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New and Challenging Perspectives in Science Education: Relationship between Involved Parties, Intellectual Property and Intellectual Capital, and Steps Identified in Intellectual Capital Study

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Abstract

Nowadays, due to individuals' continuous seek for discovering and implementing winning sustainability strategies for organizations worldwide, specialists have identified a distinct need for addressing new and challenging perspectives in science education. Under these given circumstances, organizations prime concern should become the relationship between involved parties, intellectual property and intellectual capital, thus being able to focus on interesting practices capable of promoting responsible science education – as required by the European Commission's expert group on science education. In addition, there exists a distinct concern to transform all organizations towards a more sustainable business model, which leads to the importance of identifying the steps in intellectual capital study, thus maintaining organizations' competitive edge and ensuing performance of organizations' sustainability programs. This research is aimed at presenting, on the one hand, new and challenging perspectives in science education and is centered on identifying, on the other hand, new and coherent business strategies during the global pandemic, based on discoveries emerged from the organizations intellectual capital study. Also, this work is intended to present the implications of the COVID-19 pandemic progress in refining the organizations' methods for solving key financial problems, analyzing alternatives in decision making, formulating value-maximizing competitive strategies and taking a value-based approach to marketing management relevant business skills. The research methods used in order to generate the data acknowledged in this paper refer to both quantitative and qualitative analysis, namely: data selection and evaluation, descriptive statistics, survey and questioner design, and interview design and techniques.

Keywords: *Intellectual capital, human capital, performance, higher education institutions, intangible variables, quality of education, science education, economics education, quantitative and qualitative analysis*

1. Introduction

Recent developments in the field of economic sciences and business administration have led to a renewed interest in analyzing and explaining the complex changes that take place nowadays in our society especially as a result of individuals' continuous seek for discovering and implementing winning sustainability strategies for organizations worldwide [13, 14].

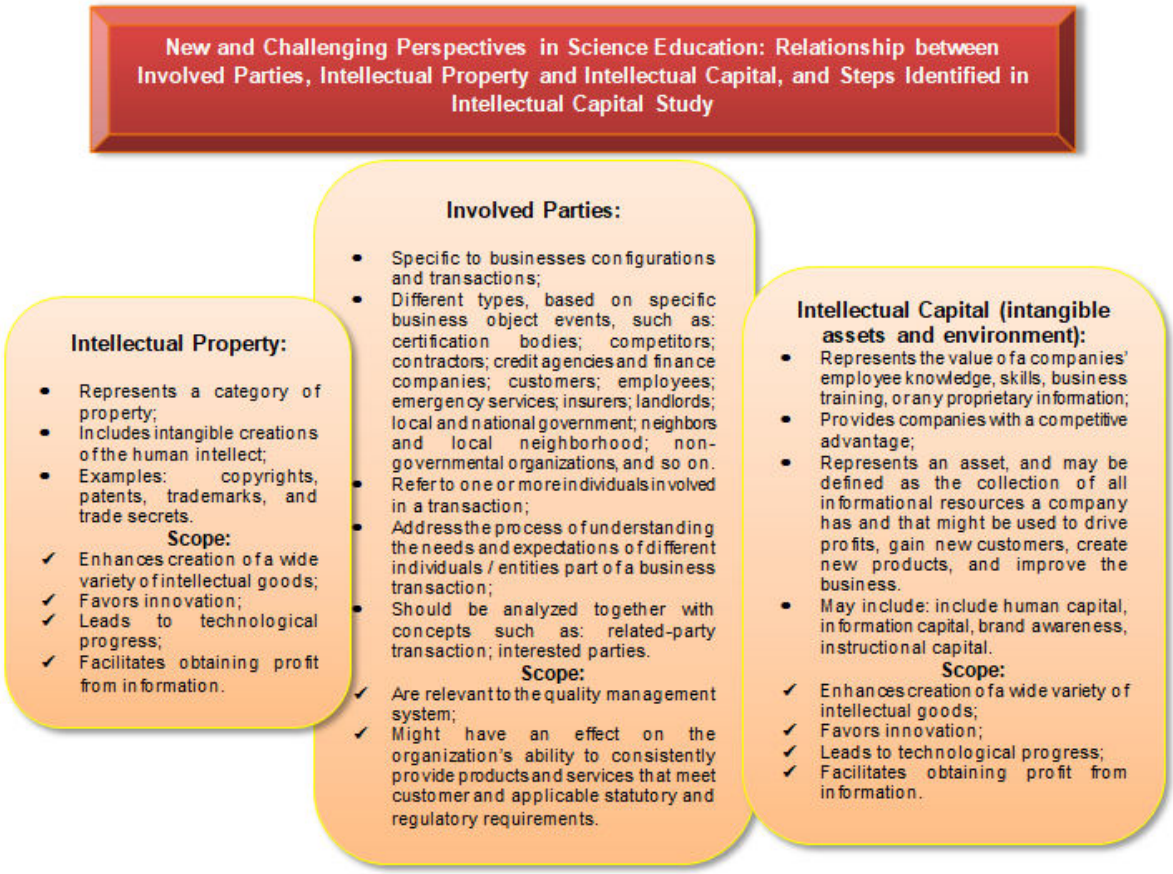
In this matter, reputed specialists have identified a distinct need for addressing new and challenging perspectives in science education, especially in the context in which organizations prime concern should become the relationship between involved parties, intellectual property and intellectual capital, in this way being able to focus on interesting practices capable of promoting responsible science education – as required by the European Commission's expert group on science education [3, 4].

As a consequence, there exists a distinct concern to transform all organizations towards a more sustainable business model, which leads to the importance of identifying the steps in intellectual capital study, thus maintaining organizations' competitive edge and ensuing performance of organizations' sustainability programs, and striving to understand the implications derived from the influence of intellectual capital, human capital, and intangible variables, on performance, in general, and on higher education institutions, quality of education, science education, economics education, in particular (by using also the instruments of quantitative and qualitative analysis) [1, 2].

2. Literature review

A large and growing body of literature has investigated contemporary economy through a multiple perspective: firstly, focusing on new and challenging perspectives in science education; secondly, addressing the relationship between involved parties, intellectual property and intellectual capital; and thirdly, emphasizing the steps identified in intellectual capital study (see Figure 1) [5-9].

Fig.1. Relationship between Involved Parties, Intellectual Property and Intellectual Capital



Legend: This figure underlines the main components that constitute the relationship between involved parties, intellectual property and intellectual capital.

3. Methodology

To date, various methods have been introduced and described to measure the new and challenging perspectives in science education, with a particular accent on the relationship between involved parties, intellectual property and intellectual capital, and with a keen interest in stressing the steps identified in intellectual capital study [6-14]. This study is aimed at presenting, on the one hand, new and challenging perspectives in science education and is centered on identifying, on the other hand, new and coherent business strategies during the global pandemic, based on discoveries emerged from the organizations intellectual capital study. What is more, this work is intended to present the implications of the COVID-19 pandemic progress in refining the organizations' methods for solving key financial problems, analyzing alternatives in decision making, formulating value-maximizing competitive strategies and taking a value-based approach to marketing management relevant business skills. Thus, the research methods used in order to generate the data acknowledged in this paper refer to both quantitative and qualitative analysis, namely: data selection and evaluation, descriptive statistics, survey and questioner design, and interview design and techniques.

4. Data analysis and discussions

In terms of data analysis and discussions this scientific paper suggestively entitled "New and Challenging Perspectives in Science Education: Relationship between Involved Parties, Intellectual Property and Intellectual Capital, and Steps Identified in Intellectual Capital Study" points out the

valuable results obtained using data selection and evaluation, descriptive statistics, survey and questioner design, and interview design and techniques in both public and private higher education institutions in Romania (see Figure 2 and see Figure 3) [19-24].

Fig.2. New and challenging perspectives in science education: steps identified in intellectual capital study

Legend: This figure underlines new and challenging perspectives in science education and steps identified in intellectual capital study in both public and private higher education institutions in Romania.

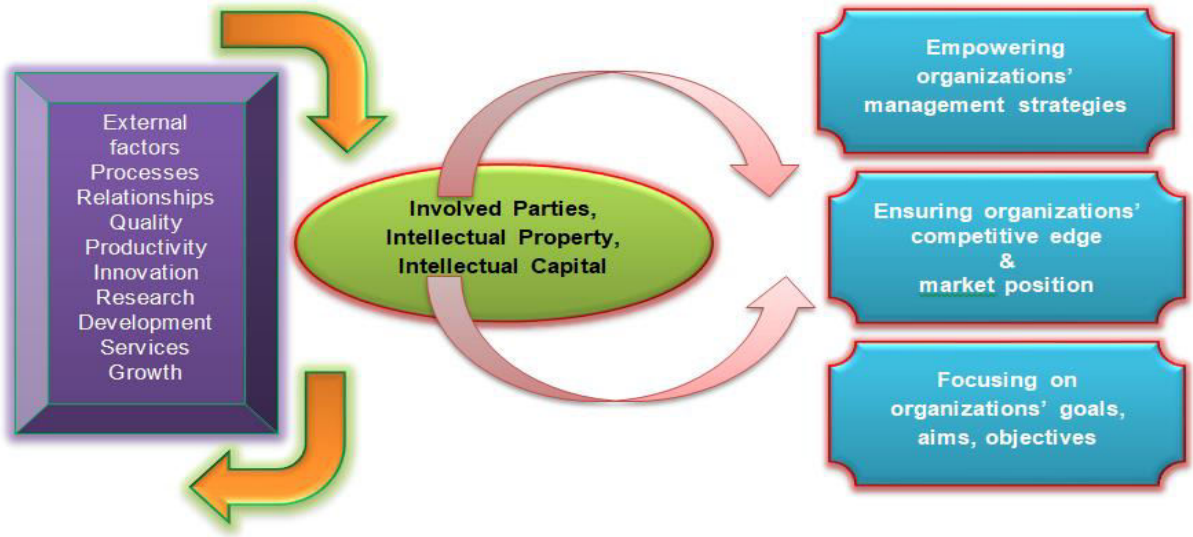
Fig.3. A scientific model capable to value intellectual capital in higher education institutions

Legend: This figure describes a scientific model capable to value intellectual capital

5. Conclusions, limitations and future work

The general conclusions of this study are shown in the figure below (see Figure 4). These results come to complete previous works and research on involved parties, intellectual property and intellectual capital [1-3], as well as the interpretation of steps identified in intellectual capital study in our knowledge based society [14-24].

Fig.4. Conclusions: Importance and role of involved parties, intellectual property and intellectual capital, and key steps identified in intellectual capital study in our knowledge based society



Legend: This table underlines the results derived from analyzing the importance and role of involved parties, intellectual property and intellectual capital, and key steps identified in intellectual capital study in our knowledge based society.

6. References

[1] European Commission (2011), European Commission Supporting growth and jobs – An agenda for the modernisation of Europe's higher education systems, Luxembourg: Publications Office of the European Union, 32 pp., ISBN 978-92-79-21186-7, doi: 10.2766/17689.

[2] European Commission (June 2015), Strengthening teaching in Europe: New evidence from teachers compiled by Eurydice and CRELL, https://ec.europa.eu/assets/eac/education/library/policy/teaching-profession-practices_en.pdf (accessed online on 15th December 2020).

[3] European Commission/EACEA/Eurydice (2019). Digital Education at School in Europe. Eurydice Report. Luxembourg: Publications Office of the European Union, https://eacea.ec.europa.eu/national-policies/eurydice/sites/eurydice/files/en_digital_education_n .pdf (accessed online on 15th December 2020).

[4] European Commission (2020), Education and Training: Equal access to quality education is one of the EU's central goals, https://ec.europa.eu/education/node_en (accessed online on 15th December 2020).

[5] IAS 38 Intangible Assets (2017), https://www.pkf.com/media/10031776/ias-38-intangible-assets-summary.pdf (accessed online on 15th December 2020).

[6] International Federation of Accountants (IFAC) (2018), https://www.ifac.org/ (accessed online on 15th December 2020).

[7] Magrassi P., (2002) "A Taxonomy Of Intellectual Capital", Research Note, Gartner Group, Stamford, USA.

[8] Marr, B., D. Gray, and A. Neely (2003), "Why Do Firms Measure Their Intellectual Capital?, Journal of Intellectual Capital, October, pp. 441-464.

[9] Mhedhbi I., (2013) "The Company's Intellectual Capital: Interaction and Value Creation Case of Tunisian Companies", Journal of Asian Business Strategy, Vol. 3, No. 1, pp. 1-10.

[10] Organization for Economic Co-operation and Development (OECD) (2001), "The Well-Being of Nations. The Role of Human and Social Capital, Centre for Educational Research and Innovation", http://www.oecd.org/site/worldforum/33703702.pdf (accessed online on 15th December 2020).

[11] Organization for Economic Co-operation and Development (OECD) (2013). Supporting Investment in Knowledge Capital, Growth and Innovation. OECD Publishing.
[12] Organization for Economic Co-operation and Development (OECD) (2016a), "Better Policies for 2030. An OECD Action Plan on the Sustainable Development Goals", https://www.oecd.org/dac/Better%20Policies%20for%202030.pdf (accessed online on 15th December 2020).
[13] Organization for Economic Co-operation and Development (OECD) (2016b), "Better Policies For 2030: An OECD Action Plan on the Sustainable Development Goals", https://www.oecd.org/dac/OECD-action-plan-on-the-sustainable-development-goals-2016.pdf (accessed online on 15th December 2020).
[14] Organization for Economic Co-operation and Development (OECD) (2018), "The OECD measurement of social capital project and question databank, Centre for Educational Research and Innovation", http://www.oecd.org/sdd/social-capital-project-and-question-databank.htm (accessed online on 15th December 2020).
[15] Popescu, V.A., Popescu, C.R.G., Popescu, G.N., "Education and New Technologies - Case Study on the Romanian Society", 2th edition of the International Conference the Future of Education, Pixel, Florence, Italy, 7-8 June, 2012, Conference book "The Future of Education Conference Proceedings 2012", Simonelli Editore University Press, Volume 2, pp. 124–127, ISBN 978-88-7647-808-6.
[16] Popescu, V.A., Popescu, G.N., Popescu, C.R.G., "Innovation's Role in Nowadays Society and the Ways to Generate Competitive Intelligence and Accountability: Case of Romania", IBIMA Publishing Journal of Innovation & Business Best Practices, http://www.ibimapublishing.com/journals/JIBBP/jibbp.html Vol. 2012 (2012), Article ID 722585, 11 pages, DOI: 10.5171/2012.722585.
[17] Popescu, V.A., Toiba, D., Popescu, C.R.G., "Virtual Learning Communities – a Study Case on Romania's Nowadays Situation", 4th edition of the ICT for Language Learning Conference International Conference on the Future of Education, Pixel, Florence, Italy, 16-17 June, 2011, Conference book "The Future of Education Conference Proceedings 2011", Simonelli Editore University Press, Volume 1, pp. 185–188, ISBN 978-88-7647-647-1.
[18] Popescu, C.R.G. & Popescu, G.N. (2019). The Social, Economic, and Environmental Impact of Ecological Beekeeping in Romania. In Popescu, G. (Ed.), Agrifood Economics and Sustainable Development in Contemporary Society (pp. 75-96). IGI Global. http://doi:10.4018/978-1-5225-5739-5.ch004.
[19] Popescu, C.R.G.; Popescu, G.N. "An Exploratory Study Based on a Questionnaire Concerning Green and Sustainable Finance, Corporate Social Responsibility, and Performance: Evidence from the Romanian Business Environment", Journal of Risk and Financial Management, 2019, vol. 12(4), pages 1-80, October, https://doi.org/10.3390/jrfm12040162.
[20] Popescu, C.R.G. "Corporate Social Responsibility, Corporate Governance and Business Performance: Limits and Challenges Imposed by the Implementation of Directive 2013/34/EU in Romania", Sustainability, 2019, vol. 11(19), pages 1-31, September, https://doi.org/10.3390/su11195146.
[21] Popescu, C.R.G. "Sustainability Assessment: Does the OECD/G20 Inclusive Framework for BEPS (Base Erosion and Profit Shifting Project) Put an End to Disputes Over The Recognition and Measurement of Intellectual Capital?", Sustainability, 2020, vol. 12, 10004, pages 1-22, November, https://www.mdpi.com/2071-1050/12/23/10004.
[22] Popescu, C.R.G. (2020). Analyzing the Impact of Green Marketing Strategies on the Financial and Non-Financial Performance of Organizations: The Intellectual Capital Factor. In Naidoo, V., & Verma, R. (Eds.), Green Marketing as a Positive Driver Toward Business Sustainability (pp. 186-218). IGI Global. http://doi:10.4018/978-1-5225-9558-8.ch008.
[23] Popescu, C.R.G.; Bança, V.C., "Performance Evaluation of the Implementation of the 2013/34/EU Directive in Romania on the Basis of Corporate Social Responsibility Reports", Sustainability, 2019, vol. 11(9), pages 1-16, May, https://doi.org/10.3390/su11092531.
[24] Tociu, Carmen & Robert, Szép & Anghel, Ana-Maria & Marinescu, Florica & Ilie, Mihaela & Holban, Elena & Ghita, Gina & Matei, Monica & Dumitru, F.D. & Iustina, Boaja Popescu & Moncea, Mihaela & Laslo, Lucian & Andreea Ioana, Daescu & Popescu, Cristina Raluca Gh. (2017). Possibilities for efficient use of valuable materials from aluminium slag to remove specific pollutants in Wastewater. Journal of Environmental Protection and Ecology. 18. 842-852.