A1: Determination of teaching objectives and development of the training outline

Training Outline

Document Classification

Title	A1: Training Outline
Type	Report
Partners	All Partners
Authors	BLUEDU Consortium

Version Control

Version	Description	Name	Date
1.0	Draft version		07/02/2023
2.0	Final version		28/03/2023

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1. Introduction

This teaching content is a draft training outline prepared for the purpose of creating an interactive self-learning book for VET educators, who are the target audience of the BLUEDU project. The topics that will be included in this context are presented.

1.1. Blockchain Technologies for VET Education

1.1.1. Blockchain Technology

1.   Introduction

1.1.   Blockchain Fundamentals

1.1.1. Tools: Explorer, Wallet, Faucet, and Bot

1.2.   Blockchain History

1.3.   Blockchain Advantages and Limitations

2.   Consensus Algorithms

3.   Cryptography Fundamentals (Basic algorithms and protocols, Advanced algorithms and protocols)

4.   Blockchain Platforms/Networks (Platforms Types and Samples, Ethereum Mechanics, Bitcoin Mechanics)

4.1.   Layer2 Architectures (State channels, Side chain, Bridges, Oracles)

4.2.   Decentralized Application Development

5.   Blockchain Programming

5.1.   Blockchain Integration Technologies

6.   Blockchain Transactions, Mining, and Wallets

6.1.   Blockchain Governance

7.   Smart Contracts

8.   Blockchain Security

8.1.   Dapp-Smart contract audit

8.2.   Wallet Safety and Security, Custody, Backup, Recovery

9.   Blockchain Privacy

10.   Issues and Trends in Blockchain Technologies

10.1.   Blockchain Regulations

10.2.   Non-Fungible Tokens

10.3.   Tokenomics (Finance and Economics)

10.4.   Blockchain Application Domains and Real world samples (Blockchain Feasibility Analysis, Introduction to Cryptocurrency, Cryptocurrencies, Currencies, Tokens, and Stablecoins, Decentralized Finance (DeFi), ICO, STO, Central Crypto Exchanges, Central Bank Digital Currencies, Supply chains, Metaverse, Blockchain Gaming (GameFi), Decentralized Identity Management, Self-Sovereign Identities, Health)

10.5.   WEB3

10.6.   Decentralized Autonomous Organizations (DAOs) and Decentralized Applications (DApps)

10.7.   Initial X Offering (Coin, Dex, Security, etc.)

10.8.   Blockchain Scalability

10.9.   Blockchain Labs (Solidity Smart Contract Development, Development Tools, Blockchain Node Installation)

1.1.2. Teaching Approaches for Blockchain Education

1. Introduction
2. Active learning approach.
3. Learner-centered learning approach.
4. Collaborative learning approach.
5. Experiential learning approach.
6. Problem-based learning approach.
7. Interdisciplinary learning approach.

1.1.3. Teaching and Evaluation Methods and Tools for Blockchain Education

1. Introduction
2. Small Group Instruction
3. Student-Centered / Constructivist Approach
4. Project-Based Learning
5. Cooperative Learning
6. Game-Based Learning
7. Formative Evaluation
8. Process Evaluation
9. Outcome Evaluation
10. Impact Evaluation

11. Summative Evaluation

12. Goals-Based Evaluation