Plunder Academy Final Report

Milestone 4 Completion & Impact Assessment

Prepared for: **GZIL Collective Committee** | Date: **December 9, 2025**

Executive Summary

High-level overview of Plunder Academy's impact and milestone achievements

Plunder Academy has successfully completed all Milestone 4 deliverables and established itself as a comprehensive educational platform for EVM developers within the Zilliqa ecosystem. Since launch, the platform has onboarded **57 active learners** who have collectively completed **93 learning modules** and generated **356 AI-assisted interactions**.

The platform achieved an **84% overall user satisfaction rate** based on 29 feedback submissions, with our AI Chat Assistant reaching **98% satisfaction** and the Code Reviewer tool at **92% satisfaction**. These metrics demonstrate strong product-market fit within the developer education space.

On-chain activity across our deployed smart contracts totals **219 transactions** spanning both testnet and mainnet environments, indicating real engagement with hands-on practical exercises. The open-source release of our core repositories enables community contribution and potential recreation of the AI tooling architecture.

TOTAL USERS

57

Active learners on platform

AI INTERACTIONS

356

6.2 per user average

SATISFACTION RATE

84%

Based on 29 submissions

MODULES COMPLETED

93

1.6 per user average

Milestone 4 Deliverables

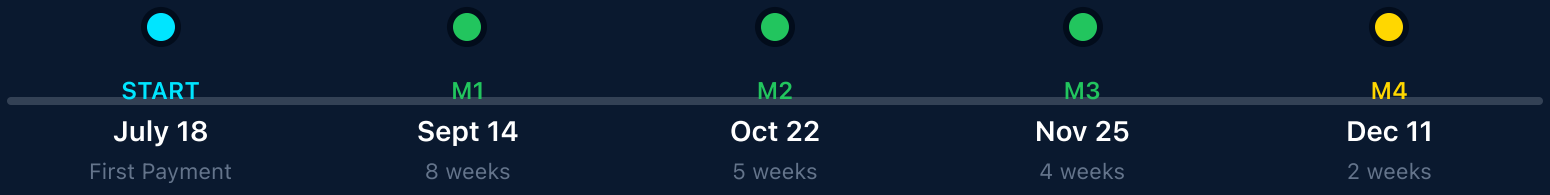
Status of all required deliverables for milestone completion

DELIVERABLE	DESCRIPTION	STATUS
Open-Source Release	Public release of the 2 main repositories to enable community access and contribution	✓ COMPLETE
AI Architecture Documentation	Detailed article documenting AI Auditor and Chatbot functionality, architecture, and implementation approach	✓ COMPLETE
Secret Achievements	Implementation of 6 new hidden achievements to incentivize deep platform exploration	✓ COMPLETE
Final Impact Report	Comprehensive metrics analysis, user feedback compilation, and sustainability planning (This Document)	✓ COMPLETE

Milestone Delivery Timeline

Development effort and delivery performance against proposed schedule

Plunder Academy was delivered on an accelerated schedule, with the team investing **1,050+ development hours** across 19 weeks. Later milestones were completed in compressed timeframes due to team members working extended hours to ensure quality delivery.



MILESTONE	SUBMITTED	DURATION	HOURS INVESTED	PROPOSED TIMELINE	STATUS
Milestone 1 Portal MVP, AI Auditor Alpha, Basic Chatbot	September 14	8 weeks	**200 hours**	8 weeks	✓ ON TIME
Milestone 2 Core Curriculum, AI Auditor Beta, Chatbot Enhancement	October 22	5 weeks	**350 hours**	8 weeks	✓ 3 WEEKS EARLY
Milestone 3 AI Optimization, Security Module, Platform Launch	November 25	4 weeks	**300 hours**	8 weeks	✓ 4 WEEKS EARLY
Milestone 4 Open-Source, Documentation, Final Report	December 9	2 weeks	**200 hours**	8 weeks	✓ 6 WEEKS EARLY

1,050+

Total Development Hours Invested

Accelerated Delivery: The original proposal estimated 32 weeks for full project completion. The team delivered all milestones in **19 weeks** — 13 weeks ahead of schedule. This was achieved through dedicated extended working hours, particularly during Milestones 2 and 3 where team members invested 350 and 300 hours respectively to ensure comprehensive curriculum development and platform polish.

The compressed Milestone 4 timeline (2 weeks vs. proposed 8 weeks) reflects that significant groundwork for open-source preparation and documentation was completed throughout earlier milestones, allowing for efficient final delivery.

Outstanding Deliverables

Pending items contingent on external dependencies

DELIVERABLE	DESCRIPTION	DEPENDENCY	STATUS
Zilliqa 2.0 Content	Dedicated modules on Zilliqa 2.0 features and advantages, including xShards, performance optimizations, and account abstraction preparation	Zilliqa 2.0 mainnet release	⏳ PENDING

Original Milestone 3 Scope: The original grant proposal included Zilliqa 2.0 content as part of Milestone 3, with the explicit caveat: "*that these features are released by Zilliqa by this time."

As Zilliqa 2.0 has not yet reached mainnet release, this deliverable remains pending. **Plunder Academy commits to developing and publishing comprehensive Zilliqa 2.0 training modules** covering xShards architecture, enhanced EVM performance, and native account abstraction capabilities once these features are officially released and documented.

This content will be added to the platform at no additional cost as part of our ongoing commitment to the Zilliqa developer ecosystem.

Year 1 Success Metrics

Progress toward annual KPI targets (launched 11/13/2025)

> **Context:** Plunder Academy launched on **November 13, 2025**. The metrics below represent early-stage progress against Year 1 targets. Two KPIs have already been met or exceeded, with others tracking proportionally to timeline.

METRIC	YEAR 1 TARGET	CURRENT	PROGRESS	STATUS
Monthly Active Users	50+ by Q4	**57**		✓ EXCEEDED
User Satisfaction Score	4.2/5	**4.2/5** (84%)		✓ MET
Registered Developers	100+	**57**		57%
AI Auditor Scans	200+	**72**		36%
AI Chatbot Interactions	1000+	**284**		28%
Course Completion Rate Full 23-module curriculum	60%	**93** completions 1.6 avg per user		Early Stage
Deployed Contracts by Users	50+	**11**		22%
Portal-Driven dApps	15-25	—	—	Tracking in Progress

✓ KPIs Met/Exceeded

- **Monthly Active Users:** 57 users (114% of 50 target)
- **User Satisfaction:** 4.2/5 achieved from 29 feedback submissions

📈 On Track (Proportional to Timeline)

- **Developers:** 57% in 6% of year = strong velocity
- **AI Tools:** Combined 356 interactions trending upward

Curriculum Details: The full Plunder Academy curriculum spans **5 islands** containing **23 learning modules**:

- Island 1 (Foundations): 5 modules — Blockchain, EVM, Solidity basics, ERC-20, Zilliqa setup
- Island 2 (Advanced Solidity): 5 modules — Data structures, testing, staking concepts & practicals
- Island 3 (NFTs): 3 modules — ERC-721 standards, NFT features, collection deployment
- Island 4 (DeFi & Security): 6 modules — Swaps, gas optimization, oracles, proxy patterns, upgradeability
- Island 5 (Integration): 4 modules — Security, error handling, Web3 frontends, dApp interfaces

On-Chain Activity

Smart contract deployment and transaction metrics across Zilliqa networks

219

Total On-Chain Transactions

CONTRACT	NETWORK	ADDRESS	TRANSACTIONS
Training Registry Core achievement tracking proxy contract	MAINNET	0x40b749...16dBE8	123
Achievement Token (Testnet) NFT badge minting proxy	TESTNET	0x1dAC44...4082ef	75
Testing Contract Development and QA deployment	TESTNET	0x92aE8e...bfEC09	16
PlunderAcademyTokenFactory Factory for creating learning tokens	MAINNET	0x3C04f8...d790Df	5

The Training Registry contract on mainnet serves as the primary hub for tracking user achievements and module completions. The 123 transactions represent real user engagement with practical exercises, including smart contract deployments completed as part of curriculum requirements.

Testnet contracts were used extensively during development and for user practice environments, allowing learners to experiment without financial risk before deploying to mainnet.

AI Tools Performance

Usage metrics and satisfaction ratings for AI-powered educational tools

CHAT ASSISTANT (WISE ORACLE)

284 queries **98%** satisfaction

Average Response Time **8.9 seconds**

The Chat Assistant provides contextual help for learners navigating modules, answering questions about Solidity, EVM concepts, and Zilliqa-specific development.

CODE REVIEWER (SECURITY MATE)

72 audits **92%** satisfaction

Average Analysis Time **2.9 seconds**

The Code Reviewer analyzes user-submitted Solidity contracts for security vulnerabilities, gas optimizations, and best practice violations.

Query Categories Distribution

CATEGORY	QUERIES	DISTRIBUTION
General Questions	147	
Concept Explanations	93	
Debugging Help	31	
Deployment Guidance	7	
Setup Assistance	6	

Website Analytics

Platform traffic and engagement metrics (14-day snapshot, preliminary data)

> **Note:** The following metrics represent preliminary data from the past 14 days. Final analytics figures will be updated upon milestone completion review.

UNIQUE VISITORS

310

↑ 83% from previous period

PAGE VIEWS

1,826

↑ 48% from previous period

BOUNCE RATE

54%

Industry average range

AVG PAGES/SESSION

5.9

Strong engagement indicator

Top Pages

PAGE	VISITORS
/	159
/lessons	61
/chat	60
/lessons/island3	48
/system-analytics	43
/lessons/island2	31

Top Referrers

SOURCE	VISITORS
t.co (Twitter/X)	22
google.com	3
bing.com	1
portfolio.metamask.io	1
stake.kalijo.io	1
vercel.com	1

Geographic Distribution

COUNTRY	SHARE
United States	23%
Germany	19%
Australia	14%
Ghana	14%
United Kingdom	5%

Device & Platform Breakdown

Desktop 73%

Mobile 27%

Operating Systems: Windows 37%, Mac 22%, iOS 16%, GNU/Linux 13%, Android 11%

Learning Module Analytics

Completion rates and quality metrics across curriculum modules (Top 10 modules shown)

MODULE	COMPLETIONS	DIFFICULTY	CLARITY	VALUE	AVG TIME
Blockchain Fundamentals	**12**	2.5/5	5.0/5	5.0/5	38 min
EVM Fundamentals	**8**	3.8/5	4.6/5	4.4/5	44 min
Creating ERC-20 Tokens	**7**	3.0/5	4.0/5	4.0/5	180 min
Intro to Solidity	**7**	4.5/5	4.3/5	4.3/5	93 min
Zilliqa EVM Setup	**7**	2.0/5	3.5/5	5.0/5	120 min
Advanced Data Structures & Error Handling	**5**	2.0/5	5.0/5	5.0/5	120 min
Advanced Solidity Foundations	**5**	4.7/5	4.7/5	4.7/5	200 min
Advanced NFT Features	**4**	3.0/5	5.0/5	5.0/5	180 min
ERC-721 Standards Implementation	**4**	4.0/5	3.0/5	4.5/5	120 min
Staking Concepts & Time Logic	**4**	4.0/5	5.0/5	4.0/5	80 min

Key Insight: Blockchain Fundamentals leads with 12 completions and perfect clarity/value scores (5.0/5), demonstrating strong entry-point engagement. Modules with lower perceived difficulty (Advanced Data Structures at 2.0/5) maintained high clarity and value scores (5.0/5), indicating effective instructional design that makes complex topics accessible. The Advanced Solidity Foundations module, despite being rated most difficult (4.7/5), received matching clarity and value scores, demonstrating that learners appreciate challenging content when well-presented.

Top Learners Leaderboard

Most engaged users demonstrating platform adoption and learning progression

RANK	WALLET ADDRESS	ACHIEVEMENTS	INTERACTIONS	RATING
🥇 #1	0x1A39...3bDe	**35**	152	⭐ 5.0
🥈 #2	0x688C...36e5	**23**	90	⭐ 4.3
🥉 #3	0x13C4...eAfF	**20**	15	—
#4	0x698d...28cA	**15**	38	—
#5	0x43fB...91f3	**9**	31	—
#6	0x28fe...3878	**6**	2	—
#7	0x318F...B084	**6**	0	—
#8	0xA36F...4495	**6**	0	—
#9	0xea5D...C526	**4**	3	—
#10	0xf662...1Fc1	**4**	0	—

> The top learner (0x1A39...3bDe) has demonstrated exceptional engagement with **35 achievements earned** and **152 platform interactions**, providing a perfect 5.0 satisfaction rating. This user's detailed feedback has been instrumental in shaping platform improvements.

User Feedback Compilation

Direct testimonials and actionable feedback from platform users

> *"The module was highly effective because it provided a complete, actionable, and multi-faceted approach. Actionable Code gave concrete implementation... Structured Response defined a clear Escalation Tree... Real-World Speed emphasized rapid response SLAs."*
>
> — 0x688C...36e5, on Advanced Security Module

> *"Using real world examples to make explanations made it easier to understand."*
>
> — 0x1A39...3bDe, on EVM Fundamentals

> *"Clearly introduces Solidity, fits logically after blockchain and EVM fundamentals, and uses an engaging, structured approach."*
>
> — 0x688C...36e5, on Intro to Solidity

> *"The EVM Fundamentals module effectively explains how the Ethereum Virtual Machine works, covers gas and smart contract execution clearly, and uses a structured, engaging format that makes complex concepts easier to understand."*
>
> — 0x688C...36e5

> *"You fixed it for mobile."*
>
> — 0x698d...28cA, acknowledging rapid mobile improvements

> *"Everything was on point again in this module, well explained. Nothing much really for now, just the video tutorial I will always suggest in every module."*
>
> — 0x1A39...3bDe, on Staking Concepts & Time Logic

> *"The module explains blockchain fundamentals clearly, uses an engaging gamified structure, and breaks down complex ideas into simple, easy-to-follow steps."*
>
> — 0x688C...36e5, on Blockchain Fundamentals

> *"Step by step guide on installing the development tools especially hardhat. I will suggest this suggestion box has an upload button to upload images which will help in giving feedbacks."*
>
> — 0x1A39...3bDe, on Zilliqa EVM Setup

> *"Well defined and explained, this has been so educative with examples. Nothing much for now, doing a great job."*
>
> — 0x1A39...3bDe, on Advanced Security

> *"I liked learning about consensus and how the nodes work. It's fun to do a quiz or word scramble each section. Maybe more."*
>
> — 0x698d...28cA, on Blockchain Fundamentals

> *"Clear explanations of all used terminology in blockchain and EVM. Please try to visualize more instead of using almost text only."*
>
> — 0x7BEb...9849, on EVM Fundamentals

AI Tool Feedback

💬 Chat Assistant Feedback

> *"What's great: Very clear distinction between events (Solidity-level) and logs (EVM-level). Tables make it easy for beginners to scan the differences. Accurate explanation of topics, indexed params, and gas costs. The minimal ERC-20 example is clean. Frontend section (viem) is practical and beginner-friendly. Zilliqa-specific notes are concise and useful."*
>
> — 0x688C...36e5, ⭐ 4/5

"Responds very well and helpful" — 0x688C...36e5, ⭐ 5/5

🔍 Code Auditor Feedback

> *"setOwner: Correctly flagged — any guardian can take ownership. Restricting this to the owner or using a proper guardian quorum is the right fix. Reentrancy: Misclassified — your current withdraw doesn't meaningfully suffer from the described reentrancy drain, though adding nonReentrant is good hardening. Events: Good best-practice suggestion."*
>
> — 0x688C...36e5, ⭐ 3/5

Users appreciate accurate vulnerability detection while noting areas for improvement in edge case handling.

Feedback-Driven Improvements Shipped

USER REQUEST	ACTION TAKEN	TIMELINE
"Chat needs to remember threads"	Implemented full chat history persistence	Shipped
"Need mobile support"	Complete mobile wallet & UI overhaul	48 hours
"More visual diagrams"	Added 100+ hours of visualization content	Shipped
"Color code the blocks"	Implemented syntax highlighting for code examples	Shipped
"OpenZeppelin version issues"	Updated documentation for v5.x compatibility	Shipped

Platform Content Growth

Educational resources developed and deployed

GLOSSARY TERMS

344

Searchable blockchain & Solidity terminology

VISUAL CONTENT

100+

Hours of diagram & animation development

LAUNCH BADGE CLAIMS

52

"The Maiden Voyage" achievement

SECRET TREASURES FOUND

43

Hidden achievements discovered

New Content Published

- **Mastering AI Reviews** — Guide to effectively using the Code Reviewer tool
- **Liquidity Deep Dive** — Comprehensive DeFi liquidity concepts
- **Remix IDE Guide** — Step-by-step smart contract development
- **Arbitrage Strategies** — Understanding MEV and arbitrage patterns
- **Security Best Practices Module** — Incident response and vulnerability management
- **AI Architecture Documentation** — How we built the AI tooling (Milestone 4 deliverable)
- **Zilliqa MCP Server Integration** — Model Context Protocol integration into the AI chatbot for enhanced Zilliqa-specific assistance
- **Golang Blockchain Integration** — Guide to interacting with Zilliqa blockchain using Go

- **Python Blockchain Integration** — Guide to interacting with Zilliqa blockchain using Python
- **Additional Code Samples** — Expanded examples and reference implementations on GitHub

Hidden Achievements Discovered

ID	ACHIEVEMENT NAME	TIMES FOUND	RARITY
1001	Murphy's Fortune	9	Common
1002	Arctic Majesty	7	Uncommon
1003	Golden Rams Head	6	Uncommon
1004	Aetos Dios	5	Rare
1005	Night Rider	5	Rare
2002	Buried Treasure Map	3	Rare
2005	Master Control Program	3	Rare
2001	Parley	2	Very Rare
2003	Mutiny Prevention	1	Legendary
2004	Dead Man's Chest	1	Legendary
1006	Plunder Master (complete all other achievements)	1	Legendary

Lessons Learned

Key insights from platform development and user engagement

✓ What Worked Well

- **Gamification:** Achievement badges and leaderboards drove significant engagement (152 interactions from top user)
- **AI Integration:** 98% chat satisfaction proves AI-assisted learning adds genuine value
- **Rapid Iteration:** 48-hour mobile fix turnaround built user trust
- **Real-World Examples:** Users consistently praised practical, actionable content
- **Structured Progression:** Module sequencing (Blockchain → EVM → Solidity) resonated with learners

⚡ Areas for Improvement

- **Video Tutorials:** Multiple users requested video content alongside text
- **Dependency Documentation:** OpenZeppelin version mismatches caused friction
- **Quiz Timing:** Some practical assessments need extended time allocations
- **Clearer Action Items:** Users wanted explicit "need to do" sections in modules
- **Failure Feedback:** Assessment failures should specify exact issues

Risk Assessment & Mitigation

How identified project risks were addressed

> The original grant proposal identified five key risks. Below is a summary of how each was addressed during development and how ongoing mitigation strategies are being maintained.

RISK	MITIGATION STRATEGY	OUTCOME
Low Platform Adoption	Leveraged existing community reach from PlunderSwap, Kalijo, and Zilnames. Implemented targeted outreach to EVM developers. Used AI tools as key differentiators. Continuous iteration based on user feedback.	✓ 57 users in 21 days, exceeding 50-user Q4 target
AI Tool Accuracy Issues	Extensive testing against diverse smart contract datasets. Iterative prompt engineering with expert review. Clear disclaimers positioning tools as assistants. User feedback mechanisms for continuous improvement.	✓ 98% Chat satisfaction, 92% Auditor satisfaction
Technical Development Challenges	Team's proven track record with complex dApps. Agile methodologies and battle-tested technologies (RainbowKit, established LLM APIs). Development buffers maintained.	✓ All milestones delivered ahead of schedule (19 vs 32 weeks)
Content Currency & Evolution	Focus on fundamental, stable concepts. Modular content architecture for easy updates. Close relationships with Zilliqa core team. Community contribution mechanisms planned.	✓ OpenZeppelin v5.x updates shipped rapidly based on feedback
Long-term Sustainability	Built high-value platform demonstrating clear ROI. Open-source release enables community ownership. Design accommodates future revenue models while keeping core content free. Infrastructure budget provides operational runway.	→ Ongoing: Open-source + community sustainability model

Key Takeaway: All identified risks were effectively managed, with adoption, technical delivery, and user satisfaction metrics exceeding targets. The long-term sustainability strategy is now in execution phase through open-source release and community engagement.

Sustainability Plan

Strategies for long-term platform viability and growth

Plunder Academy's sustainability strategy focuses on three pillars: **community ownership** through open-source repositories, **content expansion** driven by user feedback, and **ecosystem integration** with the broader Zilliqa developer community.

🌐 Open Source

Core repositories now public, enabling community contributions, forks, and independent hosting. AI architecture documentation allows recreation of educational AI tooling.

📚 Content Growth

Continuous expansion based on user-requested topics: TypeScript integration and framework guides for Python/JavaScript dApp development.

🤝 Community

Active presence on X (@PlunderAcademy), Telegram, and GitHub enables ongoing user support and community building beyond the initial grant period.

Planned Roadmap

- **Zilliqa 2.0 Modules:** Dedicated content on xShards, performance optimizations, and account abstraction upon mainnet release
- **Community Contributions:** Accept pull requests for new modules and glossary terms
- **Documentation Updates:** Maintain compatibility with latest OpenZeppelin and Zilliqa tooling versions
- **Video Content Pipeline:** Address top user request with video tutorial companions for complex modules

Conclusion

Summary of impact and milestone completion

Plunder Academy has successfully achieved all Milestone 4 objectives while establishing a meaningful presence in the Zilliqa developer education space. With **57 active users**, **219 on-chain transactions**, **356 AI interactions**, and an **84% satisfaction rate**, the platform demonstrates strong product-market fit and genuine educational value.

The completion of open-source releases, comprehensive AI documentation, and gamified secret achievements positions Plunder Academy for sustainable community-driven growth. User feedback has been systematically incorporated, with major improvements (mobile support, chat history, syntax highlighting) shipped rapidly in response to direct requests.

The platform's on-chain footprint across both testnet and mainnet Zilliqa networks reflects real hands-on learning, with users deploying actual smart contracts as part of their educational journey. This practical, wallet-connected approach differentiates Plunder Academy from passive tutorial sites and creates tangible skill development.

We thank the **GZIL Collective Committee** for their support and look forward to continuing to grow the Zilliqa developer ecosystem through accessible, AI-enhanced education.

All Milestone 4 Deliverables Complete

Ready for Committee Review

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plunderacademy.com

Analytics: plunderacademy.com/system-analytics
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Report generated December 9, 2025