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DEVELOPING DATA-DRIVEN FINANCIAL SKILLS IN HIGHER EDUCATION: A CASE STUDY FROM UNIVERSITY FINRA TUZLA

ABSTRACT:

Developing data-driven financial competencies has become a key requirement in contemporary higher education, particularly within dynamic and technology-oriented business environments. This paper presents a case study of the educational model implemented at the University FINRA Tuzla, where students integrate theoretical knowledge of entrepreneurship and financial management with practical, analytical, and communication skills through the development of a comprehensive business plan. The curriculum combines core concepts of financial management, investment planning, sources of financing, financial analysis, and the time value of money with applied tasks that require students to design and evaluate multi-year financial projections. Working with structured templates, analytical tools, and modern digital technologies, students learn to interpret financial data, quantify assumptions, and assess the financial sustainability of business ventures.

A central component of the learning process is the development of professional communication skills. Students present their business plans in a two-stage process—first to academic mentors and subsequently to representatives of the banking and business sectors. These presentations strengthen their ability to communicate complex financial models clearly, concisely, and persuasively. The educational model additionally incorporates ESG considerations, encouraging students to evaluate environmental and social impacts when developing business ideas.

The findings of this case study demonstrate that the integration of theoretical instruction, applied financial modeling, digital tools, ESG principles, and professional communication training enables students to develop balanced, practice-oriented financial competencies. This holistic approach equips graduates with the analytical, technical, and communicative skills necessary for

informed financial decision-making and successful participation in modern, data-driven business environments. The case study indicates measurable improvements in students' analytical accuracy, financial reasoning, and ability to present data-driven financial models to external evaluators.

Keywords: data-driven learning, financial competencies, business plan development, financial analysis, experiential learning

INTRODUCTION

Modern higher education increasingly requires teaching methods that combine theoretical knowledge with practical, real-world application (Kolb, 1984; Biggs & Tang, 2011). Responding to these demands, the University FINRA Tuzla has designed an integrated instructional model in which students, from the early stages of their studies, learn to identify business opportunities, analyze markets, and assess the financial viability of entrepreneurial ventures. A central component of this approach is the development of a business plan, completed as a joint project within the courses Foundations of Business Finance and Entrepreneurship, offered across five undergraduate study programs.

By embedding entrepreneurship and finance within a shared applied project, the University reinforces its commitment to developing students' entrepreneurial competencies and preparing them to initiate and manage business ventures. Through this process, students synthesize information from multiple domains, interpret data, and produce evidence-based conclusions, strengthening their analytical reasoning and readiness for professional challenges.

The project-based structure encourages critical thinking and problem-solving, while highlighting the interconnected nature of market analysis, resource allocation, financial planning, and long-term sustainability. In this way, the business plan serves as a pedagogical bridge between theory and practice, aligning the FINRA model with global trends that emphasize experiential learning, digital literacy, and data-driven decision-making. Students are further encouraged to integrate ESG principles—environmental sustainability, social responsibility, and good governance—ensuring that their business ideas reflect

both financial viability and modern standards of ethical and sustainable entrepreneurship.

This paper examines how the integrated FINRA model enhances students' financial competencies, focusing on data-driven reasoning, digital literacy, and applied entrepreneurial learning.

1. DEVELOPING FINANCIAL COMPETENCIES THROUGH DATA-DRIVEN LEARNING

Understanding the financial function of a company is a core competency necessary for analytical and data-driven decision-making. At the University FINRA Tuzla, financial education is designed to help students understand how businesses plan, finance, and evaluate their activities, while recognizing how financial decisions influence both operational efficiency and long-term strategy.

Students study the organization of the financial function, internal controls, and financial policy as the basis for decisions on investment, financing, risk, and capital structure. They also explore various sources of financing—own, borrowed, and specific forms—along with their advantages and costs (Rovčanin, 2010). By applying key financing principles related to liquidity and solvency, students learn to assess whether a business is financially sustainable.

The broader financial environment is also analyzed, including macroeconomic trends, regulation, and the functioning of financial markets in Bosnia and Herzegovina. European educational frameworks emphasize financial literacy and data interpretation as essential skills for young learners (European Commission, 2021).

A crucial analytical tool students master is the time value of money, enabling them to evaluate investments and calculate the cost of capital (Kalić, 2017). These competencies converge in the development of a financial plan, where students identify investments, select financing sources, and prepare projected financial statements. Through this process, they assess profitability and sustainability using data-driven reasoning.

Financial analysis strengthens their ability to evaluate liquidity, profitability, indebtedness, and efficiency, while the study of leverage enhances their understanding of risk–return relationships (Ivanišević, 2012). Practical work is supported by digital tools and financial modeling software, helping students

work with real data and apply technology-based analytical methods. This aligns FINRA's model with global educational standards emphasizing digital literacy and data-driven competencies (OECD, 2020).

2. PRACTICAL APPLICATION OF DATA-DRIVEN FINANCIAL SKILLS: FINANCIAL PLAN DEVELOPMENT

The development of a financial plan represents the most comprehensive stage of applied learning at the University FINRA Tuzla. After acquiring theoretical knowledge of financial management, sources of financing, financial policy, the time value of money, and financial markets, students apply these concepts by preparing a structured and data-driven financial plan. In doing so, they transform theoretical content into measurable projections, demonstrating their ability to interpret data, quantify assumptions, and assess the financial feasibility of a business idea.

The financial plan consists of several interconnected components. Students first identify investment needs and classify them into fixed and current assets, learning to distinguish between capital and operating expenditures. They then analyze financing options by comparing equity, long-term and short-term loans, and other external funds, evaluating how each affects liquidity, risk, and long-term sustainability. A key step involves aligning investments with financing sources, assessing solvency, leverage, and the balance between assets and liabilities.

Students also prepare initial and projected financial statements, including the opening balance sheet and multi-year projections of the income statement and balance sheet. This requires integrating knowledge of sales forecasting, operating costs, taxation, depreciation, and interest expenses. Using structured templates, they project business performance over several years, improving their ability to make long-term financial assessments.

Additionally, students develop a sales plan and a detailed cost structure, enabling them to forecast revenues, evaluate cost behavior, calculate operational results, and identify the break-even point. By analyzing gross profit, operating profit, and net profit, they learn to interpret profitability trends and assess overall business sustainability.

Through this comprehensive, data-driven modeling process, students build strong financial literacy and practical competence. They learn to structure financial information, justify assumptions, interpret financial outcomes, and communicate financial logic clearly. Working with real-world templates and digital tools prepares them for professional financial decision-making, where accuracy, analytical rigor, and data interpretation are essential. Modern computer laboratories and financial software further support this process by providing a technologically advanced environment for applied learning.

3. PRESENTATION AND EVALUATION OF BUSINESS PLANS: DEVELOPING PROFESSIONAL COMMUNICATION SKILLS

The final stage of the business plan project at the University FINRA Tuzla focuses on developing students' professional communication skills through structured presentations and evaluations. While preparing a data-driven financial plan is essential, students must also learn to communicate their findings clearly and persuasively. Therefore, the curriculum includes a formal presentation component that requires students to articulate their business concepts and financial reasoning before an evaluative audience.

The presentation process consists of two stages. First, all students present their business plans to mentors and teaching staff, who assess analytical accuracy, structure, clarity, and provide feedback to improve communication. After this internal round, the most innovative and well-prepared projects are selected for presentation before representatives of the banking sector, entrepreneurs, company directors, and other professionals. This second stage exposes students to realistic evaluation environments and mirrors authentic business communication scenarios.

Throughout both stages, students must explain the logic of their business ideas, justify assumptions, and translate complex financial models into concise and accessible arguments. This experience strengthens key competencies such as clarity of expression, logical reasoning, persuasive communication, and the effective use of visual and analytical tools. Responding to questions and defending financial decisions further enhances their confidence and professional readiness.

By integrating internal and external presentations, the FINRA model reinforces the idea that financial competence extends beyond technical analysis to include the ability to communicate financial logic convincingly and professionally. Time-limited presentations also teach students to prioritize essential information and deliver focused, impactful messages—skills crucial in contemporary professional and entrepreneurial settings.

CONCLUSION

The educational model implemented at the University FINRA Tuzla demonstrates that the development of financial competencies in higher education must extend beyond theoretical instruction and encompass applied, data-driven, and professionally oriented learning experiences. Through the integrated design of the curriculum—combining entrepreneurship, financial management, and practical project development—students acquire the analytical, technical, and communicative skills required for effective financial decision-making in contemporary business environments.

The creation of a comprehensive business plan enables students to apply financial management principles in a structured and measurable way. By identifying investment needs, selecting appropriate financing sources, preparing multi-year financial statements, forecasting revenues and costs, and analyzing profitability and sustainability, students learn to interpret financial data and justify financial decisions using evidence-based reasoning. This process strengthens their ability to critically evaluate business opportunities, assess financial risks, and formulate strategies that are grounded in quantitative analysis.

In addition to analytical competencies, students develop essential professional communication skills through structured internal and external presentations of their business plans. Presenting before mentors, and subsequently before representatives of the financial and business sectors, helps them build confidence, refine argumentation, and communicate complex financial models in a clear and concise manner. Time-limited presentations further enhance their ability to prioritize key information and deliver focused, impactful messages—an ability that is crucial in professional financial practice.

The integration of ESG principles, digital technologies, and experiential learning further enriches the educational model, ensuring that students are prepared for the demands of an evolving global economy. By considering environmental sustainability, social responsibility, and modern technological tools in the development of their business ideas and financial projections, students cultivate a forward-looking perspective aligned with contemporary standards of ethical and data-driven business management.

Overall, the FINRA model provides students with a comprehensive, practical, and future-oriented learning experience. By combining analytical rigor, technological competence, and professional communication skills, it prepares graduates to effectively engage in financial decision-making, entrepreneurship, and strategic management—equipping them for successful careers in a dynamic and data-driven business landscape.

The model confirms that combining financial theory with data-driven practice and communication training creates a powerful pedagogical framework that can be replicated across higher education institutions seeking to modernize their curricula.

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