

DECENTRALISED, WEB3 ENABLED E-LEARNING PLATFORM,
GOVERNED BY A DAO.
TRUSTLESS & PERMISSIONSLESS.

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Abstract

This paper explains in details how a decentralised e-learning platform could be created using blockchain technology and advanced governing concepts, such as DAOs. BUIDL Academy is an e-learning platform, utilising web3 in order to provide creators and consumers with the possibility to create and consume various technology related courses. BUIDL DAO is the governing body of the BUIDL Academy. It consists of top technology companies. BUIDL DAO provides benchmarks and guidelines regarding course content and quality. Every course is examined by the DAO, before it's approved and added to the BUIDL Academy. BUIDL DAO is governed by a governance token. Every course in BUIDL Academy is a form of NFT, with the content safety store on IPFS or other decentralised storage options. Every course completion certificate is also a form of NFT, providing immutable proof and verification for achievement. Courses in BUIDL Academy are predominately technology & business related, with an emphasis on, but not limited to, web3 space.

Keywords: DAO, Governance, Learning, Decentralisation, Tokens, Utility.

Problems

Currently the e-learning space doesn't provide the necessary tools, platforms and skills for the current and upcoming workforce to properly enter or be part of the overall technology space. This section covers the main problems we are currently facing in that regard and their negative effects over the industry.

No vetting of technology related learning content

The majority of e-learning platforms do not check the information provided in courses, submitted to their platforms. This results in badly formatted, outdated, inaccurate and misleading content, which is used by people looking for further education. Moreover, the style & quality of the content is also neglected, resulting in hard to understand and learn from courses, especially for advanced technology concepts, such as web3 & blockchain related content and knowledge.

Learning content must be vetted before released to the general public, in order to ensure quality, proper standards and relevance.

No single place for all web3 related information

The current situation in the e-learning space doesn't present a single place where a user can find web3 education content of all types and regarding all topics. As it stands today, learning content can be found scattered across different platforms, such as YouTube, Udemy, Binance, Coursera and many other blogs and websites. Each of

those platforms has its own style of presenting the content and its main aspect. Moreover, there isn't a unified place, which presents both developer and non-developer web3 educational information. This makes it harder for a person, who is transitioning from web2 to web3 employment to get properly educated.

A single place for all web3 knowledge is needed, serving as the library of Alexandria of the internet.

People entering web3 technology space without proper knowledge & skills

Since 2021, the web3 has seen huge inflow of institutional capital, resulting in rapid company scaling and expenditure. The rise of DeFi [1] and NFTs [2] in particular, has had a huge impact on the whole web3 space. Due to the lack of sufficient, structured and vetted knowledge in one place regarding web3, DLT[3] and other related topics, many of the new starters don't have sufficient knowledge nor the skills needed, in order to be of proper use to the company from their start. New joiners have to go through extensive training and learning, resulting in very steep learning curve imposed to them.

The companies also suffer, due to the long time it takes for an employee to understand web3 ideologies, tech stacks and other work related aspects. These aspects are vital in order to be a productive member of a technology company. This results in a loss of company funds in web2 to web3 transitioning and education of their employees. In order to increase efficiency and stimulate industry & ecosystem growth, the entering workforce must be properly educated and trained in advance.

Lack of employer certainty in employee knowledge & skills

As it stands today, there is no unified and verifiable way for a company to properly assess the skills and knowledge of a potential employee, without presenting the candidate with lengthly preliminary tests or tasks. However, even with that approach, it is very easy for a potential employee to cheat on the test or task, resulting in them being hired without having the proper skills and knowledge required to be a productive member of the organisation. A lot of the companies, hiring non-developer roles such as Sales Engineers, QAs and PM/POs, don't even require a test or a task to be completed, but only a series of interviews. This present an opportunity for a person to just memorise certain aspects of knowledge, resulting in passing the interviews and getting a job even while not being prepared or educated enough for it. Employers need to have certainty in what knowledge and skills their starting employees have only by recognising a certificate or a diploma in order to save resources such as time and money.

No verifiable proof for knowledge

Certificates and diplomas can be falsified or in some cases made up in their entirety. Companies can't be sure if a certificate or diploma is 100% genuine, unless they do a background check of it, resulting in spent time and resources. As it stands today, certificates and diplomas do not translate well into the skills and knowledge acquired. This is due to the lack of transparency of how they obtained, what work had to be achieved for them and what kind of skills had to be learned in order to obtain a

certain certificate or diploma. A immutable and verifiable proof of knowledge needs to exist in order to enhance & stimulate trust between employer and employee.

Unfair business model, not incentivising quality

E-Learning platforms, such as Udemy, Coursera and BitDegree, have an unfair and outdated business model, which does not incentivise quality. The platforms currently get up to 75% of the revenue from the content. This fact results in lack of stimulation for creators and knowledge workers to produce top quality educational content, needed for the rapidly developing and expanding web3 and technology ecosystem. The e-learning industry needs to transition to a quality stimulating business models, in which creators are incentives to create top quality learning content.

Solutions

This chapter examines possible solutions to the above mentioned problems and how they might be implemented using technologies, such as DLT.

Industry reviewed course content

Educational courses, especially ones providing education in order to obtain future work placement, must be assessed by prominent companies part of the sector. This is due to the fact that the companies need to ensure the proper knowledge, content and information is delivered to the participants in the course. This will decrease onboarding times for new joiners, who have already taken a company evaluated course. Moreover, interview process will be shortened as well, due to the fact that the company is fully

aware the knowledge a potential employee has by passing a certain course. Moreover, an employee, who has obtained the proper knowledge and skill would benefit the company from day 1, since they already possess the needed skills and knowledge to be a productive member of the organisation.

Immutable certification

Utilising DLT and smart contracts, web3 allows for immutable certifications to be created and represented by a token, issued on a blockchain. Those certificates cannot be faked, acquired without passing the necessary testing or transferred to other parties, thus ensuring that the person has obtained the certification in a legit and proper way. Each certificate represents the exact course, its content and its exam undertaken, in a n immutable and trestles way. This fact makes it extremely easy to verify if a person has actually passed a certain exam. All a user has to do is sign a blank transaction using the web3 wallet holding his certificate, in order to prove that they are the true owner of the certificate. By using certification issued on a blockchain, the user has forever access and proof over the skills and knowledge they have acquired.

Match between needed skills and knowledge

In the technology space, there is often a gap between knowledge & skill needed by a company and the actual knowledge and skill possessed by an employee. This is especially true in web3, which is very rapid changing ecosystem, with constant pivoting and improvement. Technology companies are now more than ever in need of specialised skills and knowledge, especially in advanced concepts and technologies,

such as smart contracts, blockchain architecture, decentralised governance, tokenomics, and metaverse. By checking courses and deciding what content is adequate, relevant and needed, companies will ensure a complete match by the skills they require and the skills possessed by their employees, future or present.

Clear proof of knowledge

Blockchain technology and more specific smart contracts allow for an immutable piece of information to be stored in a decentralised manner, ensuring its safety and immutability. Using this technology, certificate information and course content will be immutable after examined and approved by a company. This technology will serve as a clear proof that person A has completed course B, thus receiving certificate C, all written on-chain. Thus, having certificate C serving as a clear proof of knowledge obtained from course B.

Fair business model, incentivising quality

Web3 is the transitioning from centralised to decentralised, and thus shifting the benefits of content creation towards the creators, rather than the platform. Creators should receive a minimum of 70% of the revenue generated from their course content. This would incentivise content creation, which in turn would stimulate quality of the content. This is paramount to ensure all course content is created with quality and relevance in mind.

Single place for all technology related knowledge & skills

Having a single place to access all technology and business related knowledge will help the education process in many beneficial ways. By being in a unified place and having unified style, guidelines and bench mark for quality, course content can be much more easily absorbed and therefore learned. It is essential that there is one place to find both theoretical and practical content, as well as both technical and non-technical. By having all type of content under “one roof” and by following the same benchmarks for quality assurance, users will be more confident in the courses they are taking and can have better and shorter education process, without sacrificing knowledge. Moreover, when the courses are approved by top technology companies, the users will be motivated and have trust that the courses and knowledge, they are consuming are proper and relevant.

In order to implement the solutions mentioned in the previous chapter, a web platform needs to be created, which will be governed by a DAO[4], consisting of key stake holders of the projects. Next chapter explains both the platform and the governing DAO in detail.

BUIDL Academy

BUIDL Academy (referred in this paper as **platform**) is a web platform, which will serve as the UI and interaction point between all users (referred in the papers as **consumers**), content providers (referred in this paper as **providers**), members of the

governing DAO(referred in this paper as **governors**) and the underlying blockchain. It is a web-app, with possible future mobile versioning .

The development of the platform and its operations are responsibility of the nominated representative and its team, explained below, following guidelines and instructions from the DAO. Consumers, providers and governors interact with the platform and with the underlying blockchain via a web3 wallet, such as MetaMask.

Figure 1. Explains the base architecture of the platform and how it is connected to the consumers and the underlying blockchain.

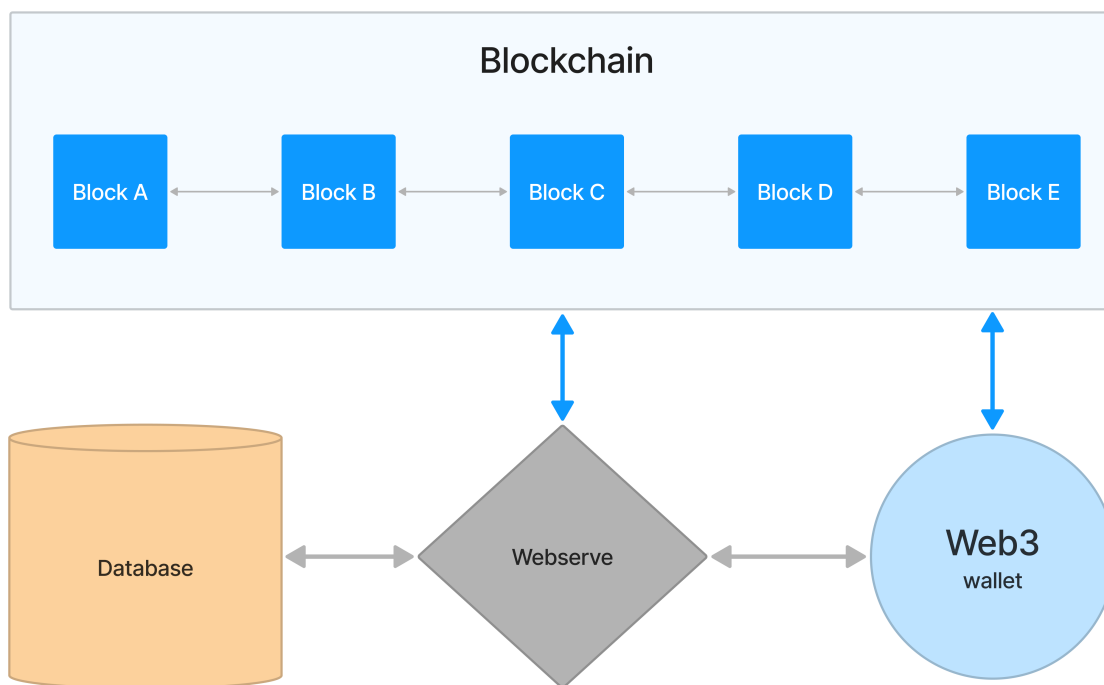


FIGURE 1.

BUIDL Academy will server as the point for preliminary verification of content, submitted by providers. It will be used to establish quality benchmark, check for relevance by the DAO and perform diligence in order to ensure all content, accessible via the platform, has upmost quality and relevance. Providers can submit content via the platform, as well as track current and past DAO proposals and their outcomes. The academy will submit all approved content to the DAO on a monthly basis, so that the governors can vote if the content should be included in the academy. Figure 2. Explains visually the process of having content added to the academy.

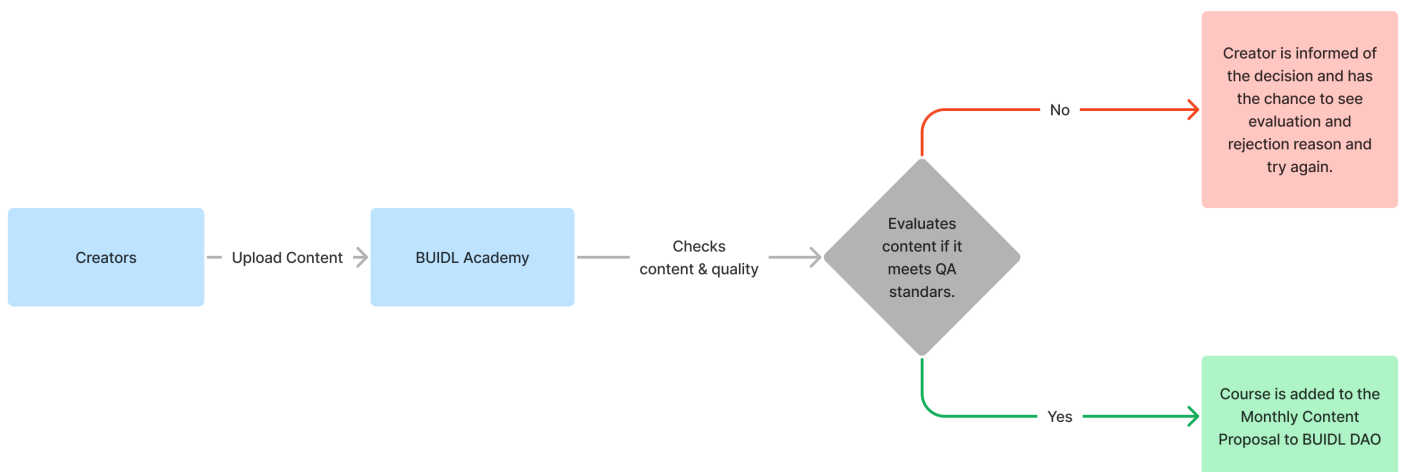


FIGURE 2.

The platform will also serve as the place in which consumers can purchase and consume content. Users can consume their content, by simply connecting to the BUIDL Academy using their web3 wallet. Using the platform, they can also see their course completion certificates as well as all DAO proposals, current or expired. Users would connect to the platform, using a web3 gateway or wallet, similar to the solutions offered by MetaMask and WalletConnect. A user is added as a “consumer” to the course, thus allowing them to consume the content. Each course completion certificate and its owner are written on-chain, so that it can be accessed via other UIs, not just via BUIDL Academy . At a later phase, non-custodial email based wallets will be introduced, such as [magic.link](#) .

BUIDL DAO

BUIDL DAO is the governing body of the BUIDL Academy. It is a Decentralised Autonomous Organisation, represented by a smart-contract, which is governed with a governing token. The DAO consists of course creators and course users. People are incentivised to be governors in the DAO, due to the following reasons. The DAO is entitled to receive 10% from the sales of courses via the platform to the consumers. The DAO can vote and choose how to spent all the income, generated from sales of courses, as well as kept in the DAO treasury.

BUIDL DAO can vote on what content to be uploaded, who should the nominated representative be, how should the treasury be spent, as well as all other matters that are relevant and of importance to the DAO, the platform or any of its members. Submitting a proposal and voting for a proposal would require a governance token,

which will be distributed via a governance token distribution period in exchange for other cryptocurrency assets, which will be used as the DAO Treasury.

Instructors

Providers are a vital part of the platform, as they will be the ones preparing & submitting course content . Once a content has been approved by the DAO, it is minted as a non-fungible token (NFT). The owner of the NFT is the instructor itself, entitled to 90% of the revenue, generated by the subsequent purchasing of access of this NFT. Ownership of the NFT, platform fee, addresses as well as content are all written on-chain, ensuring maximum transparency, security and immutability. The providers can set the price for their content, denominated in USD, using USD pegged stable coins.

Content

Course content can be anything from videos, coding exercises, written content and everything else, which would aide the knowledge that the course is bringing. Once the content and its format is approved by the platform and voted in by the DAO, the entire content is deployed on to decentralised server, such as IPFS [5]. The actual course is reflected on-chain in the form of an NFT, while the course content is encoded into the NFT's metadata, thus making the NFT a full representation of a course. Each course, represented by an NFT, will implement one of the existing EIP[6]Consumer extension. This allows for the user to access the content of the "bought" course, without the need of ownership transfer.

Consumers

Consumer of the content could be anybody, who wants to take additional education & certification in technology related field. The consumer are able to browse and filter all the courses provided within the platform. Using their web3 wallets, they are able to “purchase” a course or consume already purchased content. Once they have “purchased” a course, represented by an NFT, they become a consumer of its metadata and thus content. This action happens on-chain, ensuring trust and transparency. Once their web3 address has been added as a consumer of an NFT, they can access its data & content via the platform. User can “purchase” the content they desire with USD pegged stable coins.

Certificates

Whenever a user completes a course and successfully passes the end examination, they receive a certificate of completion, issued to their web3 wallet. These certificates are a form of non-fungible tokens (NFT), without the possibility of transfer. Such tokens would be based on the idea for **SBT[7]** (Soulbound Token), in which case the Soul issuing the token is the DAO, and the owner is the user. The certificates are non-transferable, have all the relevant course & exam data encoded in their metadata and visible on-chain. However, a user can always revoke a certificate they own, but can never transfer it to another user.

This structure ensures that a certificate is 100% genuine and can serve as a guarantee of exam & courses undertaken.

Nominated Representative

The nominated representative is a person or a company, which is voted by the DAO and given a budget from the DAO Treasury in order to organise all the work needed regarding the platform and any other aspect of the project, which can't be resolved via a direct DAO execution.

Primarily, the nominated representative will organise all off-chain related work and activities, such as:

- a. Organising a team to work on the ongoing development of the platform.
- b. Ensure the quality assurance the platform, as well as the quality behind all the content in the platform.
- c. Organise any other off-chain activities, instructed by the DAO via a passed proposal.

The nominated representative would have enough governance tokens, in order to submit a content proposal to the DAO. These could be lent from the DAO for that explicit purpose, or be owned by the nominated representative directly. The nominated representative could be an already existing DAO member or be an outside entity.

Network & on-chain activity

The most suitable network for the BUIDL Academy and BUIDL DAO is Polygon. Polygon is a decentralised Ethereum scaling platform that enables developers to BUIDL scalable user-friendly dApps with low transaction fees without ever sacrificing on security. This makes it perfect for the execution of the BUIDL Academy & DAO.

The events, which would trigger an on-chain data writing, and hence would require a payable transaction, are :

- a. Submitting a DAO proposal.
- b. Voting of a DAO proposal.
- c. Execution of a DAO proposal.
- d. Deploying a course metadata to IPFS.
- e. Minting Course NFT.
- f. Adding a consumer to a Course NFT (upon “purchase”).
- g. BUIDL Academy 10% fee (upon “purchase”).
- h. Minting Certificate NFT to the students.

Competitors

Udemy, is the biggest competitor of BUIDL Academy. Udemy has been operational for 10+ years, and has raised more than \$300 Million in previous financing rounds. With its \$200 Million in revenue for the past year it is attracting ever increasing user base. Udemy also provides subscription based access as well as company focused courses, resulting in a steady recurring revenue stream.

BUIDL Academy has the advantage over Udemy mainly in 3 main aspects:

1. BUIDL Academy instructors receive 90% of the revenue generated by their courses, while Udemy instructors receive only 37%. This metric alone will contribute to the shift of quality course instructors from Udemy to BUIDL Academy.

2. Udemy provides certificates for completion of courses, which can't be verified and there is very little transparency. Course completion certificates, issued by BUIDL Academy are all on-chain, meaning they can't be modified and are tamper proofed. They have all the necessary information in their metadata, such as course syllabus, link to the content, instructor and student details.

3. BUIDL Academy is run by the BUIDL DAO, consisting of a consortium of instructors, students and investors. All this makes BUIDL Academy a decentralised, self governing entity. It is owned, and governed by the very people who are using it. Udemy is a centralised entity, which has the power to make any decisions they see fit, without ever consulting the actual users. I believe this fact will be paramount for the next 3-10 years, as the web3 and digital economy are all about shifting decision power back to the users. The fact that a student can be part owner of the very place they are getting their education from, will play a key role in the shift of users from Udemy to BUIDL Academy.

BUIDL Academy will take already learnt lessons from Udemy, in order to achieve market superiority as well as excellent UX for both instructors and students. We can use and leverage they already established presence and business practise & models, in order to quickly become competitive.

Risks

51% DAO attack

One risk vector is the possibility that a governor is able to purchase large amounts of \$BDGV tokens on a secondary market, resulting in one governor to have >31% of all governance tokens. In that situation, the governor will be able to submit and

vote on proposals without the need for other members of the DAO to participate. This may result in malicious behaviour by the governor, such as emptying the DAO Treasury and/or making other decisions, directly benefiting themselves at the expense of the DAO.

Governance token distribution

Another risk vector is the possibility that due to market conditions and other factors, the distribution of governance tokens becomes highly diluted, resulting in 0 addresses holding >100,000 \$BDGV tokens. In this scenario, the DAO is effectively blocked from operations, as it is impossible to submit a proposal to it, until 1 address has more or equal to the 100,000 \$BDGV.

Compliance

The DAO can vote to use the governance token as a security in order to distribute the profits from selling courses. In this case, there might be additional measures to be undertaken, to ensure the legal status and regulation of all DAO assets and the DAo itself, in order to be recognised as an organisation

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