6.01)) and "School faculty/administrative staff is polite." (perceived values (M(p/faculty)=5.07 and M(p/administrative staff)=4.15) and expected values (M(e/faculty)=6.57 and M(p/administrative staff)=6.63)). Moreover, for the item "Faculty/administrative staff gets adequate support from School to do their jobs well." it is that in expected as well as in perceived values, difference is present, but it is not substantial. The average gap for Assurance is 1.746 and it is lower than Reliability. This indicates that HEI is performing better in Assurance dimension than in Reliability but lower than Tangibles and Responsiveness dimensions.

Empathy as the fifth service quality dimension focuses on employees and School in general. Majority of the items have statistically significant difference between perceived and expected values, except for item "Faculty of the School do not know what your needs are." Also, in this item higher value is in perceived than in expected item but is statistically not significant. Additionally, one item more have higher perceived than expected values. This item is "School does not have operating hours convenient to all their students" but difference here between perceived and expected values is statistically significant. The highest difference between perceived and expected values is in item "School does not have your best interest at heart.", and the lowest difference between perceived and expected values, if we take into account only statistically significant differences, is noted in item "School administrative staff do not know what your needs are.". Difference between values of faculty and administrative staff is noted. It is present both between perceived and expected values of all the items distinguishing between these two groups of employees: "Faculty/administrative staff of the School do not know what your needs are." (perceived values (M(p/faculty)=4.33 and M(p/administrative staff)=4.02) and expected values (M(e/faculty)=4.24 and M(p/administrative staff)=4.22)). Where for item "School faculty/administrative staff does not give you personal attention." in expected as well as in perceived values difference is present, but it is not substantial. The average gap for Empathy is 0.616, hence being the lowest difference between all the average gaps in different service quality dimensions.

2.4. Discussion

As from the analysis can be observed, differences are present among both perceived and expected items for faculty and administrative staff. Hence, indicating that this distinction is present ad worthwhile observing. This was also noted by several authors [19] [6] and likewise AACSB Accreditation standards and EQUIS Standards and criteria stress that faculty and administrative staff should be analysed separately (cf. Standard 3 2020 AACSB standards [17]; Chapter 4 and 7, EQUIS 2020 standards and criteria [18]). For five items related to this differentiation between two groups of employees (RES2/RES3, RES4/RES5, A1/A2, A4/A5, E4/E5) analysis

show that difference between average values in items between faculty and administrative staff is present and substantial. While in three items (T3/T4, A6/A7, E1/E2) difference is present but it is not considerable. Therefore, results point out that differences between these two groups of employees are present and that there is a need to approach them separately when evaluating service quality of HEIs.

This research contributes to service quality research in the following ways. Firstly, it stresses the need to distinguish between different groups of the employees at the same HEI. Therefore, separately assessing the perceived and expected service quality of the faculty and administrative staff helps HEI management to reveal on what features to focus when improving service quality. It stresses that distinguishing between two groups of employees helps HEI management to identify several different gaps where they can focus on to efficiently improve overall institutional service quality. Secondly, research also stresses the need to consider separately all groups of employees as they are not equally contributing to all service quality dimensions. This helps HEI management to focus their efforts on improving service quality more efficiently especially as some practices are providing results for faculty but are not at all relevant for improving performance of administrative staff. Thirdly, by exploring perceived service quality at the beginning of the process to implement international accreditation standards it helps HEIs to set a groundwork for future measurements and to control this process from the beginning. As accreditation standards represent an outline that guarantee constant level of quality for HEI's students [20], management focus on approaching top business schools by implementing international accreditation standards for service quality signals to students that HEI is taking seriously the quality of education. Students, HEIs primary stakeholders, are nowadays, more than before aware of the need, if they want to get high quality education, to enrol into universities and business schools that align their education with AACSB or EQUIS standards. Finally, research results show that distinguishing between these two groups of employees, faculty, and administrative staff, gives additional insight to the HEI management about current level of perceived and expected service quality by assessing SERVQUAL dimensions.

3. Conclusion

By focusing on perceived service quality from a student perspective is a precondition for HEIs to establish a groundwork for quality education. As quality education and its constant improvement is one of the elements that international accreditations stress, it is important to know how HEI is preforming at the beginning of the process. As research stresses, distinguishing between different groups of employees, faculty, and administrative staff, will help HEI to be more focused on improvement elements. This will also provide clearer starting point for international accreditations like AACSB and EQUIS as it is more in line with their standards then observing employees as a homogenous group. Hence, consequently HEIs will perform better in the long run.

Research also offers managerial implications for HEI management. Service quality measurement should consider assessing separately to contribution of the faculty and administrative staff to overall perceived service quality of the HEI. This could be done at the end of the academic year by implementing a student questionnaire for assessing level of service quality in both faculty, and administrative staff. Faculty is dominantly assessed on their teaching performance, but this research shows that their contribution to institution's service quality should be taken into account. Administrative staff is seldomly researched in their impact to institution's service quality. So, including them into student assessment could reveal some weak points and suggestions how to improve service quality in dimensions related to administrative staff. Also, conducting in depth interviews with student representatives could shed a light on what to improve from the administrative point of view to improve overall institutional service quality.

Limitations of this research are found in narrow focus on only one HEI. This can be resolved by focusing the further research on different HEIs both private and public. Also, it would be beneficial to explore HEIs in different countries or with different levels of acceptance of both AACSB and EQUIS standards and to compare the results. As this research is done in one-time frame, the further research could focus on assessing the service quality in the same HEI after applying quality measures oriented towards approaching top business schools. This would help HEI to use additional instruments in assessing service quality, and if already measured service quality at the beginning of the process, to re-assess while it progresses towards the set goal.

4. Acknowledgement

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Major trends in the transformation of higher education in the conditions of growth of high-tech companies in the economic market

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Abstract

The article examines the main directions of the influence of high-tech companies, which are actively developing in recent years on the economic market, on the modernization of higher education. The purpose of the work is the possibility of using the findings for the theoretical substantiation of the main provisions of the modernization of the higher education system, the formation of a system of interaction between universities and high-tech companies in order to improve the quality of education in Russia. In addition, in the article the author shows that digital transformation has many positive effects, but at the same time, a certain set of problems arises that can be solved by each university independently based on world best practices.

General Systems Theory and Nautical Tourism

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Abstract

The need to establish effective competitiveness and attractiveness of destinations using effective and sustainable strategies based on market conditions, as well as to balance the interests of stakeholders, was highlighted as a major influence on the importance and potential of the tourism industry for the economic development of society at local and national level. It is very important for the design and operation of systems within maritime processes to know how the process behaves at desired changes in characteristic sizes and how successfully it can eliminate the effects of unwanted changes in those sizes. A mathematical description serves as the basis for demonstrating process behaviour. Nautical tourism is a dynamic form of selective tourism that seeks to attract tourists with its diversity of offerings. Nowadays, nautical tourism is losing its status as a mass tourism and includes a target group of tourists who are rich, successful and highly educated people with an aspiration for adventure and a different form of entertainment. The aim of this paper is to propose important segments for developing systems thinking in order to make destination management sustainable, as well as to present opportunities which pursue strategic policies and conditions for the formation of different types of governance structures. The process involves the development of a systemic approach to thinking that represents a holistic understanding of the interconnectedness and relationships between the various components that influence the sustainable development of tourism.

Keywords: *System development responsibility, System management, System sustainability*

1. Introduction

The tourism market of the twenty-first century is determined by dynamics and continuous changes which is a great challenge for the management of a tourist destination. Tourism development is a complex process. Nautical tourism covers aspects of sea tourism such as boating, sailing, cruising and diving, as well as the development of coastal ports, coastal water sports such as jet skiing, speedboating, harbour tours and marine heritage destinations. Therefore, in recent years there has been an increasing need for systematic theoretical constructs that will discuss the general relations of the empirical world. In the facts of the dynamics of the tourism market, knowledge becomes a key and enduring source of the ability of a tourist destination to maintain and strengthen its competitiveness in the tourism market. Today's process of globalization is determined by the exceptional dynamics. Such a process conditions the need for constant changes and adaptations in tourism. This led to a search for the application of general systems theory. The approach to systems theory is based in five contexts - social / cultural, economic, environmental, technical, and individual. It is distinguished by being a realistic and useful methodological apparatus in the study of many phenomena. This paper does not, of course, seek to establish a single, standalone "general theory of practically everything" that will replace all the specific theories of particular disciplines. Such a theory would be virtually without a content, because we generally always pay with the sacrifice of content, and everything we can say about practically everything is almost nothing. The management of a tourist destination is an increasingly competitive and complex business involving the coordination of economic, social and geographical elements within a particular tourist area. Research management of tourist destinations traditionally tends to use a reductionist approach to track specific flow variables (number of visitors, costs) or to measure discrete relationships between variables (tourism expenditures and employment, visitor numbers and

social impacts). The limitations of this research approach are becoming apparent as tourism development captures many elements within destinations and a new approach to tourism destination management research is needed.

However, somewhere between that with no meaning and that with no content, must be, for every purpose and at every level of abstraction, an optimal degree of generality. It is argued by general systems theorists that such an optimal degree of generality in theory may not always reach certain sciences.

This paper examines the theoretical and practical basis of a systems approach, with reference to international standards. Such use presents a methodology that allows the application of systemic approach to tourism product quality assurance. The following are the aspects of the quality of tourism services: systemic approach, risk management and information, standardization and quality assessment of quality monitoring. It represents the practical application of a systemic approach in the tourist regions of Croatia. Some studies have justified the creation of a unique methodological support for quality monitoring, safety of tourists, tourism development, implementation of risk management systems and suppliers, the need to increase the responsibility of tourism providers. Adopting of measures based on a systematic approach aimed at improving the quality of state regulation of tourism. It is suggested that systems theory is the best when it comes to the application of tourist destination management, as it can accommodate the social and environmental processes as well as the economic factors that have been the focus of previous researches. Furthermore, it is argued that the tourism system is an open system as it responds to changes in social, natural and economic factors and evolves to an increasing complexity. Cybernetics is an approach closely aligned with systems theory, and sometimes terms are used synonymously. Basically, cybernetics focuses on studying feedback - and especially negative feedback as keeping the system in a stable state. Terms such as communication and control in living organisms and organizations are key areas for cybernetics that strongly emphasize the subjectivity of knowledge[1].

The aim of this paper is to identify the strengths and weaknesses of tourism analysis as a system, based on general systems theory as well as to create the original tourism system. However, the tourism system must be both logical and maximally functional. The preparation and elaboration of this paper primarily use modelling methods and methods of systems theory that complement each other. Holistic approaches suggest models that are in function of the development of a tourist destination. The dynamics of the tourism market directly influences destination management and forces it to formulate a conception in the direction of qualitative changes in response to current tourism needs. It creates a vicious circle that is constantly influenced by the dynamic tourism market and is rapidly accelerated by the influence of modern IT trends.

The analysis of the literature reveals different divisions of strategies within certain segments of the business. By influencing the dynamics of the tourism market and contemporary strategic trends in the tourist destination, the expertise and creativity of the destination managers come into play.

The literary base with the most direct impact on this research is the studies that explicitly address the structure, organization, processes, conditions, outcomes, and problems / difficulties of public interventions in favour of innovation and entrepreneurship. The analysis is structured into three basic questions: why, what and how should support be given?

The systemic view applied to tourism is not immune from criticism, which is most often focused on systems theory in general. System models, for example, offer some explanations for how tourism works, but it cannot deepen the knowledge of an important fact for a comprehensive understanding. Some questions about the tourism system remain open. For example, what logic is there among system components? How will the attributes of the system affect its performance? How does the social system work? How can the energy input and output of the system be quantified? If they cannot be quantified, can they be quantitatively analysed? How can the tourism system be separated from its surroundings?

When it comes to sustainability, there are the three "pillars" to be considered: environmental, economic and socio-cultural. Tourism must be sustainable in all three areas in order to truly be considered as sustainable tourism [6]. As more and more regions and countries develop their tourism industry, this has produced significant impacts on natural resources, consumption patterns, pollution and the social system [4]. The need for sustainable planning

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[1] Quoted from: Heylighen, F., P. Cilliers, and C. Gershenson. 2007. Philosophy and complexity.in J. Bogg and R. Geyer, editors. Complexity, Science and Society Radcliffe Publishing, Oxford

and management is crucial to the survival of the industry as a whole. Environmental sustainability is one of the three pillars of sustainability.

The tourist system is characterized by the following features:

1. Relations with the environment consisting of a cultural, social, environmental and economic subsystems.

2. Structural organization, consisting of upgrade subsystems and an infrastructure.

3. Operational actions, which contain the dynamics of the tourism system. It includes supply, market, demand subsystems, production, distribution and consumption.

By systematically monitoring and analysing, and above all, anticipating global changes, contemporary trends in business development in tourism, changes in the behaviour of modern tourists, competition and the consequences of such a situation, tourism management is oriented towards new value systems in management at the level of the tourist destination and its existing organizations.

The theoretical basis of this paper is based on the numerous works of famous scholars mentioned here. It would be impossible to identify one author as the creator of general systems theory, but there is consensus in academia that one of the leaders in this theoretical field was the biologist Ludwig von Bertalanffy (1901–1972). Authors who have developed and disseminated general systems theory, each in their specific field include the following: Norbert Wiener, Gregory Bateson, Heinz von Foerster, Niklas Luhmann, Humberto Maturana, Francisco Varela, Talcott Parsons, Béla H. Bánáthy, Howard T. Odum, Eugene Odum, Edgar Morin and Fritjof Capra.

Systems theory has already proven useful for science in maritime communication. The application of this theory made it possible to understand that communication should be a very personal experience and that there is no best way to communicate with everyone. Systems theory can be applied to this work, allowing it to assess not only what problem seamen may face, but also what problem they do face, as well as to help in understanding why the problem occurred.

All systems have components that have interdependent relationships. Systems consist of subsystems which are smaller entities that make up a larger system. Systems theory suggests when there is a problem with one component in a system that cannot isolate that component but uses a holistic approach and examines the whole system to understand what the problem might be. The advantages and disadvantages of general systems theory are also highlighted. Problems are a sign of a faulty process. When the system does not do this because either the feedback is down, or the adjustment cycle has been ignored; both are functions of communication. The principle of system approach places the individual elements of the system in their environment and observes the relationships between them.

Tourism is not just an industry, it is an open, dynamic and complex system. The system consists of many interactive components and involves many different participants. The development of tourism in a sustainable way is influenced and is subject to many factors. The limitation of traditional approaches to tourism research has become apparent in many cases. These approaches usually study a particular issue or the problems of the tourist image as a whole. As a result, it has become difficult to manage tourism towards sustainability. This paper provides an overview of system thinking and its application in the study of the nautical-tourist system. Etymologically, nautical tourism is a combination of two concepts, nautics and tourism.

In today's business environment, it is crucial to abandon the traditional management approaches to tangible assets and focus on strengthening intangible, i.e. immaterial assets, so that the value system must know the importance and focus on knowledge.

This research shows that system thinking has proven to be an effective and powerful tool for explaining the complexity of the tourism system. The dynamic environment of the tourism industry and the immediate changes in tourism needs have created the need for creative products and services. This helped simplify, clarify and integrate isolated industry-related issues and provided a mechanism for group learning and decision-making to achieve desirable results.
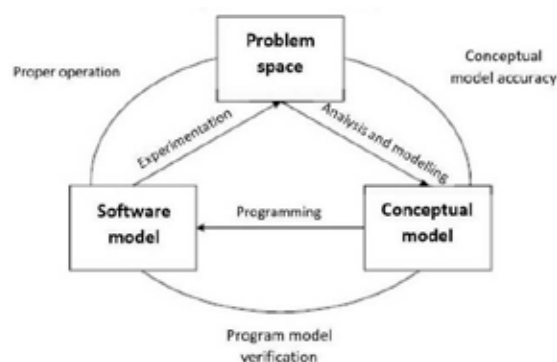
Figure 1. Conceptual model of the applied dynamics system (the authors)

2. Description of a system dynamics model

The main feature of system dynamics is building computer simulation models that map the mental model of a system structure. The simulation model mimics the behaviour of a system based on predefined system variables. By changing the system variables, it is possible to change the structure of the system and analyse the behaviour of the system over time. Such simulations allow modelling and understanding of a system that is otherwise difficult or impossible to monitor in the real world (e.g., changing ecosystems over a long period or distant geographical area), and it also affects the learning process that is facilitating, and the decision-making process that is supportive.

In the first phase, **the problem definition,** the system is recognized and defined as well as its boundaries within which it is observed, which is described by a mental-verbal model. When describing, you must take care to properly identify the time-varying values as well as their cause and effect.

In the second stage, **the system conceptualization** based on the verbal model, a structural model and flow chart are being built. It is important to identify and chart the most important material and information flows that change the state of the system.

The dynamics of the observed system, expressed by some values, is studied at specific time intervals, i.e. the basis for observing the change in the state of the system are the time intervals at which its state changes.
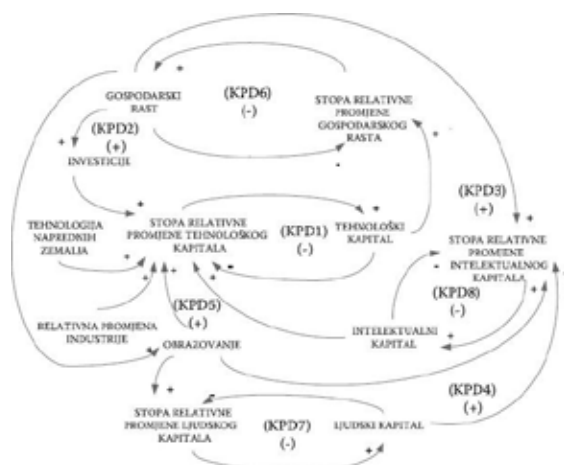

Figure 2. System dynamics model on the example of nautical tourism (according to A. Munitić, Computer simulation, Brodosplit, Split)

This paper proposes systemic thinking as an appropriate tool for sustainable tourism development. System dynamics is known as a powerful and practical method that has the ability to model complex systems for the purpose of studying their behaviour over a period of time. System dynamics uses two types of conceptual models: causal loop diagrams and flow diagrams. The system dynamics method has the ability to study the dynamic behaviour of a complex system over time. It can also be used for practical purposes, especially to identify the strengths and weaknesses and competitive position of a given coastal area relative to others. Due to the myriad interactions between the tourism industry and its related sectors, it can be considered a complex system. The last two decades have seen an increase in the number of publications using system dynamics to study complex tourism systems. After conducting a systematic review of the literature, a new perspective was gained regarding the application of system dynamics in tourism. Studying the available literature, it is concluded that the number of publications is limited and lacks a holistic approach to solve complex tourism problems, offering several opportunities for system dynamics researchers and practitioners. System dynamics modelling consists of two different methods: qualitative and quantitative modelling. There has been a great deal of debate among experts about the advantages and disadvantages of using these methods. Originally, the dynamics system was developed as a quantitative computer simulation method aimed at using computing power to analyse socio-economic issues. Using the ability of computers to manipulate data and perform simulations helps to observe the dynamic behaviour of the system, which allows us a deeper understanding of dynamic problems.

System dynamics is a method that can capture the dynamic behaviour of a complex system over time. The use of systems thinking is an ideal tool to support a complex scientific decision. This paper presents a dynamic model for the tourism sector. For this purpose, a system dynamics model corresponding to a causal loop diagram has been developed which does not focus on simulating the future behaviour of the tourism sector, but rather studies the feedback and interconnections of different elements of the tourism sector. The main limitation of this research is that the developed system could not include all the elements relevant to the tourism sector due to time and data limitations. The tourism industry, due to the myriad interactions between its sectors, can be considered a complex system. That is why the system dynamics has attracted attention of tourism researchers over the past two decades.

The analysis of the available papers shows the applicability of system dynamics as a method for solving many different problems. However, it can be concluded that although the system dynamics method has shown significant potential for tourism decision-makers and regulators with tools for strategic and operational policy development at many different levels of analysis, the number of requirements in this sector is still limited. It is therefore expected to expand the use of dynamic modelling systems in the tourism industry to promote a comprehensive understanding of the complex issues facing the industry and to help develop more effective policies.

The aim of this paper is to evaluate the application of the system dynamics method in the planning and development of the tourism industry. Tourism has become one of the largest industries in the world. It is a fast growing industry abroad that has a direct impact on economic, environmental and social aspects. Also, tourism has become an economic driving force for sustainable development, encouraging many developing countries to promote tourism policies in order to improve their economic development.

Tourism as a whole is an important economic activity, and even more so for a large number of maritime and coastal regions. In fact, almost two in three European tourists (63%) prefer coastal regions as their favourite holiday destination[2].

The Blue Growth Study[3] on scenarios and drivers of sustainable growth from the oceans, seas and coasts [15] clearly indicates the importance of coastal tourism within the Blue economy as a whole: a total of 2.75 million people (including yachts and marinas as well as cruise ships) is directly employed as a result of these economic activities - approximately half of the employment of the Blue Economy as a whole (of the estimated 5.4 million). Maritime and coastal tourism has great importance for a large number of local economies[4]. It is important to address the challenges and opportunities of this sector in light of the current economic, financial and public finances crisis.

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[2] Facts and figures on the European on holiday: 1997-98', Eurobarometer 48, Brussels, 1998.
[3] Blue Growth is a long-term strategy to support the sustainable growth of the marine and maritime sectors.
[4] COM(2012)494 final.

Maritime and coastal tourism also faces major sustainability challenges. Many coastal areas are intact and fragile, and recent decades have shown that tourism activities, especially mass tourism, can threaten local ecosystems, as well as the overall attractiveness of such areas. The future success of maritime and coastal tourism therefore depends on the ability to develop sustainable and integrated value propositions that take into account its environmental impacts. Therefore, the challenges and opportunities of coastal tourism, sailing and marinas and cruising together should be considered - while recognizing the specifics of each of these activities. Of course, any EC policy initiative must be evidence-based. It is therefore necessary to enhance knowledge in terms of definitions, sectoral knowledge, economic and market indicators, as well as insight into the economic, social and environmental impacts of all policy packages to be considered.

Given the above, and as announced in the Communication on "Blue Growth", European Commission (EC) has developed policy measures for maritime and coastal tourism at EU level. Of course, any EC policy initiative must also be evidence-based. It is therefore necessary to improve knowledge in terms of definitions, sectoral knowledge, economic and market indicators, as well as insight into the economic, social and environmental impacts of all policy packages to be considered. The main objective of this paper is to present the preparation of policy measures for maritime and coastal tourism at EU level.

The specific objectives of these actions are:

- Develop a precise definition of maritime and coastal tourism

- Identify, confirm and substantiate issues

- Analyse the existing regulatory framework

- Complement and complete, where possible, data gaps that are important in light of the development of policy packages

- Propose policy objectives and support the operationalization of the necessary actions within each venture.

- Analyse possible economic, social and environmental impacts.

Business planning is one of the basic functions of management, a process that involves the selection of tasks and goals, and the actions to accomplish them. It requires decision-making, that is, choosing between alternative future courses of action. System dynamics is an important segment of business planning; it relies on information control theory and focuses on problems that can be modelled as systems composed of different relationships between elements that are presented as continuous processes. System dynamics is one of the systems analyses in terms of systems theory because it represents one of the realizations of the system approach and its phases almost completely coincide with the basic phases of the system approach. Furthermore, it can be considered as one of the cyber methods because it mainly deals with feedback systems, which are cyber systems.

3. Definition of the nautical tourism sector

The definition of maritime and coastal tourism is needed in order to assess major trends and developments and to be able to assess the impact of possible policies on these sectors. However, the main publicly available literature does not provide a clear and consistent definition of maritime and coastal tourism. In fact, many studies apply different definitions that are sometimes related to specific sectors (e.g., cruise) while they are sometimes geographically based (e.g., tourist activities that take place in a coastal area within certain distances from the sea expressed in km).

"Nautical tourism is a set of multifunctional activities and relationships brought on by tourist yachters inside or outside nautical tourism ports, using vessels or other facilities related to nautical and tourist activities for recreation, sport, entertainment or other needs." [10]

Nautical tourism as a system is studied primarily through its basic purpose and functions, and then through its goals, activities, organizational and exploitation basis, complexity and dynamism, manageability, environmental dependence and possible changes in the environment. Furthermore, nautical tourism is examined in relation to all its spatial, social, economic and other effects relevant to the overall tourism and economic system.

There are three major and interconnected challenges that need to be addressed when defining maritime and coastal tourism:

- How to define tourism as an economic activity?
- What is the exact geographical dimension of maritime and coastal tourism?
- Should there be a focus on demand or supply?

For this paper, a definition that takes into account all the above aspects would be appropriate.

The following definitions can be accepted as short ones:

- Maritime tourism includes tourism that is mainly on water rather than land (e.g. boating, sailing, cruising, nautical sports) but also includes the operation of land facilities, production of equipment and services required for this segment of tourism.
- Coastal tourism includes beach recreation and tourism (e.g. swimming, surfing, sunbathing) and coastal tourism (all other tourist and recreational activities taking place in the coastal area for which proximity of the sea is a requirement) as well as supply and the manufacturing industry associated with these activities.

From the perspective of demand, a geographical term used in some definitions [5] can be used. Demand in this case refers to the demand for tourist services, expressed by tourists. Such demand can be measured by indicators such as the number of tourists visiting the coastal region or going to sea. We include tourism related to nights spent in accommodation facilities (not including other residences, staying with friends or relatives).

• From a supply standpoint, the geographical angle only partially covers the services offered. Of course, aspects such as accommodation, berths for marinas or employment in the tourist services sectors in coastal regions are geographically defined, but especially upstream activities that provide ancillary equipment and infrastructure may be found elsewhere (e.g. ship and boat construction).

Analysis of the maritime and coastal tourism sector requires a large number of dimensions to be considered:
• differentiation between different maritime and coastal tourism activities;
• differentiation between very visible and poorly visible sites;
• recognizing the importance of upstream and downstream activities (value chains);
• taking into account the difference between different sea basins;
• the need to address economic, environmental and social impacts;
• focusing on specific actors, especially local and regional actors, as well as small and medium enterprises.

However, because of the scope of the EU and the limited timeframe of our study, a degree of generalization is needed for our analysis, so as to combine the above dimensions while respecting local specificities and dealing with potential benefits for the EU as a whole. We therefore propose that this analysis be provided with the necessary depth by introducing a set of business models for maritime and coastal tourism. The starting point for them is demand, and they cover the following two dimensions:

- "The number of tourists" meaning the total number of tourists annually
- "The amount of value" refers to the economic value or the total consumption of tourists a year. However, it also refers to included social and environmental values.

Mass tourism involves catering with large quantities and low average consumption. Mass tourism [3] is quite well established concept, although the definitions in the literature vary from visitor numbers, over psychological implications up to the socio-ecological consequences for communities located in such tourist areas [13]. The definition here draws on a mixture of the criteria mentioned above but is greatly simplified to fit the purpose of our research. Therefore, this model is called upon to identify those locations (in the case of coastal tourism) or services offered (in the broader assessment of maritime and coastal tourism), which tend to attract a large number of visitors with relatively low average consumption.

In terms of potential impact, mass tourism destinations and services have traditionally ensured lasting economic growth, which has recently been triggered by demonstrating the potential risk of low sustainability [5]. For example, these locations have yielded limited economic gains during the year due to the importance of

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[5] Eurostat, 2012, Inter-service Impact Assessment Steering Group for the planned Communication on Maritime and coastal Tourism. Meeting 26/10/2012, Brussels EUROSTAT input: current and future tourism statistics with relevance for the Communication.

seasonality in the services offered and the high risk of externalities resulting from the high number of visits. Furthermore, in the absence of any fidelitization strategy[6], the high dependency on occasional visits to some "mass tourism" destinations can be exploited by global competition and may be attracted to the next cheapest available location. As a result, the long-term impact on local communities can be limited or even negative. The negative externalities of such a model can be mitigated by promoting local incentives for environmentally sustainable infrastructure and sustainable value-added services that can still provide a large number of visitors, although with an average consumption that may still be limited.

4. Maritime and coastal tourism

The value chain of maritime and coastal tourism consists of a rather complex relationship between a number of different actors and sectors. It is a broad tourism industry because it contains accommodation, transport, tour operators, local tourist offices, etc.

The standard economic impact analysis monitors the flows of money from tourism consumption, primarily to businesses and government agencies where tourists spend their money (direct impacts). As a result of direct impacts, indirect impacts are created, corresponding to both goods and services purchased by the "wider" maritime and coastal tourism sector, as well as investments and public consumption from (for example local) food and beverages, manufacturing sector, (local) civil engineering and construction sector, (local) health services, and air services. These impacts lead to changes in economic activity resulting from household consumption directly or indirectly as a result of tourism consumption[7].

In practice, this is hardly possible, because the tourism industry as such, let alone maritime and coastal tourism, is not easy to track in current statistics. Also, many subsectors are not just related to tourism, such as transport of people or visiting bars, restaurants or shops. Nevertheless, the economic importance of coastal tourism has been identified using different indicators and research reports. To the greatest extent possible, attempts have been made to identify direct, indirect and induced importance as the distinction is not always clearly stated. Also, some studies only calculate direct employment. The number of EU member states considered also differs from study to study. Unless otherwise stated, the economic impacts in this paper are related to the EU27. Due to the difficulty in gathering relevant data, the information in this chapter is indicative, not concrete.

The importance of tourism for the economy of the small and peripheral islands is extraordinary. Islands are limited in their ability to create economies of scale due to their limited diversity and quantity of resources. They face difficulties in access (and thus high transportation costs) and cannot profit economically from agglomeration externalities. However, apart from a limited population, they usually have a rich natural and cultural environment that encourages inflows of tourism.

The dynamics of the system helped to identify the variables used to construct the causal loop diagram. One of the relatively recent, especially exposed and practically proven scientific methods is the simulation modelling of system dynamics, developed by the renowned professor Forrester[8] at the prominent world science centre for development of management science - Sloan School of Management (MIT). This key text on system dynamics illustrates how behaviour is determined by structure. This book covers the dynamics of feedback, models and simulation, equations and calculations, flowcharts, information links, integration and much more. In this paper, the business system is defined as a global model of integral nautical and tourist services (from berths as a basic service to all other additional services). The subsystem of investment in new capacities, such as sports and additional capacities, will be determined by an exogenous variable of value for investment in new capacities.

Focusing tourism growth on local needs, interests and constraints can greatly increase the value of community tourism and help create a sustainable industry. As such, it is useful not only to understand the three pillars of sustainability, but also analyse the complexity involved using different assessment tools. Therefore, a better

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[6] Intended as the deployment of customer loyalty.

[7] For example, hotel employees spend their income on accommodation, food, transportation, etc. in their local area.

[8] Jay Wright Forrester was a leading American computer engineer and systems scientist. He was a professor at the MIT Sloan School of Management.

understanding of the tools and processes of system dynamics is a useful weapon for minimizing the problems associated with coastal sustainable development and determining the exact variables that cause negative impacts on society, economy and environment. Evaluating such an approach will result in a cleaner environment and a better quality of life for people living near coastal areas. Accordingly, the model proposed in this paper provides the analysis of the complexity of tourism activities in coastal areas and may be a starting point for systemic impact analysis. Travel organizations can increase your level of creativity using people who have a proactive personality. Employees with a proactive personality are effectively involved in sharing information that can lead to a friendly work environment. Creativity, on the other hand, is a dynamic factor that must be integrated into its process characteristics. As employees of the tourism industry, compared to other organizations and industries, will feel more stress in their work environment, managers should constructively and precisely expand the positive work environment to encourage creative people, creative circulation and processes, creative products and performance through employee awareness, leveraging the innovative efforts of people with a negative personality at a time when employees are experiencing problems while building a creative process.

5. Conclusion

Nautical tourism initially developed spontaneously and uncontrollably, being under the constant influence of ever-increasing demand. Nautical tourism has, in some cases, created environmental degradation and intense social conflict. The analysis revealed a five-dimensional structure of yachting experience, where three dimensions had an asymmetrical impact on tourists' global judgment of their sailing experience. It is important to note that the experience on the land destination has become the factor that has the greatest potential to influence the overall experience of tourists. This is despite the fact that the attributes underlying this dimension are not directly related to the primary motive of shipping and navigation. At the same time as the growing economic importance of nautical tourism, there is an increased awareness of the sensitivity of marine environment. The view of tourists influenced the attitude towards environmental problems. The development of nautical tourism creates a wide range of both positive and negative impacts. Numerous papers have reported that pleasure cruising is becoming increasingly popular. For the most part, cruising has become a more leisure experience rather than a destination-oriented trip. The growth of commercial air travel made boat travel more of a choice than a necessity, which has ultimately benefited the cruise industry by allowing connections between a wider market of potential passengers and major boarding ports. The nature of the development and evolution of a tourist destination has profound implications not only for public authorities as an aid to control and planning, but also for all destination stakeholders. Here, the tourist destination is analysed as a dynamic complex system, developed with a range of techniques and methods drawn from the area. Recent research has shown that system dynamics have predictable properties that can greatly affect overall dynamic behaviour and explain and influence many processes from idea propagation, over robustness, to external disturbances and optimization of relationships among nautical components. In doing so, these techniques of analysis can essentially be considered as a diagnostic method for collecting and analysing data on relationship patterns between people in groups or between organizations. They provide a look at relationship diagrams that can give tourism industry managers a strong influence to improve information flow and target opportunities where the flow may have the most impact on regulatory or business activities. The main aim of this paper was to apply system dynamics methods and techniques to study the evolution of the destination system and to simulate process dynamics such as information and knowledge dissemination, and optimization of efficiency. The first part of the paper dealt with the theoretical background of the paper itself. Most reviewed are recent findings from systems theory research. These static and dynamic characteristics of components and major processes that can occur (robustness related to external or internal shocks and knowledge and information dissemination) are discussed. This paper introduces models and metrics of the larger literature on the subject based on their recognized importance for assessing the structural characteristics of the network or because they are considered particularly suited to the objectives of this paper.

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Is Business Analytics A Chance or A Challenge for Higher Education Institutions in The Academic Capitalism Era?

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Abstract

Today higher education is a highly competitive area that is shaped by academic capitalism. In this era, higher education institutions have become business-like organizations that they have a new management approach named new managerialism. Academic capitalism and new managerialism depend on applying private-sector practices such as performance management and strategic planning to higher education institutions. These managerial tools require data-driven decision making at higher education institutions. Thus, business analytics became a significant issue in higher education. Although some universities utilize business analytics successfully, most of them are lack analytics. The study aims to discuss the higher education institutions' situations in terms of business analytics and to find out why business analytics is a challenge for some universities and not for others. For that purpose, analysis of secondary research data based on literature review revealed the factors that affect higher education institutions in terms of business analytics.

Keywords: *Business analytics, academic capitalism, new managerialism, higher education institutions*

1. Introduction

The knowledge economy that occurred by globalization and the developments in technology in the last decade of the 20th century brought higher education as a significant issue in the international economic area [1]. In the knowledge economy, knowledge is a kind of raw material that should be processed and transformed into a service or a product [2]. Higher education institutions play a critical role in this transformation. The knowledge transformation provides corporate partnerships and funding models for higher education due to the neoliberalism politics behind globalization. Neoliberalism emphasizes minimalist states that shrink public funding [3]. However, the financial needs of higher education have increased due to the requirements of the knowledge economy. So, higher education institutions start to act like businesses. To act like businesses addressed corporate partnerships and the funding models for higher education institutions and the issues belonging them like accountability and transparency. Besides, by technological developments, new education models like online education revealed. The knowledge economy depending on globalization increased student diversity and the number of students in higher education. Thus, the new economy and its requirements brought changes in higher education. Daniel groups the changes in higher education into four categories; economic, technological, social, and educational [4]. According to Daniel [4], funding models for higher education institutions and increased regulatory bodies, globalization, corporate partnerships, accountability, and transparency concepts are economic changes in higher education. Emerging tools and platforms and new data sources related to them are technological changes in higher education. Diversity of students is a social change and changing learning needs with performance measures and assessment are the educational changes in higher education.

The changes in higher education make higher education a new competitive environment where higher education institutions start to have market-like behaviors. Thus, research projects are commercialized, entrepreneurial activities have increased at universities, and the management of higher education institutions also changed. Strategic planning, performance management became the main issues of the managers of higher education institutions. All these transformations are discussed with academic capitalism and new managerialism concepts in literature. The consequences of academic capitalism and new managerialism brought the necessity of making a fast and the right decision in a short time to higher education institutions' managers. As a transforming to a business-like organization, higher education institutions try to find a way like businesses to adopt the new

competitive higher education environment. Especially for semi-structured or unstructured decisions, higher education institutions borrow business intelligence systems and business analytics applications from the business world and try to apply them to higher education. Therefore, business analytics has become a crucial issue in higher education.

This study which is based on a part of a Ph.D. dissertation about business intelligence and business analytics applications at university management tries to find out the current situation of higher education institutions in terms of business analytics and explores the factors about business analytics that influence the higher education institutions. For that purpose, first, academic capitalism, new managerialism, and business analytics concepts are introduced that are the theoretical background of the study. Then, business analytics for higher education institutions is discussed, and the research problem of the study is structured. According to the methodology, the study tries to answer the research problem. Finally, the results are discussed and suggestions for future research are presented.

1.1. Academic Capitalism and New Managerialism

Market-like behaviors of higher education institutions are defined as academic capitalism in literature [5]. In this context, increases in part-time faculty, competition for research and/or training grants, patenting, consulting, copyrighting, courseware development, the elimination of programs which does not have a value to market, pharmaceutical patenting, university-industry partnerships are all considered under the academic capitalism concept [6]. After Hackett [7] stated the academic capitalism in his study, Slaughter and Leslie [5] defined it. Then, Slaughter and Rhoades [2] studied the theory of academic capitalism. By the theory of academic capitalism, Slaughter and Rhoades [2] try to explain the phenomena in today's higher education focusing on knowledge-based economy networks such as organizations like Internet2, development agencies, or technology transfer offices. According to Slaughter and Rhoades [2], through these knowledge-based economy networks, all the partners of higher education – from students to university managers – create the academic capitalist knowledge/learning regime and take a part in it by their marketing and consumption behaviors.

Today, most of the higher education institutions have technopark, technology transfer offices, and lead the transformation of the knowledge to a product or a service. Most of the academic staff of the universities set businesses through start-up companies in the technopark. Besides, Pusser, Slaughter, and Thomas [8] found out that the members of the board of trustees of many universities in the United States are also the general managers or board members of companies around the world. Hence, academic work has changed.

Academic work that changes with academic capitalism needs a new way to organize and manage new forms of work [9]. That points to a new management approach for higher education institutions which is defined as new managerialism in literature. According to Olssen and Peters [10] , the new managerialism approach sees higher education as an input-output system that can be reduced to an economic production function and applies private-sector techniques to the management of higher education institutions. Today, strategic management, performance management, quality assurance systems are the main tools that are utilized at higher education institutions as private sector techniques.

The new managerial tools, such as performance management and strategic planning, brought the data analysis issues to the agendas of the higher education managers. Besides, quality assurance systems in higher education require gathering and analyzing institutional data [11]-[12]. As a result of academic capitalism and new managerialism, business analytics became a solution for higher education institutions

1.2. Business Analytics

Business analytics is a part of the business intelligence system [13]-[15]. Business intelligence refers to a framework that includes the technologies, processes, and applications necessary to transform data into information and knowledge, and provides insight to support managerial decision making or operational control [13] ,[15] ,[16] . This framework generally consists of three layers in terms of gathering and processing data. The first layer is the data acquisition layer where the data is gathered from various systems through the extract-transform-load process; the second layer is the data storage layer where the gathered data is stored in a data warehouse; the third layer is the analytics layer where the data is processed and analyzed [17]-[19]. In this framework, business analytics correspond to the third, analytical layer.

Business analytics try to find out what happened in the past and forecasting future situations and determining the optimized solutions for the possible expected cases through mathematical and statistical techniques, data mining, simulation as well as reports and graphs. In literature, business analytics is generally considered in three categories: Descriptive analytics, predictive analytics, and prescriptive analytics [20]-[21]. Descriptive analytics tries to find out what happened in the past and what is happing now by analyzing historical data. Dashboards are the most popular descriptive analytics applications. In higher education, Purdue University (https://www.purdue.edu/datadigest/) dashboards are one of best descriptive analytics applications in higher education. Predictive analytics try to predict the future by using predictive models based on historical data. Course Signal project of Purdue University is one of the successful predictive analytics applications in higher education. The course signal tries to find the students at risk for the selected course and allow faculty members to take precautions for these students [22]. Prescriptive analytics is a kind of recommendation system. Like predictive analytics, prescriptive analytics uses historical data and predicts future situations but besides, it recommends the optimum solution for the predicted situation. One of the best prescriptive analytics applications in higher education is the course recommendation system of Austin Peay State University. The system analyses hundreds of thousands of students' past data and offer the most suitable courses to student depending on the students' ability and the universities graduation rules.

2. Business Analytics for Higher Education Institutions

Strategic planning and performance management have been applied widely in higher education as the consequences of new managerialism and academic capitalism. These management tools depend on collecting and analyzing institutional data. Therefore, gathering institutional data from various information systems and making analysis became a critical issue for higher education managers. The research conducted by ECAR (EDUCAUSE Center of Research) in 2002 revealed that universities have started to set up business intelligence systems and develop business analytics applications due to that their current information systems do not meet their reporting and analytical requirements [23]. Some examples of the business analytics applications that are utilized at universities are presented in Table 1.

Table 1. Business Analytics Applications at Universities

University	Business Analytics Application	Reference
Baylor University	An enrollment prediction model based on eight identified variables (Attendance of a premier even, campus visit, extracurricular interest, high school attended, mail qualifying score, SAT score, number of self-initiated contacts, Tele counselor score) was developed. Scores from the predictive model are added to the student database where admissions staff can query to identify the students most likely to be admitted.	[24]
University of Alabama (UA)	A retention model with eight variables (UA cumulative GPA, English course, English course grade, Distance from UA campus to home, Race, Math, course grade, Total earned hours, Highest ACT score) was developed by using statistical techniques such as logistic regression, decision trees, and neural networks. The model is used with pre-enrollment data and an aggregate score which was developed in consultation with the university registrar. UA can identify 150–200 freshmen each year who are not likely to return for their sophomore year.	[24]
Northern Arizona University (NAU)	A predictive model to identify which students will benefit from which resources were developed. The resources and services of NAU were categorized into five: academic service, recreational resources, social resources, academic referrals, and advising/career sessions. The data from these sources was achieved by usage records created from student ID card swipes by service offices and at campus activities and events or from manual rosters. Levels of risk which were established by admissions test scores, high school GPAs, and psychosocial factors which were measured by NAU's deployment of the ACT Student Readiness Inventory were used in the model. First-year student GPAs and enrolment retention status was measured as outcomes of the model. On average, those who used four services increased GPAs by 0.280 points; and students who were high-risk and used four services increased GPAs by 0.460 points. Academic referrals and advising/career sessions had the greatest impact on retention.	[24]

Purdue University	A student success system called "Course Signals" was developed on a predictive analytic model that contains elements from the academic technologies and the student information system. The algorithm of the model runs on real-time data and provides a risk indicator (a red, yellow, or green traffic signal) for each student as a guide to faculty members. According to the indicators feedbacks can be given to students to improve their success, precautions can be taken by faculty members, so the system improves the institution's retention and graduation rates over time.	[22],[25]
Austin Peay State University	A course-recommendation system that pairs current students with the courses that best fit their talents and program of study for upcoming semesters was developed. Hundreds of thousands of past students' grades with each student's transcript were combined inside the model for making recommendations for each student. To rank courses, predictive analytics techniques based on grade and enrolment data were used. A user interface was developed for students to make the choices in which they would have the most productive success. The interface also provides a major recommendation system for a student who is yet to choose a major or is thinking about changing his/her major. The system provides a list of majors in which that student is predicted to be the most academically successful and information about degree pathways, prospective career paths, job availability, statistics for graduates in majors. The data-mining techniques were used for the system.	[26]

Source: [27]

Besides the applications at universities, in literature also, the issue has been addressed in terms of conceptual perspective. Although business analytics is grouped as descriptive, predictive, and prescriptive, in higher education, it is named in various concepts such as academic analytics and learning analytics. Ülker & Coskun [28] evaluate the different business analytics concepts defined in the literature and propose university analytics. During the developments in literature and practice at higher education institutions, the survey conducted by ECAR revealed that most of the higher education institutions are lack business analytics [29]. The following finding of the ECAR survey was interesting:

"80% of respondents to the ECAR analytics survey are concerned that the higher education community doesn't know how to use data to make decisions." [29]

So, although business analytics is the key tool for higher education institutions in the academic capitalism era, and there are successful examples like in Table 1, there are many higher education institutions that are not able to utilize business analytics also. According to this situation, it can be said that for the institutions that are lack analytics, business analytics is a kind of challenge in the changing higher education environment. Whereas for institutions like in Table 1, they have a chance to meet the new requirements that the new economy brought and overcome the issues they must deal with due to academic capitalism. Hence, business analytics is a kind of chance for higher education institutions as in Table 1.

3. Methodology

In this study, the business analytics in higher education are discussed in detail according to the application at universities and the results of surveys that were conducted by some organizations like EDUCAUSE. According to the discussion the research question is structured, and the study is aimed to answer the research question. During the discussion about business analytics in higher education, it was seen that on one side there are powerful, beautiful examples of the application of business analytics which shows the business analytics is a chance for higher education in the academic capitalism era, on the other side there are many higher education institutions which cannot utilize business analytics that show it is a challenge for the institutions. So, in some cases business analytics can be a chance, in most cases can be a challenge. The problem here is, what makes business analytics a challenge or a chance for higher education institutions. Some factors should be affecting business analytics for higher education. To explore the factors the secondary data were analyzed in the study. Concerning secondary data, journals, articles, reports, thesis about analytics in higher education were studied by benefiting from the international literature, ProQuest Dissertations and Theses online database, and Google Scholar. Through the research data, the literature review is defined, and it provides to understand what makes business analytics a challenge or a chance for higher education institutions and which factors affect business analytics in higher education.

4. Results

The study aimed to reveal the reasons why most of the higher education institutions are lack analytics. For that purpose, the factors that affect the higher education institutions are presented by the detailed literature review and the analysis of relevant publications of the EDUCAUSE Center of Research. Thus, the factors in Table 2 are revealed. According to the success of the factors in Table 2, business analytics can be a chance or a challenge to a higher education institution.

Table 2. The Factors That Affect Business Analytics in Higher Education

Factor	Reference
Organizational culture	[29]-[37]
Top management support	[29], [30], [37], [38]
Human resources	[30],[31],[32],[35]
Investment	[29], [30], [32], [33]
Infrastructure	[29], [35], [36], [30]
Data Sources	[29], [31], [35], [36], [38]
Data Management	[29], [30], [31], [35], [36], [38]
Analytical Tools	[29], [30], [32], [35], [36], [37], [39]

According to Table 2, organizational culture is about the decision-making type of higher education institutions' top managers. At the institutions where data-driven decision making is an organizational culture, the adaptation of business analytics is easier than other institutions such as Arizona State University. So, business analytics can be a chance for the institutions that have data-driven decision-making culture but, at the institution that doesn't have a data-driven decision making culture, business analytics can be a challenge for the institution. Besides, decision-making culture is related to top management also. For example, "*At Arizona State University, the president is more likely to support ideas and plans if they are presented with appropriate data.*" [29].

Top management support and the data-driven decision-making culture of the organization also brings investments in analytics. Investment is not only about the funds for analytics. It is about qualified staff for analytics also. According to the studies in literature, higher education institutions need skilled and adequate human resources [31],[35],[29],[30]. The requirement of human resources for analytics has several dimensions. One of the needs is to develop and maintain business analytics applications. Another one is to train the administrative or academic staff of the higher education institution for an analytical tool or an application [35]. Besides, according to the results of the ECAR (EDUCAUSE Centre of Research) survey, "*75% of respondents need more staff with data governance capabilities*" [29] that is related to data management. Therefore, the higher education institutions that have adequate staff for analytics have a chance to be successful in business analytics. In other words, business analytics can be a chance for these institutions instead of a challenge.

As mentioned in the business analytics section of this paper, business analytics is a part of the business intelligence system. Thus, the infrastructure that enables institutions to achieve knowledge affects the utilization of business intelligence and business analytics [36], [29]. At that point, it can be remarked that, for the higher education institutions which have enhanced infrastructure, business analytics is a chance, but, for the others, it can be a challenge due to the costs of obtaining the knowledge. Besides infrastructure, data sources of higher education institutions affect business analytics also. In the institutions that have an integrated information system such as ERP, it is easier to develop a business analytics application due to the data quality and accuracy issues. Whereas, at the institutions that have an unintegrated various information system, it is more expensive to utilize business analytics due to the cost of gathering the qualified data. To gather the data in different systems is related to the data management policies of the institution also. Hence, for the higher education institutions that have data management policies, proper data sources, and enhanced infrastructure to support them, business analytics is a chance to handle the data and reporting related problems of the institutions. Otherwise, it really can be a challenge for higher education institutions that do not have any data management policy, have many unintegrated information systems, and weak infrastructure. In literature, one of the issues about utilizing

business analytics in higher education is analytical tools. Although all the other factors in Table 2 influence business analytics success or to be a challenge, analytics need tools. Investment in analytical tools is also a critical point to utilize business analytics. In literature, the studies ([39],[35],[37]) revealed that the ease of use of the analytical tools is significant for the users at higher education institutions. The analytical tool is also relevant to technical infrastructure due that the analytical tools are the major appliance to achieve the knowledge [36],[29]. Besides, unless higher education institutions utilize business analytics efficiently, they can have some tools to analyse data [32]. Thus, using these tools in the right way is significant.

As a result, the factors in Table 2 affect higher education institutions the lack of business analytics. At the same time, these factors in Table 2 can be the reasons for business analytics as a chance for a higher education institution also. If a higher education institution wants to handle its problems such as the effectiveness and efficiency of the faculties or student retention, it should consider the factors in Table 2. In this case, business analytics can be a chance for the institution.

5. Discussion

In literature, some studies ([36],[38]) consider the issue in terms of several dimensions such as organizational, social, or technical dimensions. If the factors presented in Table 2 are considered in terms of these dimensions, they can be grouped as organizational and technical factors. According to these grouping, organizational culture, top management support, human resources, and investment can be considered as organizational factors whereas, infrastructure, data sources, data management, and analytical tools can be considered as technical factors. Besides, the result of the study shows that there is a relationship between factors like human resources and investment. So, due to the factors that are related to each other and depending on the ECAR survey result showing higher education institutions need more staff who have data governance capabilities, it is considered that organizational factors affect technical factors. On the other way, these factors correspond to some dimensions of the maturity models like the ECAR Analytics Maturity Model. Maturity models aim to assess organizations in terms of business analytics. Davenport and Harris [13] define the organizations in five maturity levels according to their usage of analytics. The first level of their maturity model encapsulates the organizations which are analytically impaired. Based on this, Guitart and Conesa [40] say that most of the universities are analytically impaired but there are some in the second level where analytics is locally utilized for some purposes such as determine the students at risk, plagiarism detection. According to Guitart and Conesa [40], there are few higher education institutions at the third level. At the third level, institutional data is analysed regularly, and it is aimed to utilize analytics completely. Davenport and Harris [13] say the fourth level is the analytical companies and the fifth level is analytical competitors. Guitart and Conesa [40] claim that it is hard to think of a higher education institution at the fourth or fifth level. According to these discussions in literature, to be successful or fail in most of the factors in Table 2 changes the level of analytics maturity of the higher education institutions.

6. Conclusion

Business analytics has become an important issue in higher education since higher education institutions have transformed into a business-like organization due to the academic capitalism era. In this era, accountability, competitiveness, and performance are important concepts for higher education institutions. These concepts rely on data. Thus, collecting and analyzing institutional data is crucial for a higher education institution. Hence, business analytics is a key tool for achievement. When the business analytics in higher education is evaluated although there is some successful application at some universities, generally, "*higher education is data rich but information poor*" [28]. Therefore, this study, it is aimed to explore the reasons for most higher education institutions to be poor in terms of information whereas there are successful cases such as Purdue University. When the study was conducted, it was seen that some factors affect higher education institutions in terms of business analytics. The factors are presented in Table 2. It was also revealed that these factors are related to each other. For example, investment embraces human resources. The investment is about not only funds but also about investment in human resources. Similarly, data management is related to data sources. Besides, the factors are grouped into organizational factors and technical factors, and organizational factors affect technical ones. Although the study tried to reveal the factors about business analytics for higher education institutions, every factor cannot have the same effect to be a chance or challenge of business analytics. Thus, for future studies, the suggestion is to explore the priority level of the factors in Table 2. Besides, to examine if priority levels change according to the higher education institution types or higher education systems can be another suggestion for

future studies. George [1] states that there are two governance systems for higher education for development. The first one is the state-centric model, the second one is the neo-liberal model. Although George [1] states these models, he also emphasizes a country can display the combination of the two models according to the issues. Thus, in some cases where the neo-liberal model is a raid, the priority level of the factors in Table 2 can be different from the cases where the state-centric model is widely accepted. To consider the higher education governance system while exploring the issues about business analytics can provide more accurate information.

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Conceptual foundations of higher education transformation in the Republic of Uzbekistan in the conditions of the formation of the digital economy

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Abstract

This article is devoted to the main directions of the transformation of higher education in the Republic of Uzbekistan in the context of the formation of the digital economy. The author examines in detail the modern ways of modernizing higher education based on the study of legal documents, scientific research of modern scientists and their own work experience in a higher educational institution. In addition, this article shows innovative solutions to improve higher education in the context of the formation of the digital economy.

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