Increasing Financial Literacy Among University Students in Terms of Teaching Bitcoin and Cryptocurrencies

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Abstract. Increasing financial literacy among university students is crucial, as in many cases, this debt burden and inappropriate spending impose a serious burden on households. A new approach to this could be cryptocurrency-based education. The research aims to shed light on the need to examine several factors before investing. When investing in cryptocurrency, choosing the right cryptocurrency can be crucial, as a bad investment exposes the invested capital to serious risk, and even then, the constantly changing market conditions have not been considered. For this reason, the research will develop what approach would be appropriate to teach the subject in certain majors, taking into account student interest. These can be: IT, economics, mathematics, or legal approaches. This would allow students to decide on the most optimal investments based on their individual preferences, while also becoming familiar with the given blockchain and its inherent possibilities.

Keywords: Blockchain technology, Education, Data security, Financial literacy

1 Introduction

Investing in human capital and lifelong learning are the defining educational issues of the 21st century. It is well known that universities have a huge role to play in this, if only because they have to convey up-to-date knowledge to students. Bitcoin education is not a widespread phenomenon in higher education institutions, however, taking into account the rapid changes in the labor market, cryptocurrency education has become a current issue that requires decisive answers. Education and technology are closely linked, with the former being shaped by education systems and methods for centuries [1]. The appreciation and expansion of innovation is forcing universities to make structural changes, standardize procedures, and solve methodological problems. In this environment, teaching Bitcoin as a possible subject has become a timely issue, because in our current digital era, the existence of digital money, in addition to traditional paper money, offers numerous payment,

transfer and transaction options. The aim of the research is to examine the potential of blockchain education and its thematic aspects.

In the competition for students, universities must take into account the demand and supply of the labor market. They must have a professionally compiled complex "curriculum package" that future graduates can use in the labor market in a short time. In this curriculum system, it is necessary to examine the possibilities of possible teaching of Bitcoin and other cryptocurrencies. This would be important because it can be assumed that this would reduce the interval during which the costs of education would be repaid, as students would thus acquire up-to-date knowledge that even the labor market would be familiar with. Higher education institutions need to monitor current needs and trends to provide their students with the most up-to-date knowledge possible. In universities where Bitcoin as a subject would be included in the curriculum, it would definitely be possible to establish that these higher education institutions are open to new ideas, even if they contain some risks, since there are currently many questions that need to be answered around Bitcoin. It is definitely advisable to think about such an option, since investment in human capital has increased significantly in the 21st century.

The research questions that guided this study were as follows:

Research Question 1:

What approach would be appropriate to use to teach blockchain technology at universities?

Research Question 2:

Can financial literacy be increased through blockchain technology?

The research is structured according to the following structure:

- Blockchain technology and its educational possibilities,
- Important aspects of cryptocurrency and blockchain technology education.

2 Blockchain Technology and its Educational Possibilities

Science, technology and innovation play a significant role in the economies of industrialized countries and can therefore be considered one of the driving forces of international competition.

The role of entrepreneurs in promoting the economic growth of small businesses has received significant attention over the past three decades. Supporting businesses and creating new businesses is a crucial element of government industrial and

innovation policy. An official government publication on Entrepreneurship, Skills and Innovation sets out the form in which support programmes are delivered to individuals, communities and businesses.

Three sources of demand for entrepreneurial education can be identified:

- Government: this source is primarily economic in nature, and significant emphasis is placed on job creation.
- Students: Students may seek entrepreneurship education for two reasons. The first reason is to start their own business, while the second is to acquire knowledge that can later help students successfully advance in a larger company.
- Educational: There is a demand for non-linear entrepreneurial knowledge that can be applied in real life. It is a known fact that recent graduates lack real business knowledge [2].

Pittaway says a recent study with focus groups of entrepreneurship educators reveals the complexity and diversity of the practical tasks of entrepreneurship education, and the need to consider entrepreneurial learning outcomes and their connections for effective course design. Despite the increased pedagogical emphasis, innovations of an innovative nature in the development of practical tasks cannot be considered satisfactory. The research names business ideas as the intended learning outcome and also suggests that student motivation and student group behavior have an impact on the learning outcome. The extent of the impact of motivation on learning outcomes is also a function of student group behavior. The emergence of online training in the era of information society has been facilitated by the spread of lifelong learning, which means that learning becomes a way of life [3].

One of the main aims of educational institutions is to prepare children for further education and successful integration into the workforce [4]. In the competition for students, universities must definitely take into account labor market demand and supply. They must have a professionally compiled complex "learning package" that future graduates could use in the labor market for a short time. In this curriculum system, it is necessary to examine the possibilities of possible teaching of Bitcoin and other cryptocurrencies. This would be important because it can be assumed that this would reduce the interval during which the costs of education would be repaid, as students would thus acquire up-to-date knowledge that even the labor market would be familiar with. Higher education institutions need to monitor current needs and trends to provide their students with the most up-to-date knowledge possible. In universities where Bitcoin as a subject is included in the curriculum, it would definitely be possible to establish that these higher education institutions are open to new ideas, even if they involve some risk, as there are currently many questions that need to be answered around Bitcoin. It is definitely advisable to consider such

an option, as investment in human capital has increased significantly in the 21st century.

Economic thinking on education as an economic investment is currently dominated by human capital theories, which explain the return on educational expenditure through the increase in the productivity of the individual receiving it. Consequently, they conclude that the costs of training are repaid at both the individual and societal levels. In the former case, in individual living wages, and at the macro level, in the productivity growth of the economy as a whole [5].

3 Important Aspects of Cryptocurrency and Blockchain Technology Education

The importance of entrepreneurship education lies in three factors:

- The need for students to learn about entrepreneurship;
- Preparing students to create jobs rather than training them to fill existing jobs and
- The need for economic growth through the creation of new jobs [6].

However, approaching entrepreneurship from the Bitcoin perspective opens up many new opportunities for job creation, as numerous BTC-based start-ups have been launched so far, launched by recently graduated students. However, in order for this to be successfully achieved, universities face one of the most difficult tasks: to equip their students with skills that they can successfully apply in business life.

Universities can contribute to entrepreneurship in two ways: indirectly, by educating students, and directly, through research and by serving as a hotbed for new businesses and initiatives. In order to exploit the potential of candidates and future innovators, universities can be considered responsible for preparing candidates within their own fields. However, according to McMullan and Melnyk, research at universities also includes many new ideas and innovations that have commercial potential, but these remain untapped in most institutions [7].

Universities have an innovative role due to their position in the economy, as students are introduced to and come into direct contact with new technological solutions through higher education institutions. Bitcoin start-ups are developing at a tremendous pace, with new ideas and solutions in the field of digital money appearing almost monthly. However, in order for students to have the appropriate competence in the field of digital money, it is essential to have a well-trained teacher in the field of digital money. Unfortunately, in recent years, due to the lack of

financial literacy, people have been making increasingly poor decisions in their financial affairs, which have an impact on the entire country's economy and GDP.

According to Tomasz Tunguz, a venture capital analyst at Redpoint, Bitcoin has been the fastest-growing startup investment area since mid-2012. Despite this, Bitcoin startups still receive a very small share of total funding – last year they accounted for just 0.18% of total funding.

The following possible guidelines can be formulated for teaching Bitcoin using the project method in IT departments:

- Development of Bitcoin applications,
- Security and privacy protection in cryptocurrency,
- Further development of the digital wallet,
- Further development of Bitcoin as an open source project.

From an economic perspective:

- the possibility and examination of Bitcoin's integration into everyday life and cash flow,
- Bitcoin in the banking system,
- Payment methods with cryptocurrency in everyday life,
- Bitcoin's regulatory possibilities.
- Examination of Bitcoin as a medium- and long-term investment opportunity.

From a mathematical perspective:

- Further development of Bitcoin-related algorithms in terms of reducing energy requirements,
- Further development of the Bitcoin code using algorithms,
- Continuous security review of changes to the Bitcoin code, and testing of the code.

From a legal perspective:

- Promoting and developing legal regulation of Bitcoin,
- Questions of categorizing Bitcoin within the framework of legal regulation,
- Examining the tax liability of Bitcoin.

These formulated Bitcoin guidelines are definitely innovation-based for higher education institutions, as it is known that one of the fundamental conditions for social innovation is increasing the level of education of human resources and acquiring knowledge. The way to this is through learning. In line with the major changes experienced in the economy and society today, the learning environment has also completely changed in order to meet the needs of the new knowledge and innovation-based economy and society [8].

However, it can be observed that innovation-based needs in education are not local needs, they cannot be broken down into individual localities or smaller regions, but

rather we can formulate student needs that span national borders. This is why it is necessary to examine the needs of Bitcoin education in a broad context in order to obtain relevant data. For higher education institutions to operate successfully, it is not enough for instructors to have expertise and competence in the field of digital money; in addition, universities must also have advanced technology, thus strengthening the learning culture. However, we should not ignore everyday experiences, which show that success in the education system also depends on the presence of certain personality traits and abilities (for example, the importance of diligence and quick comprehension) [9].

The human capital economics literature treats it as a fact that the perception of capital accumulation as a physical process has now been replaced by the productive capacity of human beings. The obvious traditional conclusion, which also applies to education, is that learning can help people become more productive over time, thereby contributing to economic growth. In this approach, the fullest possible fulfillment of human abilities is a fundamental task of education, not only in a pedagogical but also in an economic sense [10].

Conclusions

Cryptocurrency-based education is a new way to communicate today's modern educational curriculum. Teaching cryptocurrency is not only possible at IT universities and departments, as blockchain technology covers such a wide range that it can even be taught at economics, mathematics, or law universities.

In order to achieve this, it is necessary to take into account aspects of blockchain technology, as well as the interests of students and instructors in this topic. It is very important to find the right balance between theoretical and practical education.

The first step is to assess the needs of students and instructors in this topic, and then develop them according to needs and interests. In today's modern curriculum, teaching blockchain technology is an easily conceivable and achievable task. Looking back on the past 5 years, this was still an unimaginable goal, but today, the demand and willingness to teach blockchain meet, so this idea can be realized without any obstacles.

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