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Bittensor-Powered Education Ecosystem

The doors to knowledge are open.

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01

Executive Summary

This project introduces a bold new approach to online education, powered by Bittensor, a decentralized network driven by open competition. By bringing this competitive model into education, we aim to address some of the most significant challenges facing global education and online learning, opening new possibilities for how knowledge is shared, taught, and accessed around the world.

No single project can solve every problem in education. Yet we firmly believe this approach can bring lasting improvements to learning worldwide, challenge familiar ways of teaching, and perhaps even reshape how we understand education itself.

Our mission is simple, even if the task is immense: to improve teaching methods through open competition while making high-quality learning opportunities available to people everywhere, freely or at nearly zero cost. With Bittensor as its foundation, we envision a learning environment where tutors are encouraged to find better ways to teach, and people from all backgrounds have more opportunities to gain knowledge, develop skills, and realize their potential.

And this is only the beginning. As each stage of our roadmap proves its value in practice, we plan to introduce new capabilities, reach more people, and work toward becoming one of the world's leading education platforms.

To see why we believe this is possible, let's explore how it works.

Sources [B01]

02

The Global Education Challenge

The world faces a double education crisis. Traditional education systems still struggle to reach everyone and provide effective learning opportunities, while online education, often seen as a solution to these challenges, remains inaccessible or falls short for many of the people who need it most.

A teenager may be unable to attend school. An adult may struggle to afford retraining or develop new skills. An older person may find it difficult to access learning opportunities suited to their needs. Simply moving education online does not automatically solve these problems. The opportunity to learn should not end with childhood or early adulthood; it should remain open throughout life.

The Scale of the Crisis

273
Million
Children and young people out of school worldwide.
UNESCO, 2026; 2024 data. **[E01]**

600
Million
Children below minimum reading and mathematics proficiency levels.
UNICEF Digital Education Strategy 2025–2030. **[E02]**

2.2
Billion
People worldwide who are still not using the internet.
ITU, 2025 estimates. **[E03]**

1.3
Billion
School-age children without an internet connection at home.
UNICEF Digital Education Strategy 2025–2030, based on earlier connectivity estimates. **[E02] [E04]**

These figures represent different populations and reporting periods. They may overlap and should not be added together.

Where Traditional and Online Education Fall Short

Traditional Education	Online Education
Schools remain inaccessible, unaffordable, or understaffed in many communities.	Internet connectivity, devices, and data costs remain barriers for millions.
Attending school does not always guarantee meaningful learning or practical understanding.	Digital content does not always provide effective teaching, interaction, or personalized feedback.
Adults often face financial and practical barriers when returning to formal education.	Self-paced learning frequently lacks personal guidance, structured progression, and recognized qualifications.
Educational opportunities often become more limited after school or university.	Digital literacy gaps and accessibility challenges prevent many people from fully benefiting from online learning.

What Global Research Reveals

Global teacher shortage	UNICEF estimates that the world needs an additional 44 million primary and secondary teachers **[E02]**. Technology can help expand educational opportunities, but it cannot simply replace effective educators.
Challenges in digital education quality	UNESCO's 2023 Global Education Monitoring Report highlights the limited rigorous evidence that many educational technologies improve learning outcomes **[E06]**. UNICEF's 2025–2030 strategy similarly emphasizes that providing technology without improving teaching can lead to substantial wasted investment.
Unequal access to lifelong learning	According to the OECD's September 2026 report, 49% of employed adults participate in non-formal learning, compared with only 17% of adults outside the labour force **[E05]**. These figures, primarily covering adults aged 25–64 in OECD countries, reveal significant inequalities in opportunities for continued education.

The Core Problem in One Statement

The global education crisis is no longer just about getting people into classrooms. It is about ensuring that everyone has the opportunity to access high-quality education, develop practical knowledge and skills, and receive meaningful learning support throughout their lives.

Traditional education still leaves too many people behind. Online education could help close these gaps, but without affordable access, effective teaching, and adequate learner support, it risks reproducing those same inequalities in the digital world.

Sources [E01] [E02] [E03] [E04] [E05] [E06] [E07] [E08]

03

Our Vision and Solution

The world holds an extraordinary amount of knowledge. Some of it is taught in schools and universities, but much of it is gained through years of professional work, personal experiences, practical challenges, discoveries, and everyday life. Yet countless people still struggle to access the knowledge and learning opportunities that could meaningfully improve their lives.

Education, as we see it, goes far beyond traditional classrooms, academic qualifications, or standardized courses. It should be a lifelong opportunity for anyone to explore new ideas, develop useful skills, understand the world more deeply, and learn from the knowledge and experiences of others.

A tutor may teach mathematics, science, or programming, but they may also share lessons learned from building a business, mastering a profession, creating something meaningful, overcoming difficult challenges, or simply gaining valuable insights through years of life experience. Knowledge does not exist only within institutions, and the ability to teach something valuable is not defined solely by formal credentials.

Our vision is to create a global education ecosystem where valuable knowledge and experience can be shared more freely, and where anyone with something genuinely useful to teach has the opportunity to reach people who can benefit from it.

But access alone is not enough. Producing more educational content does not necessarily lead to better learning. What matters just as much is how effectively that knowledge is explained, communicated, understood, and applied in real life.

This is where a different approach can make a difference.

Rather than leaving the evolution of teaching to a single institution or centralized organization, we want to bring open competition into education. Tutors should have the freedom and motivation to explore better methods, share their own perspectives, develop engaging lessons, and show the value of their knowledge to learners around the world.

To make this possible, we are building an online education platform powered by Bittensor, a decentralized network driven by competitive, performance-based incentives. Through a dedicated subnet, independent tutor agencies can organize and support tutors, develop their own approaches to teaching, and compete by attracting and engaging learners. The network provides economic incentives for this activity, creating a new model for supporting the global exchange of knowledge.

For learners, the experience should remain as simple and accessible as possible. People can discover tutors, explore structured teaching plans, and participate in live learning sessions freely, without needing to understand the underlying blockchain technology. Whether someone wants to strengthen academic knowledge, acquire professional skills, explore a personal interest, or learn something useful for everyday life, we want them to find meaningful opportunities to do so.

Open competition alone cannot guarantee better teaching or stronger learning outcomes. Our initial approach rewards measurable live audience engagement; over time, we plan to introduce more advanced ways of evaluating teaching effectiveness and actual learning progress.

The vision extends far beyond an online learning platform. Through ongoing development, educational research, institutional partnerships, community initiatives, and practical opportunities, we hope to connect what people learn with what they can achieve in the real world.

We are not simply trying to bring education online. We want to unlock the enormous value of human knowledge and experience, encourage better ways of sharing it, and help more people learn from what others have discovered throughout their lives.

Sources [E08] [B01]

04

The Education Platform

4.1 Platform Overview

Our platform is designed around a simple idea: connecting people who have valuable knowledge and experience with people who want to learn from them, regardless of where they are in the world.

We want this to be a global learning environment where tutors can freely share their expertise, develop their own teaching approaches, and reach students beyond geographical and institutional boundaries. At the same time, students can explore a wide range of subjects, discover tutors, follow structured teaching plans, and participate in live learning sessions without financial barriers.

Unlike conventional blockchain-based applications, our platform is designed to feel like an education service rather than a cryptocurrency product. Students do not need to understand blockchain technology, manage digital wallets, or participate in token transactions to access learning opportunities.

Behind this simple experience, the Bittensor network provides the competitive incentive structure that supports the ecosystem and encourages the continuous contribution of educational content.

4.2 Learning Beyond Traditional Education

One of the fundamental principles of our platform is that valuable knowledge is not limited to academic institutions, formal qualifications, or traditional teaching professions.

Over a lifetime, people build up an extraordinary depth of knowledge through education, professional work, personal experience, experimentation, successes, failures, and everyday challenges. Much of this knowledge may never appear in textbooks or university courses, yet it can be incredibly valuable to someone facing similar challenges or seeking to develop new skills.

For example, an experienced entrepreneur may share the lessons learned from building a business. An engineer may demonstrate practical solutions to real-world problems. An artist may explain their creative process, while a skilled professional may teach techniques developed through decades of experience.

Traditional academic subjects such as mathematics, science, languages, and programming remain just as important. Our objective is not to favor one type of knowledge over another, but to create opportunities for different forms of useful knowledge to be shared and explored.

The value of knowledge lies not only in where it was acquired, but in how well it can be shared and applied to improve someone's understanding, abilities, or everyday life.

In this ecosystem, anyone with genuinely valuable knowledge and the ability to teach it can have an opportunity to contribute, while learners gain access to perspectives and experiences that may otherwise remain beyond their reach.

4.3 Tutors and Students

The platform is built around two primary types of participants: tutors and students.

Tutors are individuals who share their knowledge, expertise, and experiences through live lectures. They can introduce new concepts, demonstrate practical skills, explain complex subjects, or organize an entire sequence of lessons around a particular field of knowledge.

Tutors have the freedom to develop their own teaching styles and educational content. To schedule and deliver lectures through the platform, they become affiliated with a participating miner agency, which can support their teaching activities and performance within the ecosystem.

Students are people who want to gain knowledge, develop skills, explore interests, or better understand the world around them. Whether they are currently attending school, pursuing a professional career, or simply learning out of curiosity, the platform offers opportunities to learn from people with diverse backgrounds and experiences.

The initial platform is designed for learners aged 13 and above, with free access to educational sessions and no student subscription or lecture-booking fees.

At its simplest, the relationship between tutors and students is this: **those who have something valuable to teach should have an opportunity to share it, and those who want to learn should have an opportunity to access it.**

4.4 Tutor Profiles and Teaching Plans

Every tutor can build a professional public profile that introduces their background, experience, areas of expertise, and approach to teaching.

These profiles allow students to discover who the tutor is, what they intend to teach, and whether their knowledge and teaching approach align with the student's interests or learning goals.

But meaningful education needs more than a collection of unrelated lectures.

That is why one of the platform's central features is the **Teaching Plan**.

A teaching plan allows tutors to organize their knowledge into a clear and understandable learning sequence. It can introduce the intended audience, learning objectives, prerequisite knowledge, individual lesson topics, and the progression students can expect as they follow the lectures.

For example, a tutor sharing experience in entrepreneurship may create a series covering the fundamentals of starting a business, understanding customers, managing finances, and overcoming common operational challenges. Another tutor might develop a progressive mathematics course or a practical series based on a specialized professional skill.

Each plan can connect directly to upcoming scheduled lectures, allowing students to understand not only what they can learn, but also how different lessons relate to one another.

Together, these features are designed to encourage tutors to think carefully about how they share knowledge and help students move beyond isolated content toward a connected learning experience.

4.5 Educational Categories and Lecture Scheduling

To make a broad range of knowledge easier to discover, the platform initially organizes learning opportunities into twelve educational categories:

01 **K–12 Academics**	02 **Test Prep**	03 **Languages**	04 **Tech & Coding**
05 **University & Professional**	06 **Creative Arts**	07 **Career & Professional Skills**	08 **Personal Finance & Investing**
09 **Health & Wellness**	10 **Hobbies & Lifestyle**	11 **Bittensor**	12 **Other**

These categories provide a starting structure rather than a limitation on what people can learn. As the ecosystem grows, additional subjects and more specialized categories may be introduced according to learner interests and actual demand.

A unified lecture calendar allows students to explore upcoming sessions, discover relevant subjects, and organize their learning schedules. With timezone-adjustable displays, students from different regions can easily understand when lectures will take place.

Tutors can independently schedule their lectures within the platform's booking rules, with each session lasting between 10 and 120 minutes and a limit of one lecture per tutor per day.

Discovering, scheduling, and attending live lectures should be convenient and reliable for tutors and students alike.

4.6 Interactive Live Learning

Live interaction is at the heart of our initial educational experience.

Rather than building an entirely new video streaming infrastructure, the platform uses YouTube to deliver live lectures through twelve platform-managed channels, initially organized by educational category.

Tutors can broadcast their sessions using supported streaming software, while students can join through familiar YouTube viewing experiences.

Live teaching offers something especially valuable: a chance to share knowledge directly, respond to questions, explain ideas from different perspectives, and engage with learners as a lesson unfolds.

A tutor can demonstrate a practical technique, walk through a challenging problem, discuss a real-life experience, or respond to questions raised by students during the session.

Although prerecorded materials and lecture replays can remain useful learning resources, our initial platform places particular emphasis on genuine live teaching and interaction.

More than increasing the amount of educational content online, we want to encourage genuine exchanges of knowledge between tutors and learners.

4.7 Tutor Rankings and Performance Transparency

Open competition becomes more useful when participants can see how their contributions are performing.

The platform therefore introduces visible tutor rankings and performance information, helping students explore tutors and agencies understand the engagement generated by their teaching activities.

In the initial version, these performance indicators are based on YouTube-reported live audience engagement. They provide a measurable indication of how much live viewing activity a tutor's lectures attract, rather than a definitive assessment of teaching quality or actual learning outcomes.

This distinction is important. A popular lecture is not necessarily the most educationally effective, just as a highly valuable lesson may initially attract a smaller audience.

Even with those limits, transparent performance information and open competition may encourage tutors and agencies to pay closer attention to learner interests, improve how knowledge is presented, and experiment with different teaching approaches.

As the platform evolves, we intend to explore more advanced methods of evaluating learning effectiveness, student progress, and the practical value of educational experiences.

We want tutors to feel motivated to keep improving, students to have greater freedom to discover valuable knowledge, and the wider network to grow through participation and competition.

The result we are working toward is a platform that makes learning simple and accessible for students, opens worthwhile opportunities for tutors, and lays the foundation for a globally competitive knowledge-sharing network.

Sources [B01] [Y01] [Y04] [Y05] [Y08] [Y09]

05

The Bittensor-Powered Ecosystem

5.1 Why Bittensor?

Making knowledge accessible to everyone is a considerable undertaking. But building a platform where people can learn freely is only one part of achieving it. The greater challenge is creating a sustainable environment where capable tutors are continuously motivated to contribute their knowledge, improve their teaching methods, and provide valuable learning experiences.

Traditional online education platforms generally rely on centralized organizations to recruit tutors, manage educational content, and determine how teaching contributions are compensated. While these models can be effective, their growth and development often depend heavily on the resources, decisions, and financial capacity of a single organization.

We see another way forward.

Bittensor introduces a decentralized network where independent participants compete to provide valuable services and receive performance-based economic incentives. Rather than depending entirely on a central organization to manage and reward every contribution, this model allows competition to take place across a broader network of independent participants.

By building a dedicated Bittensor subnet for education, we aim to apply this competitive framework to the global sharing of knowledge.

The purpose is not simply to reward people for delivering lectures. It is to give independent tutor agencies an economic reason to discover capable tutors, support different teaching approaches, attract learners, and develop their educational offerings over time.

Bringing open competition together with real economic incentives could change how educational opportunities are created, supported, and improved.

5.2 Ecosystem Participants

Our ecosystem brings together five essential participants, each contributing to the operation and development of the education network.

Miners	Tutors	Students	Validators	Platform Operator
Tutor Agencies	Knowledge Contributors	Learners	Network Evaluators	Infrastructure Provider

Miners Tutor Agencies

Within our subnet, miners operate independent tutor agencies responsible for organizing and supporting tutors. They can recruit people with valuable knowledge, coordinate teaching activities, develop educational strategies, and manage their agencies according to their own approaches.

Miners compete for Bittensor network rewards based on the measurable performance of the live educational activities associated with their tutors.

Tutors Knowledge Contributors

Tutors are the people who bring knowledge and experience into the ecosystem.

They may be academic specialists, experienced professionals, skilled practitioners, entrepreneurs, creators, or individuals who have developed valuable expertise throughout their lives.

Tutors prepare teaching plans, deliver live lectures, interact with students, and explore different methods of explaining and sharing what they know. They participate in scheduled platform lectures through their affiliated miner agencies.

Students Learners

Students are the people who benefit from the knowledge shared through the platform.

They can discover tutors, explore educational subjects, follow teaching plans, and participate in live lectures without paying platform fees.

Their interests and engagement help reveal which educational offerings attract attention, creating an important connection between the learning experience and the ecosystem's competitive incentives.

Validators Network Evaluators

Validators are responsible for independently evaluating miner contributions according to the subnet's defined incentive mechanism.

They calculate miner performance using the platform's collected YouTube live audience analytics and can independently check reported figures against YouTube through authorized read-only access.

Their evaluations are used to determine network weights under Bittensor's incentive system.

Platform Operator Infrastructure Provider

The platform operator develops and maintains the education service, including user accounts, tutor profiles, teaching plans, lecture scheduling, broadcasting infrastructure, and analytics collection.

It also provides the data interface through which authorized validators obtain the information needed to evaluate miner performance.

The platform operator supports the ecosystem's operation, while participating validators independently calculate miner scores rather than receiving predetermined reward scores from the operator.

Together, these participants form a connected system where knowledge is shared, learning opportunities are created, and educational contributions are supported through competitive network incentives.

5.3 Tutor Agencies: A New Model of Educational Competition

A defining feature of this model is that independent tutor agencies are the primary competitors within the education network.

Instead of expecting every tutor to independently manage the financial, organizational, and operational challenges of teaching, we introduce a model where miners can build and manage small teams dedicated to sharing knowledge.

In the initial version, each registered miner hotkey can affiliate with up to five tutors. A miner may also participate as a tutor within its own agency.

Agencies are free to develop their own strategies for recruiting tutors, preparing educational content, organizing teaching schedules, supporting their teams, and improving overall performance.

For example, one agency might specialize in academic subjects, another might focus on practical professional skills, while others may develop unique teaching methods built around real-world experiences, creative demonstrations, or structured learning programs.

Agencies can also decide how to compensate their tutors through independently agreed arrangements, such as fixed payments, hourly compensation, or performance-based bonuses. Network rewards are received by miners, and the distribution of compensation within each agency remains its own responsibility.

This structure introduces competition at more than one level.

Tutors are encouraged to develop engaging and valuable ways of sharing knowledge, while agencies have an incentive to discover promising tutors, support their development, and experiment with different approaches to organizing educational experiences.

We do not expect any one organization to discover the best way to teach every subject or share every form of knowledge.

We want independent teams to explore different possibilities, learn from their results, and keep challenging established approaches to education.

5.4 How Open Competition Creates Economic Incentives

The central principle of our competitive model is straightforward: educational contributions generate measurable activity, and that activity helps determine how network incentives are distributed.

Tutors deliver live lectures through the platform, and students choose which sessions they want to attend. The platform collects eligible live audience engagement data from YouTube, which validators use to evaluate the contributions associated with each miner agency.

In the initial version, the primary performance measure is YouTube-reported live watch-minutes. An agency whose tutors collectively attract more eligible live viewing activity can achieve a higher relative performance score and potentially receive a greater share of network rewards.

This creates an economic incentive for agencies to bring knowledge to interested learners, develop engaging educational experiences, and maintain an active teaching presence.

Importantly, rewards are competitive rather than guaranteed. A lecture does not receive a fixed payment simply because it takes place, and an agency's earnings depend on network conditions and its performance relative to other participants.

We also recognize an important distinction: **attracting an audience is not the same as demonstrating successful learning.**

Live audience engagement provides a practical, measurable starting point for the initial incentive mechanism, but it cannot fully determine whether a tutor's methods are effective or whether students have meaningfully improved their understanding.

For this reason, our long-term development roadmap includes exploring stronger methods of evaluating educational effectiveness, learner progress, and the practical application of knowledge.

This initial mechanism provides a foundation for competition that could evolve toward more comprehensive ways of recognizing valuable teaching contributions.

5.5 Validation, Transparency, and Network Integrity

A competitive incentive system must have clear evaluation rules and a reliable way to assess participant contributions.

In our initial architecture, the platform operator collects live audience analytics directly from the platform-managed YouTube channels and makes the relevant records available to authorized validators.

Each validator independently calculates miner performance according to the subnet's published scoring rules. Validators also receive read-only YouTube Analytics access, allowing them to spot-check the platform's reported figures against their original source.

This approach is designed to support consistent scoring while providing an independent means of identifying discrepancies in reported data.

However, it is important to recognize that our initial architecture combines decentralized network incentives with centrally operated services. The platform manages broadcasting infrastructure and analytics collection, and validator checks do not eliminate every possible risk of incorrect or manipulated information.

Being open about these responsibilities and limitations is essential to building a credible ecosystem.

The detailed architecture, analytics collection process, scoring methodology, and validation procedures are explained in the following chapter.

5.6 A Continuously Evolving Education Ecosystem

Our plans reach beyond a network of tutors competing for rewards. We want to establish an environment where competition encourages continuous experimentation, new teaching approaches, and broader participation in the global exchange of knowledge.

As different tutor agencies enter the ecosystem, they can introduce new areas of expertise, teaching methods, learning sequences, and ways of communicating complex or practical ideas.

A method developed by one tutor may inspire others. An agency may discover a more effective way to organize a particular learning experience. Knowledge that was previously shared only within a profession, community, or personal network may become accessible to learners around the world.

We hope this diversity will foster a culture in which teaching is not treated as a fixed method, but something that can be explored, refined, and improved.

And as the platform develops, we intend to extend this ecosystem beyond live lectures. More advanced learning assessments, meaningful achievements, institutional collaboration, educational research, and practical opportunities could gradually strengthen the connection between acquiring knowledge and applying it in real life.

These developments will require careful testing, reliable evidence, and sustainable implementation. Open competition alone cannot guarantee educational quality, but we believe it can provide an important foundation for encouraging innovation and attracting people with valuable knowledge to share.

We are not trying to define one perfect way of teaching. We want different teaching methods to emerge, compete, and evolve, while making the knowledge and experience of people around the world more accessible to those who can benefit from it.

Sources [B01] [B02] [B03] [B04] [Y04] [Y10]

06

Network Architecture and Incentive Mechanism

6.1 Network Architecture Overview

Our education network is designed to connect real-world teaching activities with Bittensor's decentralized incentive system through a straightforward and transparent architecture.

The system brings together three main components: **the education platform, YouTube's broadcasting and analytics infrastructure, and the Bittensor subnet.** Each serves a distinct purpose while contributing to the operation of the broader ecosystem.

The education platform provides the environment where tutors and students connect. It manages tutor profiles, teaching plans, lecture scheduling, agency affiliations, and the services required to organize live educational sessions.

YouTube serves as the initial broadcasting infrastructure, allowing tutors to deliver live lectures through platform-managed channels while providing measurable audience engagement data.

The Bittensor subnet provides the competitive incentive mechanism. Through the subnet, independent miner agencies contribute teaching activities, while validators evaluate their measurable performance and submit weights that influence the distribution of network rewards.

The overall process follows a simple sequence:



This architecture allows us to focus on building an effective educational experience while leveraging established broadcasting technology and Bittensor's existing incentive infrastructure.

The platform is not trying to decentralize every part of education from the outset. It combines centrally managed educational services with decentralized network competition and independently calculated incentive scores.

6.2 Miner Authorization and Tutor Affiliation

Within our subnet, miners participate as independent tutor agencies. Each registered miner hotkey can affiliate with up to five active tutors, including the miner itself if it wishes to teach.

To ensure that teaching activities are correctly associated with legitimate subnet participants, tutor affiliations are established through a cryptographic authorization process.

When a tutor wishes to join an agency, they enter the miner's hotkey address on the education platform and receive a temporary verification code. The agency's miner then uses the subnet's command-line interface (CLI) to review and authorize the request by signing it with the corresponding coldkey and hotkey.

The platform verifies the signatures, confirms the miner's registration and ownership information on Bittensor, and checks that the agency has available tutor capacity.

Once the authorization is completed, the tutor becomes officially affiliated with the agency and receives a visible affiliation badge on their profile. Only affiliated tutors are eligible to schedule and deliver lectures through the platform.

Tutors can belong to only one agency at a time, although they may switch agencies according to defined rules. In the initial version, switching is generally permitted after seven days with the current agency, while leaving or being removed involves temporary restrictions on joining another agency.

These rules help maintain stable agency relationships, protect scheduled lectures, and prevent the manipulation of teaching attribution. Lectures that have already started remain attributed to their original agency, while future bookings follow the tutor's new affiliation after an authorized switch.

Through this system, miner agencies can independently recruit and manage tutors while maintaining verifiable relationships between their network identities and educational contributions.

6.3 Live Broadcasting and Analytics Collection

Our initial platform uses twelve category-specific YouTube channels, owned and managed by the platform, to deliver live educational sessions.

When an eligible tutor schedules a lecture, the platform automatically creates the corresponding YouTube broadcast and assigns dedicated streaming credentials for that session.

Tutors can use supported broadcasting software to transmit their lectures without requiring administrative access to the underlying YouTube channels.

The platform manages the broadcast lifecycle, including scheduled starts, completion, and the cleanup of session-specific streaming resources. A lecture that begins late still ends at its originally scheduled time, and a session that never goes live receives no scoring contribution.

All scheduling and eligibility calculations operate in UTC, ensuring consistent rules regardless of a tutor's geographical location.

Measuring Live Audience Engagement

The initial incentive mechanism uses YouTube-reported live audience engagement as its primary source of performance data.

Specifically, the platform collects **LIVE watch-minutes**, representing the estimated total minutes watched during a lecture's live broadcast.

Viewing activity generated from watching a recording after the live broadcast has ended is excluded from the initial incentive mechanism.

To provide a consistent evaluation period, each completed lecture follows an independent analytics collection schedule:

48 hours after completion

The lecture becomes eligible for scoring, and analytics collection begins.

Every 30 minutes

The platform retrieves the latest available analytics for that lecture.

120 hours after completion

The lecture's scoring eligibility ends, and its analytics record is deleted.

This establishes a **72-hour scoring window** for every eligible lecture, beginning 48 hours after its actual completion.

Each lecture follows its own schedule independently. The platform does not wait for other lectures to finish or synchronize all analytics collection into a single global cycle.

Throughout the scoring window, only the latest successfully collected analytics record is retained for each lecture. New results replace previous values rather than being added together, ensuring that repeated updates do not artificially increase a lecture's contribution.

This approach provides a consistent collection framework while keeping data management relatively simple and efficient.

6.4 Incentive Mechanism and Miner Scoring

The initial incentive mechanism evaluates the measurable live audience engagement generated by each miner agency's teaching activities.

Rather than providing fixed rewards for the number of tutors recruited or lectures delivered, the subnet uses the eligible audience engagement associated with completed lectures to calculate miner performance.

The initial scoring model is intentionally straightforward.

Lecture Contribution = Eligible LIVE Watch-Minutes

Miner Score = Sum of Eligible Lecture Contributions Attributed to the Miner

A miner's score is therefore determined by the combined eligible live watch-minutes generated by its affiliated tutors' lectures within their active scoring windows.

Each eligible lecture contributes to the agency to which it was attributed when delivered. If a tutor subsequently joins another agency, previously streamed lectures do not transfer their contributions to the new miner.

How Scores Influence Network Rewards

Validators calculate the relative performance of participating miners using the following reference formula:

$$\text{Miner Target Weight} = \frac{\text{Miner Score}}{\text{Total Scores of All Eligible Miners}}$$

For example, consider two miner agencies whose tutors generate the following eligible audience activity:

Miner Agency	Eligible LIVE Watch-Minutes	Target Weight
Agency A	9,000	66.67%
Agency B	4,500	33.33%
Total	**13,500**	**100%**



Agency A 66.67% **Agency B** 33.33%

In this example, Agency A generates twice as many eligible live watch-minutes as Agency B and therefore receives twice its relative target weight.

These target weights are submitted through Bittensor's validation mechanism, where the network's own rules determine how validator assessments influence actual emissions. Target weights do not represent guaranteed or identical percentages of token payouts.

Importantly, a lecture contributes only during its defined 72-hour scoring window. Once that window expires, its contribution is removed from subsequent calculations, allowing current educational activity to determine the ongoing competition.

This creates an incentive for agencies to continuously organize teaching activities, reach interested audiences, and develop educational offerings that encourage meaningful participation.

However, audience engagement is not a direct measurement of teaching quality or learning outcomes. A longer viewing duration does not necessarily mean that students have understood more.

We begin with a measurable, relatively simple indicator, knowing that more advanced evaluation methods will be needed before rewards can reflect demonstrated educational effectiveness.

6.5 Validator Operations and Reward Distribution

Validators play a central role in evaluating miner performance and connecting educational activity with Bittensor's incentive system.

The platform operator is responsible for collecting and maintaining the latest YouTube analytics, but **it does not directly determine the authoritative miner scores or assign validator weights**.

Instead, validators independently calculate scores using the published incentive rules and the analytics records provided by the platform.

Independent Scoring

Validators authorized by the platform operator access a dedicated data interface using cryptographically signed requests associated with their validator hotkeys.

At regular intervals, each validator retrieves a complete dataset of lectures currently eligible for scoring.

This dataset includes the relevant lecture information, miner attribution, eligibility periods, and latest available live audience analytics.

Validators independently process these records, calculate tutor and miner contributions, determine relative target weights, and submit network-compatible weights to Bittensor.

Because validators use the platform's commonly collected analytics rather than independently retrieving all YouTube statistics at different times, the system reduces inconsistencies caused by changes in YouTube's reported values between separate requests.

Validators using the same dataset, scoring rules, and relevant network state should produce identical scoring results, although their scores may differ when they retrieve valid datasets at different times.

Independent Analytics Verification

For additional accountability, validators receive read-only access to the platform's YouTube Analytics data.

This allows them to independently check selected lecture records against the original YouTube-reported values.

For example, a validator may compare a lecture's reported live watch-minutes with the corresponding data available directly from YouTube. If a meaningful discrepancy persists after the platform's next analytics refresh, it can be flagged for investigation.

These checks are intended to identify inconsistencies or potentially manipulated data. They do not replace the shared analytics records used for scoring and do not constitute cryptographic proof that every reported value is correct.

Handling Periods Without Eligible Rewards

When all miner scores are zero, or a validator cannot obtain a valid scoring dataset, there is no positive educational contribution to distribute weights toward.

In these circumstances, the initial mechanism uses Bittensor's burn approach, directing the validator's weight toward the subnet owner's UID rather than assigning artificial scores to miners.

This ensures that the system does not generate positive miner weights from nonexistent or unavailable educational activity.

Together, these procedures support consistent, independently calculated incentives and provide a practical way to check the underlying audience data.

6.6 Network Integrity and Technical Limitations

A credible incentive system should be clear about both what it measures and what it cannot yet guarantee.

Our initial architecture balances technical practicality, operational efficiency, and checkable performance data.

The use of established YouTube infrastructure allows us to deliver live education without developing an entirely new broadcasting network. At the same time, Bittensor provides an existing framework for open competition and decentralized incentive distribution.

However, this architecture also introduces important dependencies and limitations.

01

First, the platform remains responsible for certain centralized operations.

These include YouTube channel management, analytics collection, tutor affiliation records, and the authorization of validator access. Validators can check reported analytics against YouTube, but this does not eliminate every form of platform-level trust.

02

Second, live audience engagement is not equivalent to verified educational value.

The initial mechanism cannot establish that every viewer is a genuine learner, that all viewing activity reflects meaningful attention, or that a particular lecture has improved someone's knowledge or abilities.

03

Third, network rewards remain competitive and variable.

A miner's score influences its relative weight, but actual emissions depend on Bittensor's network rules, validator behavior, and broader operating conditions. Neither tutors nor agencies are guaranteed a fixed income from their teaching activities.

04

Finally, the system depends on external services and their applicable policies.

Broadcasting capabilities, analytics availability, data access, and permitted incentive-related uses must remain compatible with YouTube's requirements. The planned compliance review may require adjustments to the mechanism, and successful integration or future approval should not be assumed before it is established.

These limitations do not change the direction of the project. They define the practical boundaries of our initial implementation and give us a sounder basis for responsible development.

As the ecosystem matures, we intend to explore stronger approaches to participation verification, learning assessment, educational quality evaluation, and incentive design, supported by practical testing and real-world evidence.

The larger purpose is to connect the sharing of valuable knowledge with an open, competitive incentive network. A clear, measurable starting point gives us the technical foundation to move toward more meaningful recognition of teaching and learning as the system develops.

Sources [B01] [B02] [B03] [B04] [B05] [Y01] [Y02] [Y03] [Y04] [Y05] [Y06] [Y07] [Y08] [Y09] [Y10] [Y11]

07

Business Model and Sustainability

7.1 A New Economic Model for Education

Access to valuable knowledge should not always depend on a person's ability to pay. However, making education freely accessible does not mean that providing it comes without costs. Tutors invest their time, knowledge, and effort into teaching, while operating an educational platform requires continuous financial and organizational support.

The real challenge is creating an economic model that can support meaningful educational contributions without placing unnecessary financial barriers between knowledge and the people who need it.

Bittensor offers a different possibility.

Through Bittensor's competitive incentive system, independent tutor agencies can earn rewards for contributing measurable educational activity without relying entirely on payments collected from students.

In the initial version, students can freely access live lectures, while participating miner agencies compete for Bittensor subnet rewards based on the eligible live audience engagement generated by their tutors.

This introduces a new relationship between education and economic incentives: **tutors can be financially supported through independent agencies, while learners are not required to pay for ordinary access to their lectures.**

Still, Bittensor incentives alone do not guarantee the financial sustainability of every tutor agency or the platform itself. Network emissions are competitive and variable, and the company must also develop a reliable foundation for funding its own operations.

Our long-term business strategy therefore combines three complementary elements: competitive incentives for educational contributions, sustainable commercial services, and partnerships that help expand access to learning.

Together, these elements could support an education network where financial sustainability and broader learning opportunities reinforce one another.

7.2 The Economics of Tutor Agencies

At the center of our economic model are independent tutor agencies operated by Bittensor miners.

Each miner can organize a team of up to five affiliated tutors under a single registered hotkey. Within this structure, agencies operate as small, independent education businesses, responsible for recruiting capable tutors, supporting their activities, and developing their own strategies for attracting and engaging learners.

An agency may invest in experienced tutors, help promising individuals develop their teaching abilities, organize structured learning programs, or experiment with different methods of presenting valuable knowledge.

Unlike a conventional employment model in which every tutor is directly hired and compensated by the platform operator, **our ecosystem allows independent agencies to make their own organizational and financial decisions.**

Agencies can agree on compensation with their tutors, including fixed salaries, hourly payments, performance-based bonuses, or other mutually agreed arrangements.

Their potential income comes from participating in Bittensor's competitive incentive mechanism, where eligible live audience engagement contributes to their relative network performance.

This creates an opportunity for independent businesses to develop around teaching and knowledge sharing.

For example, an agency specializing in technical subjects may focus on practical demonstrations and structured skill development. Another agency may recruit experienced professionals to share insights from their careers, while others may explore creative teaching approaches, specialized subjects, or knowledge that is rarely accessible through conventional education.

Each agency can develop its own strategy, provided it follows the platform's participation and incentive rules.

However, earning network rewards is not the same as operating a profitable business. Agencies must carefully manage tutor compensation, preparation costs, operational expenses, and the uncertainty of future emissions.

We do not promise fixed earnings to miners or tutors. Instead, we aim to provide a competitive environment where agencies have the opportunity to build sustainable teaching operations through responsible management, valuable contributions, and continuous development.

We want independent education businesses to emerge, competing not only through the knowledge they offer, but also through how effectively they organize, support, and develop their tutors.

7.3 Platform Operations and Financial Sustainability

While Bittensor provides economic incentives for participating miner agencies, the education platform itself remains a real business with its own responsibilities and operating costs.

Developing and maintaining the platform requires investment in software engineering, broadcasting infrastructure, analytics collection, database services, network integration, security, moderation, technical support, and ongoing product improvements.

As the ecosystem grows, additional resources will also be needed for organizational management, educational development, marketing, partnerships, and compliance.

These costs cannot simply be assumed to be covered by the rewards earned by independent miners.

It is important to distinguish between **Bittensor network emissions and the company's own revenue**. Rewards earned by independently operated tutor agencies belong to those participants and are not automatically available to finance the platform's operations.

In the initial stage, our priority is to establish a functional education platform, demonstrate reliable network participation, attract capable tutors, and validate the practical value of our approach.

The platform will initially operate without student subscription fees or tutor lecture-booking fees. Its development and operations must therefore be supported by funding and resources actually available to the company, rather than assumed future revenue.

Over time, we intend to develop additional business activities that can generate sustainable income while preserving the accessibility of foundational education.

The purpose is not to turn every educational interaction into a commercial transaction. It is to build a financially responsible organization that can maintain the infrastructure, support the network, and expand the opportunities available to learners.

7.4 Long-Term Revenue Opportunities

As the platform demonstrates its value, several commercial opportunities may emerge from the learning community it serves.

Institutional Education Services	**Corporate Learning and Professional Development**	**Premium Learning Services**	**Educational Platform and Production Services**	**Content Monetization and Other Revenue Sources**

Rather than depending exclusively on student subscriptions, our long-term strategy is to provide additional services to institutions, businesses, organizations, and individuals who require more specialized educational experiences.

We intend to explore the following business opportunities.

Institutional Education Services

Schools, universities, training organizations, and other institutions may require specialized lectures, practical workshops, guest-tutor programs, or educational content that complements their existing offerings.

We plan to explore partnerships through which institutions can commission or support structured educational programs, professional knowledge-sharing initiatives, and other agreed services.

Corporate Learning and Professional Development

Businesses increasingly need practical ways to help employees develop new skills, understand emerging technologies, and adapt to changing professional requirements.

Our ecosystem could provide opportunities for companies to organize specialized training, sponsor professional learning programs, or access relevant expertise through experienced tutors and practitioners.

Premium Learning Services

Although general access to educational lectures will remain free in the initial version, future development may introduce optional premium services for learners seeking additional support.

These could include specialized tutoring, more personalized learning experiences, advanced educational programs, or other services that provide clear value beyond freely available lectures.

Low-cost subscriptions and other paid access models may also be considered where they are appropriate and technically feasible.

Throughout this expansion, we intend to preserve meaningful free learning opportunities and explore ways to support people who cannot afford additional services.

Educational Platform and Production Services

Organizations may also benefit from the platform's ability to coordinate tutors, organize learning programs, manage broadcasting, and support educational content delivery.

As our infrastructure and operational experience mature, we may develop commercial services around these capabilities for institutions, businesses, and other educational organizations.

Content Monetization and Other Revenue Sources

Eligible educational content may also create opportunities for revenue through YouTube monetization or other permitted content-related activities.

Such opportunities would depend on applicable platform policies, eligibility requirements, actual audience demand, and commercial feasibility.

These potential revenue streams represent our long-term business direction rather than established sources of income in the initial version.

We intend to introduce commercial services progressively, based on demonstrated demand, practical validation, and the ability to deliver meaningful value.

Commercial development should strengthen the education ecosystem, not undermine its central purpose of making valuable knowledge accessible to everyone.

7.5 Sponsorships, Donations, and Educational Access

Providing free educational content is an important step toward global accessibility, but it does not eliminate every barrier to learning.

For millions of people, access to education is still limited by unreliable internet connectivity, the cost of digital devices, inadequate learning environments, or the absence of suitable local support.

Addressing these challenges requires more than software development or network incentives.

Our long-term business strategy therefore includes building relationships with organizations, institutions, governments, companies, and individuals who share our commitment to wider educational access.

Through corporate sponsorships, philanthropic contributions, educational grants, and collaborative programs, we intend to explore initiatives that directly support people and communities facing significant barriers to learning.

These initiatives may include:

- Community learning hubs with shared internet access and learning devices.
- Connectivity and equipment support for underserved communities.
- Locally organized educational programs and facilitated learning sessions.
- Sponsored learning materials, practical workshops, and skill-development opportunities.
- Future scholarships, mentoring, and educational resources for learners who need additional support.

For example, a community learning hub could operate through an existing school, library, or community center, where a local partner provides suitable facilities and support while learners access educational content from the platform.

Similarly, a company or philanthropic organization could sponsor a specific educational program or help cover the cost of connectivity and learning resources for a defined group of learners.

These initiatives will depend on practical partnerships, transparent budgets, and measurable outcomes rather than broad promises of global expansion.

An important principle is that **funds intended to support educational access must remain distinct from ordinary miner rewards and the company's general operating revenue**.

Donations and restricted sponsorships should be used for their agreed purposes, with clear reporting on how resources are allocated and what the programs actually achieve.

Basic educational support should be based on genuine need, not on a learner's ability to generate engagement statistics or participate in token-related activities.

By pairing free education with targeted support for real-world barriers, we hope to reach people who might otherwise remain excluded.

7.6 Building a Sustainable Global Education Ecosystem

The longer-term model brings educational contribution, learner participation, commercial sustainability, and wider access into a relationship where each can strengthen the others.

Bittensor's competitive incentives can encourage independent agencies to organize tutors and introduce more learning opportunities. As the variety and usefulness of available knowledge expand, more people may discover reasons to participate in the platform and return for further learning.

A growing and engaged learning community can, in turn, create opportunities for institutional collaboration, specialized educational services, business partnerships, and other sustainable sources of income.

As the company develops these revenue sources, it may become better positioned to invest in its infrastructure, improve educational services, support research, and contribute resources toward expanding access.

This creates the possibility of a reinforcing cycle:

01 **Competitive Teaching Incentives** → **02** **More Learning Opportunities** → **03** **Greater Learner Participation**

04 **Commercial and Partnership Opportunities** → **05** **Sustainable Development and Expanded Access**

However, we recognize that this cycle will not emerge automatically. Attracting viewers does not guarantee educational effectiveness, and growing a platform does not necessarily create a profitable business.

Each stage must be supported by real demand, reliable operations, responsible financial management, and evidence that the services and programs deliver meaningful value.

We will begin with a focused platform, demonstrate its effectiveness, and then develop the services, partnerships, and funding structures needed for sustainable growth.

Educational accessibility and commercial success need not be opposing goals. A well-designed business model can create economic opportunities while helping more people reach knowledge they might otherwise never encounter.

The future we are working toward is more than a financially sustainable platform: a global network where sharing knowledge opens opportunities for tutors, learning opens doors for students, and continued growth helps education reach people around the world.

Sources [B04] [E03] [P02]

08

Growth, Partnerships, and Global Impact

8.1 Beyond an Online Education Platform

This project has never been about building just another online education platform. We want valuable knowledge to reach more people, teaching methods to keep evolving, and learning to open doors in the real world.

Reaching that vision will take more than technology and economic incentives. Even the most advanced platform cannot address global education challenges on its own; it needs cooperation with people, institutions, communities, and organizations that understand what learners actually need.

That is why our long-term strategy gives real weight to partnerships, educational research, improved access, and opportunities for people to put what they learn into practice.

We hope to bring universities, schools, independent tutors, experienced professionals, businesses, governments, nonprofit organizations, researchers, and local communities together around one purpose: **making valuable knowledge and learning opportunities more accessible, useful, and relevant to people around the world.**

Global impact cannot be achieved simply by announcing partnerships or entering new regions. It must grow from practical initiatives, dependable cooperation, measurable results, and a willingness to improve.

We will start with focused educational programs, prove their value in real settings, and expand what works through stronger partnerships and lasting support.

8.2

Collaboration with Universities and Educational Institutions

Schools and universities remain among the world's most important sources of knowledge, research, and academic expertise. We do not seek to replace these institutions. We want their knowledge and experience to reach people well beyond their existing classrooms.

We plan to explore partnerships with universities, schools, academic departments, professional training organizations, and other institutions to bring high-quality learning experiences onto the platform.

These collaborations could allow professors, researchers, experienced tutors, and subject specialists to share their expertise with learners who may never have the opportunity to attend their institutions in person.

For example, a university professor could deliver a public lecture series on scientific discoveries, an engineering department could organize practical workshops, or a professional training institution could introduce specialized knowledge relevant to emerging industries.

We also see room for collaborations that connect academic knowledge more closely with real-world practice. A researcher might explain a scientific concept, while an experienced industry professional demonstrates how that concept is applied in actual working environments.

Such opportunities could benefit students already pursuing formal education, people unable to attend universities, and adults seeking to expand their knowledge throughout their lives.

Initially, we will focus on practical partnerships: recurring guest lectures, educational workshops, and structured public learning series. More advanced collaborations, including jointly developed programs, research initiatives, or recognized educational achievements, may be explored as the ecosystem matures.

Knowledge developed within institutions deserves more opportunities to benefit people beyond their physical classrooms.

Connecting established expertise with an open global learning platform can make knowledge more accessible and give institutions and independent tutors new ways to contribute to lifelong learning.

8.3 Learning from the World's Experience

One of the most compelling possibilities is to connect learners directly with people who have built up extraordinary knowledge over a lifetime.

Not all valuable knowledge comes from academic research or formal teaching. Much of it develops through years of professional work, practical experimentation, difficult decisions, personal achievements, failures, and experiences that cannot always be fully captured in textbooks.

This knowledge deserves a place in the global learning network.

Imagine learning about entrepreneurship from someone who has spent decades building businesses, understanding engineering through the experiences of professionals who have solved real-world problems, or discovering creative techniques directly from artists who have developed their skills over many years.

Likewise, an experienced farmer, carpenter, technician, designer, or independent researcher may possess practical knowledge that could be extraordinarily useful to someone elsewhere in the world.

We intend to actively invite accomplished professionals, entrepreneurs, researchers, creators, industry leaders, and other knowledgeable individuals to share their experiences through lectures, discussions, demonstrations, and practical learning programs.

Where appropriate, well-known public figures and influential professionals may also be invited to participate. Their experiences and public reach could help introduce broader audiences to valuable subjects and encourage greater interest in lifelong learning.

However, we believe that recognition or popularity alone does not define the value of someone's knowledge. A highly experienced local professional may provide more meaningful learning than a famous individual with little practical insight into the subject.

What matters to us is what people can genuinely teach, how their experiences can help learners, and whether their contributions lead to deeper understanding or practical action.

Company-organized guest programs may be supported through sponsorships or dedicated budgets, separately from ordinary miner competition, while individuals recruited directly by independent tutor agencies can participate under the standard subnet rules.

Humanity's accumulated knowledge is one of the world's greatest resources. We want to unlock more of it for people who might otherwise never have the chance to learn from those who possess it.

8.4 Educational Research and the Continuous Improvement of Teaching

A central purpose of the project is to encourage better teaching methods through open competition. Yet competition and popularity alone cannot tell us which approaches actually help people learn.

Understanding how people learn, retain knowledge, develop practical skills, and apply new ideas requires careful observation and independent research.

We therefore plan to collaborate with universities, educational research institutes, academic researchers, and qualified independent evaluators to study different teaching approaches within the platform.

Rather than assuming that one method is universally superior, we want to explore how different explanations, learning sequences, practical demonstrations, interactive discussions, and other approaches affect learners with different backgrounds and needs.

For example, researchers could investigate whether practical problem-solving lectures help students understand certain concepts more effectively than conventional presentations, or whether structured learning sequences improve knowledge retention compared with isolated educational sessions.

Research may also examine how learning outcomes differ across subjects, languages, age groups, educational backgrounds, and levels of prior knowledge.

These findings could help not only our platform, but also tutors and educational institutions looking to improve their teaching methods.

Importantly, educational research must remain credible and independent. Participation should respect learner privacy and consent, while study results should be evaluated honestly, including findings that challenge our expectations.

Over the longer term, we want to move beyond measuring content consumption and understand **how effectively knowledge is learned, retained, and applied**.

This research can also inform future improvements to our incentive mechanism, potentially allowing the ecosystem to recognize meaningful educational results more directly as reliable assessment methods become available.

Beyond sharing knowledge, the platform should become a place where better ways of teaching are discovered, tested, and refined through real-world evidence.

8.5 Community Learning Hubs and Connectivity Initiatives

Online education can expand learning opportunities enormously, yet millions of people still face barriers that prevent them from accessing it.

In many communities, reliable internet connectivity remains expensive or unavailable. Some learners lack suitable devices, consistent electricity, quiet learning environments, or people who can support their educational progress.

Simply offering free online lectures does not automatically remove these barriers.

To help address them, we intend to explore the development of **community learning hubs** through partnerships with local organizations, educational institutions, governments, and connectivity providers.

These hubs could operate within existing schools, libraries, community centers, training facilities, or other suitable spaces, allowing groups of learners to access educational resources through shared infrastructure.

For example, a community center equipped with a reliable internet connection, shared computers, and a suitable display could provide a place for learners to participate in live sessions, follow structured teaching plans, and study together under the guidance of a local facilitator.

Depending on local needs and available funding, support could include internet access, digital devices, learning materials, electricity solutions, accessibility equipment, and basic educational assistance.

We do not plan to begin by building new schools or telecommunications networks. A more practical starting point is to work with existing facilities and trusted local partners, helping them support learning more effectively.

International initiatives such as the UNICEF–ITU Giga partnership demonstrate the importance of cooperation between governments, connectivity providers, and other organizations in expanding meaningful digital access.

We will explore where the platform and its supporting resources could complement those broader efforts.

We also recognize that live streaming requires adequate connectivity. Learning hubs in areas with unreliable internet may need alternative arrangements, including authorized lecture replays, locally available learning materials, or other delivery methods developed in later stages.

The initial platform's live-audience scoring will remain separate from any independently measured participation at physical learning hubs.

Most importantly, community programs must have responsible local management, suitable learner safeguards, and funding for their ongoing operation, not merely the installation of equipment.

Step by step, we want to bring valuable learning experiences closer to communities facing the greatest barriers, even where personal internet access remains limited.

8.6 Donations, Sponsorships, and Educational Access Programs

Many individuals, businesses, foundations, and organizations share the desire to make education more accessible. Turning that desire into useful support requires clear goals and a practical understanding of how resources will improve people's opportunities.

As the platform develops, we plan to establish transparent sponsorship and donation programs through which supporters can contribute to specific educational needs and initiatives.

For example, a sponsor may wish to support internet connectivity for a community learning hub, provide devices to learners who cannot afford them, fund a practical skills program, or support a series of lectures in an underserved community.

Rather than treating all contributions as general fundraising, we want supporters to understand what their resources will provide, who is responsible for delivering the program, and how its results will be measured.

Programs may be organized around particular communities, regions, educational subjects, or practical needs, depending on local circumstances and the availability of responsible delivery partners.

Corporate sponsorships, philanthropic contributions, educational grants, and government-supported initiatives could become important sources of funding for these activities.

Where appropriate, the company may also allocate a portion of its own realized income toward educational access and development, subject to its financial capacity and established funding policies.

We will keep company operations, independent miner rewards, and funds contributed for specific educational purposes clearly separate.

Access support should be provided according to genuine needs and agreed program objectives, rather than requiring students to generate viewing activity, participate in cryptocurrency transactions, or achieve high examination results.

In the longer term, these programs may also support scholarships, advanced learning opportunities, practical projects, and access to specialized educational resources.

The aim is to give people and organizations a direct way to support worthwhile education initiatives, while opening learning opportunities that might otherwise remain out of reach.

8.7 Global, Regional, and Government Partnerships

Addressing global educational challenges requires cooperation across many different levels, from local communities to national institutions and international organizations.

We will explore partnerships with organizations whose work aligns with our mission of widening access, supporting lifelong learning, and improving educational opportunities.

At the global level, relevant organizations and initiatives to approach may include UNESCO and its Global Education Coalition, UNICEF and the UNICEF–ITU Giga initiative, the Global Partnership for Education, the World Bank, Education Cannot Wait, and other international education and development organizations.

Each of these organizations operates within its own mandate, funding arrangements, and partnership requirements. The priority would be to identify specific areas where our teaching resources, technology, research, or practical programs could make a useful contribution.

For example, cooperation with an education-focused organization might involve providing specialized teaching programs, contributing educational expertise, supporting an existing digital learning initiative, or participating in a locally managed project where our services address a demonstrated need.

At the regional level, we intend to explore relationships with educational development organizations and networks, including ADEA in Africa, SEAMEO in Southeast Asia, OEI in Ibero-American education cooperation, and relevant organizations supporting education across the Arab region and other parts of the world.

National and local governments may also become important partners where our programs can complement existing education, skills-development, digital inclusion, or community-learning initiatives.

We will not approach institutions with only a grand proposal and expect immediate large-scale support.

Strong partnerships begin with a clearly defined problem, a practical contribution, responsible implementation, and evidence that the proposed solution can deliver value.

We will begin with smaller partnerships and educational pilots, build a record of credible results, and explore larger collaborations as our capabilities and experience grow.

These organizations represent potential partnership directions, not established agreements or guaranteed sources of funding.

We hope to connect the flexibility of our education network with the experience, infrastructure, and reach of organizations already working to improve learning around the world.

8.8 Regional Programs, Real-World Events, and Talent Development

Learning should not end when a lecture finishes. Knowledge becomes especially valuable when people can apply it, explore new possibilities, and receive support as they pursue their interests and goals.

As the network grows, we plan to organize regional learning initiatives with local institutions, community organizations, businesses, and participating tutors.

These may include practical workshops, educational seminars, technology demonstrations, project challenges, mentoring programs, and events that connect learners with experienced professionals.

For example, learners who have followed a series of programming lectures could participate in a practical development workshop. People studying entrepreneurship might present business ideas to experienced founders, while students interested in engineering could work on projects addressing challenges relevant to their communities.

We also want accomplished tutors, researchers, entrepreneurs, and other experienced people to take part in regional events and meet learners directly.

These events would serve two important purposes.

First, they could provide learners with practical experiences, personal guidance, and opportunities to demonstrate what they have learned.

Second, they could help us understand the actual educational needs of different communities, including barriers that cannot be identified through online statistics alone.

We favor recurring, locally supported programs over isolated large-scale events. A successful initiative should create opportunities for continued learning, mentorship, and practical development after the event has ended.

Over time, these activities may also support the discovery of promising individuals whose abilities, ideas, or commitment deserve further development opportunities.

Talent should not be recognized solely through examination scores, public popularity, or the ability to afford travel to an event. Practical work, demonstrated understanding, creativity, persistence, and independently evaluated achievements may all contribute to a more meaningful assessment.

Where possible, remote participation and support for learners facing financial or geographical barriers should remain part of the design.

These programs are meant to connect what people learn with the confidence, resources, and opportunities they need to put that knowledge to work.

8.9 Connecting Learning with Bittensor and Emerging Technologies

Bittensor also offers a path to connect education with the wider world of decentralized technology, artificial intelligence, and computing resources.

Bittensor brings together independently operated subnets developing different services and capabilities. Over time, cooperation with willing subnet operators and technology providers could open valuable opportunities for learners interested in these fields.

For example, students developing skills in artificial intelligence, programming, scientific computing, or related fields may benefit from access to computational resources, AI services, development tools, specialized software, or experienced technical mentors.

We plan to seek partnerships that could provide learners with sponsored or subsidized access to these resources for specific educational purposes.

These opportunities might support practical learning projects, independent research, technical experimentation, and the development of useful applications.

For example, a learner who develops a promising AI project could potentially receive access to a limited amount of computing resources, mentorship from experienced developers, or support for further experimentation.

Likewise, learners developing practical applications or demonstrating meaningful technical progress may eventually qualify for scholarships, sponsored projects, or other educational opportunities.

Importantly, these resources would require explicit agreements, available funding, and appropriate eligibility rules. Operating a Bittensor subnet does not automatically provide access to the services or resources of other independently operated subnets.

Any such cooperation would need a clear understanding of what each organization or technology provider contributes and how learners would benefit.

Over time, we hope to develop a broader pathway connecting education with practical opportunity:

01 **Learning**	→ 02 **Skill Development**	→ 03 **Practical Projects**
04 **Verified Achievements**	→ 05 **Mentorship and Resources**	→ 06 **Real-World Opportunities**

This is an important part of the longer-term vision: helping people move beyond acquiring knowledge to develop their abilities and create something valuable with what they have learned.

8.10 Responsible Growth and Measuring Real-World Impact

The vision is global, but growth means more than attracting users, increasing lecture activity, or announcing partnerships.

A successful education ecosystem must demonstrate that it is providing genuine value to learners, creating worthwhile opportunities for tutors, and developing sustainable relationships with the organizations and communities it serves.

As the organization expands, we plan to establish clear responsibilities for growth, marketing, educational development, partnerships, and operations.

Our growth activities will focus on introducing the platform to people who can genuinely benefit from it, attracting capable tutors, supporting valuable educational content, and encouraging continued learning rather than simply maximizing initial registrations.

Partnership development will focus on practical agreements, delivered programs, and lasting relationships instead of treating institutional recognition as an achievement by itself.

We also intend to measure the ecosystem's development through several important areas:

Educational Participation	The availability of meaningful learning opportunities, the reliability of delivered lectures, and the extent to which learners continue participating over time.

Teaching Development	The diversity of knowledge shared, the development of structured learning experiences, and evidence that different teaching methods help learners understand and apply knowledge.
Educational Accessibility	The effectiveness of supported learning programs, improvements in access for underserved communities, and the resources required to maintain those opportunities.
Real-World Outcomes	Where suitable independent evidence is available, the knowledge, skills, practical projects, and further opportunities learners develop through their participation.
Organizational Sustainability	The delivery of funded programs, the strength of institutional relationships, responsible financial management, and the ability to support continued platform development.

We recognize that these outcomes cannot all be measured through the initial subnet's audience engagement statistics. Different objectives require different forms of evidence, and future educational assessments must be developed carefully before they can support stronger claims.

We also understand that regional expansion must respect local conditions, languages, educational needs, accessibility requirements, and applicable laws. A model that works effectively in one community may require significant adaptation elsewhere.

Rather than expanding everywhere at once, we want to build successful educational initiatives that can grow through experience, cooperation, and demonstrated value.

The real measure of this project's success will not be just the number of lectures delivered, the network activity generated, or the size of its global audience.

It will be the extent to which people gain access to knowledge they previously could not reach, develop abilities they otherwise might not have discovered, and find new opportunities to improve their lives.

That is the impact we are working toward: bringing human knowledge, open competition, modern technology, and global cooperation together to make lifelong learning a richer opportunity for everyone.

Sources [E06] [E08] [P01] [P02] [P03] [P04] [P05] [P06] [P07] [P08] [P09] [P10] [P11] [P12]

09

Development Roadmap

9.1 Our Development Philosophy

The scale of our vision calls for progress built on real achievements, not promises or predetermined timelines.

Our roadmap therefore follows a **milestone-driven, proof-of-concept approach**. Each phase focuses on delivering specific capabilities, demonstrating their effectiveness in practice, and establishing a reliable foundation for further development.

Technical development, educational improvement, and business expansion will progress together wherever practical. However, each major advancement must be supported by evidence that the previous foundations are working as intended.

Our guiding principle is simple: **Build, demonstrate, evaluate, improve, and expand.**

Phase 1
Launch the Education Platform and Bittensor Subnet

Phase 2
Establish a Competitive and Growing Teaching Ecosystem

Phase 3
Improve Teaching Effectiveness Through Research and Evidence

Phase 4
Expand Through Partnerships and Community Access

Phase 5
Introduce Verified Learning and Advanced Incentives

Phase 6
Build a Global Learning-to-Opportunity Ecosystem

Phase 1

Launch the Education Platform and Bittensor Subnet

The first milestone is a fully operational education platform connected to Bittensor's competitive incentive network.

The initial release will introduce the essential learning experience, including tutor and student profiles, structured teaching plans, educational categories, live lecture scheduling, and free access to learning sessions.

Alongside the platform, we will implement the tutor-agency model, allowing miners to organize affiliated tutors and participate in the subnet's performance-based incentive mechanism.

YouTube-powered live broadcasting, audience analytics collection, independent validator scoring, and network reward operations will form the technical foundation of the initial ecosystem.

The platform will initially measure eligible live audience engagement, while more advanced learning assessments and commercial features remain outside the first release.

Following the working product's launch, we intend to complete the applicable YouTube compliance review and respond to any requirements affecting the incentive mechanism.

Proof of Concept

Demonstrate a reliable, functioning ecosystem where independent miner agencies deliver real educational sessions, learners participate freely, and validators consistently evaluate eligible teaching activity through the Bittensor network.

Phase 2

Establish a Competitive and Growing Teaching Ecosystem

Once the platform is operational, the next priority is to demonstrate that open competition can attract capable tutors and sustain a steady flow of educational content.

We will focus on expanding participation from independent tutor agencies, recruiting tutors with diverse knowledge and life experiences, and encouraging the development of valuable teaching plans and recurring lecture series.

At the same time, we will improve subject discovery, learning-series navigation, tutor performance transparency, and the overall experience for students.

We will also study how agencies organize their tutors, develop teaching approaches, attract interested learners, and manage operations within the competitive incentive system.

Growth will be evaluated not simply through registration numbers, but through consistent teaching activity, returning learners, useful educational content, and the practical economics of agency participation.

Proof of Concept

Demonstrate sustained participation from active tutor agencies and returning learners, with regularly delivered teaching programs and evidence that the competitive model can support meaningful educational activity.

Phase 3

Improve Teaching Effectiveness Through Research and Evidence

With the platform working, the focus shifts from providing access to understanding how effectively knowledge is taught and learned.

We will introduce improvements to structured learning experiences, alongside optional educational exercises, tutor-prepared quizzes, and appropriate participation-feedback mechanisms.

These capabilities will help tutors understand learner difficulties, refine their explanations, and develop more effective approaches to teaching.

In parallel, we plan to collaborate with universities, educational researchers, and qualified independent evaluators to investigate teaching methods and their effects on understanding, retention, and practical application.

Artificial intelligence may progressively assist with educational content review, question evaluation, and selected assessment processes, where its reliability and usefulness can be demonstrated.

At this stage, new learning measurements will primarily support educational improvement and research rather than directly determine miner rewards.

Proof of Concept

Demonstrate measurable educational value through structured learning programs, meaningful learner feedback, and credible research or evaluation results that extend beyond audience engagement alone.

Phase 4

Expand Through Partnerships and Community Access

With a reliable educational foundation in place, we plan to expand through institutions, organizations, and locally supported initiatives.

We will develop practical collaborations with universities, schools, experienced professionals, businesses, research organizations, and other partners to introduce specialized learning programs, guest lectures, practical workshops, and educational opportunities.

Alongside these activities, we will begin selected community-access initiatives designed to address barriers that free online education alone cannot resolve.

These may include community learning hubs, shared connectivity and devices, locally facilitated study programs, and region-specific educational support funded through sponsorships, donations, or institutional cooperation.

We will also explore regional events that connect online learning with practical experiences, local knowledge, and community needs.

Initial programs will remain focused and manageable, using existing infrastructure and responsible local partners wherever possible.

Proof of Concept

Successfully deliver funded educational partnerships and community-access programs that demonstrate genuine learner participation, measurable benefits, reliable operations, and a practical path toward continued support.

Phase 5

Introduce Verified Learning and Advanced Incentives

A defining long-term goal is to move from rewarding measurable audience engagement toward recognizing genuine educational achievement.

Building on the evidence developed in earlier phases, we intend to introduce more advanced approaches to evaluating learning progress, understanding, knowledge retention, and practical skills.

These may include independently developed examinations, verified practical assignments, project-based assessments, and other methods appropriate to different fields of knowledge.

A central priority will be establishing evaluation methods that are sufficiently independent, reliable, and resistant to manipulation, especially when assessment outcomes may influence financial incentives.

Potential improvements to the Bittensor incentive mechanism will first be tested separately from the active reward system, allowing us to evaluate their fairness, accuracy, cost, and effect on different tutors and learning subjects.

Only methods supported by credible evidence will be considered for integration into the network's scoring mechanism.

Proof of Concept

Demonstrate reliable and independently verifiable measurements of learning outcomes that can support meaningful educational recognition and, where appropriate, a more advanced Bittensor incentive model.

Phase 6

Build a Global Learning-to-Opportunity Ecosystem

In the longer term, the network should connect access to knowledge with opportunities for personal, professional, and practical development.

As reliable assessment and partnership capabilities mature, we intend to introduce educational achievements, sponsored learning resources, project challenges, scholarships, mentoring, and other opportunities that help learners apply their knowledge.

Through agreements with technology providers and participating Bittensor subnet operators, we may also provide selected learners with access to AI tools, computing resources, and specialized development environments.

At the same time, we intend to strengthen the company's financial sustainability through institutional learning services, corporate education programs, specialized training, and optional premium educational offerings, while preserving meaningful free learning opportunities.

Successful community programs and institutional partnerships may then be expanded into additional regions, supported by local organizations, suitable infrastructure, and sustainable funding arrangements.

We want a repeatable model in which educational contribution, verified learning, practical opportunities, and economic sustainability strengthen one another.

Proof of Concept

Demonstrate that verified learning can lead to meaningful opportunities, that commercial services can generate sustainable value, and that successful educational programs can be responsibly replicated across different communities and regions.

9.2 Continuous Development and Responsible Expansion

These phases represent our intended development progression, not a rigid calendar. Different initiatives may advance in parallel when their requirements have been satisfied.

For example, university outreach, tutor recruitment, educational research discussions, and partnership development can begin during the initial stages rather than waiting for later technical capabilities.

However, major commitments will remain dependent on practical evidence. Advanced incentives require credible assessment methods, community programs require sustainable local support, and broader expansion requires successful operating models.

We will continuously evaluate the platform's development according to technical reliability, genuine educational value, learner participation, financial sustainability, and real-world impact.

This roadmap is not just a schedule of features. Each proven stage should lay stronger foundations for better teaching, broader access to knowledge, and more rewarding opportunities for people around the world.

Sources [B01] [B03] [Y01] [Y04] [Y08] [Y09] [P02] [P11]

10

Challenges, Limitations, and Responsible Development

Building a global education ecosystem brings difficult technical, economic, and educational challenges.

Open competition and modern technology cannot resolve every educational problem on their own. Our responsibility is to understand their limits, respond thoughtfully, and improve the system through practical experience and reliable evidence.

10.1 Technical and Operational Challenges

Our initial platform relies on established infrastructure, particularly YouTube for live broadcasting and audience analytics, alongside Bittensor for decentralized network incentives.

This approach allows us to build efficiently, but it also creates dependencies on third-party services, API availability, operational reliability, and applicable platform policies.

YouTube's compliance requirements, including the planned review of our analytics-based incentive mechanism, may require adjustments to the initial design. We will address these requirements as the platform develops, while prioritizing reliable operations, security, and responsible scalability.

10.2 Fair Competition and Network Integrity

Open competition creates opportunities for innovation, but it also introduces challenges involving fairness, manipulation, and unequal advantages between participants.

Tutors working in different subjects, languages, or regions may naturally attract different audience sizes. Furthermore, artificial engagement and other forms of manipulation could undermine the integrity of performance-based incentives.

Our initial system uses consistent scoring rules, YouTube-reported analytics, and independent validator checks to support credible evaluation. However, these measures cannot eliminate every potential risk, and the platform retains certain centralized responsibilities.

We will keep evaluating these limitations and strengthen network integrity as more reliable methods become available.

10.3 Measuring Real Educational Value

One of our most important challenges is distinguishing audience engagement from genuine educational effectiveness.

Our initial incentive mechanism measures live audience watch-time, which provides a practical starting point for evaluating participation but does not directly establish how much students understand, remember, or apply.

Educational progress requires stronger evidence than popularity alone.

For this reason, our roadmap includes independent educational research, learning assessments, and practical evaluation methods that may eventually support more comprehensive incentive mechanisms.

We will develop these capabilities carefully, grounding future improvements in credible evidence rather than assumptions.

10.4 Financial Sustainability and Global Accessibility

Bittensor rewards are competitive and variable, and they cannot guarantee stable income for every participating tutor agency. Likewise, maintaining and expanding the platform requires sustainable funding beyond network incentives.

We plan to address these challenges through responsible operations, practical commercial opportunities, and partnerships supported by demonstrated value.

Global accessibility presents additional difficulties. Free online education does not automatically overcome limitations in internet connectivity, digital devices, language, or local learning support.

We therefore plan to expand educational access progressively through suitable partnerships, community initiatives, and realistically funded programs rather than promising immediate universal availability.

10.5 Our Commitment to Responsible Development

Long-term success will depend not only on technological innovation, but also on transparency, sound decisions, and the willingness to learn from real-world experience.

We are committed to clearly distinguishing demonstrated achievements from future ambitions, protecting the interests of learners and tutors, respecting applicable requirements, and improving the ecosystem through continuous research and practical validation.

We do not expect every idea to succeed immediately or every challenge to have a perfect solution. By facing difficulties openly, learning from experience, and refining our methods, we hope to build something more valuable with each stage.

The purpose remains clear: make humanity's knowledge and experience more accessible, encourage better teaching through open competition, and create opportunities for people to learn, grow, and improve their lives. Education should not be limited by income, birthplace, or circumstance. These convictions will guide our decisions as the platform develops.

Sources [E03] [E06] [B03] [B04] [Y07] [Y08] [Y09] [Y10] [Y11]

Conclusion

Knowledge is not simply measured by the number of books we read, the hours we spend attending lectures, or the academic qualifications we achieve. At its heart, **knowledge is about understanding.** And sometimes, the right explanation, perspective, or guidance drawn from someone's years of experience can help us reach that understanding far more quickly and deeply.

Throughout history, humanity has advanced by building on the discoveries, knowledge, and experiences of those who came before us. Today, technology is developing at an extraordinary pace, accelerated by artificial intelligence, and the information available to us is expanding faster than ever.

Yet more information does not necessarily mean better understanding. We are surrounded by countless opinions, explanations, and recommendations, many of which may be inaccurate, misleading, or simply unsuitable for our individual circumstances.

This makes one challenge increasingly important: **finding the right knowledge, the right perspective, and the right guidance to understand the world and make better decisions.**

Tutors have an extraordinary role to play in addressing this challenge. By sharing not only what they know, but also the understanding they have gained through years of experience, tutors can help others discover new perspectives, avoid unnecessary mistakes, and develop a deeper understanding of the things that matter to them.

Meaningful learning often develops through three simple but powerful questions:

01	→	02	→	03
“What is it?”		**“How does it work?”**		**“Why must it work this way?”**

The first question introduces us to knowledge. The second helps us understand its principles and applications. But the third takes us further. It encourages us to question existing assumptions, explore deeper possibilities, and perhaps discover entirely new ways of thinking.

This progression (from simply receiving information to understanding it, questioning it, and eventually developing our own ideas) can transform how we approach challenges, make decisions, and pursue our ambitions.

Think about some of the world's most successful and influential entrepreneurs, such as Steve Jobs and Bill Gates. Both left university without graduating **[H01] [H02]**, yet went on to achieve extraordinary things that transformed entire industries. Their success was not defined by academic degrees, impressive grades, or simply following a conventional path toward a career. Instead, they pursued their curiosity, challenged established ideas, and sought a deeper understanding of the technologies and possibilities around them. They went beyond asking **“What is it?”** or **“How does it work?”** to asking the more powerful question: **“Why must it work this way? And could there be a better way?”**

That kind of thinking can change the direction of someone's life.

This does not mean that schools and universities are unnecessary. They are essential institutions where we gain knowledge, develop important foundations, and discover new possibilities. But education should never be limited to what we learn within their walls or the qualifications we receive.

Beyond traditional classrooms lies a vast world of knowledge, experience, and understanding. Some of the most valuable lessons come from years of professional work, personal challenges, unexpected discoveries, successes, and failures. Sometimes, discovering just one new perspective can completely change how we understand the world, what we believe is possible, and what we ultimately achieve.

This is the future we want to help create through our Bittensor-powered education ecosystem.

A world where tutors are encouraged to share their deepest knowledge and understanding, where different teaching methods can continuously evolve through open competition, and where people everywhere have greater opportunities to learn from the experiences of others.

We do not believe education should end with simply knowing something. It should inspire us to understand it, question it, apply it, and eventually discover something new.

Those opportunities should not be determined by someone's financial circumstances, geographical location, academic background, or the chances they happened to receive in life.

We want to make humanity's accumulated knowledge and experience more accessible, so that more people can turn understanding into ability, curiosity into discovery, and learning into achievements that matter.

The doors to knowledge are open.

Dream boldly. Never stop asking why. Learn from the experiences of those who came before you, challenge what seems impossible, and turn your understanding into something extraordinary.

Sources [H01] [H02] [E08]

Let's build that future together.

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