Improving Kineo Analytics

# Business Goals

* Enable L&D teams to demonstrate learning impact and ROI to leadership
* Mitigate vendor lock-in risk from proprietary storage
* Improve cost and performance scalability
* Enable future innovation (adaptive learning, learning pathways, skill journeys)
* Support more advanced analytics and customized visualizations

The project timeline is approximately one year, with this initial work forming a proof of concept to inform a larger business case for production implementation.

# User Personas

## Internal Team (Kineo)

* Learning Experience Designers
* Platform Consultants
* Customer Success Managers
* Data Scientists (future)

## Customer Users

* L&D Managers/Admins (primary analytics users)
* Department Heads/Team Managers (team-specific insights)
* Individual Employees (personal learning insights)

# Data Sources

* LMS data (Totara)
  + Course/program/certificate completions
  + Instructor-led training attendance
  + Organizational structure and user profile data
  + Assessment data and learning interactions
  + Performance reviews and appraisals
  + Competencies and skills
* SCORM object data with custom JavaScript tracking (Kineo Data Services)
* LMS data (Learnforce)
* SCORM object data (Kineo Courses)

# Technical requirements

* Support for either Azure or AWS services
* Nightly data refresh (minimum)
* Infrastructure as code for deployment

# User Story Map

## MVP 1: LMS Course Completions

The first MVP takes the course completion data from the Learning Platforms dataset through the data journey from copy through to visualisation.

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| Data Sourcing & Integration | Data Cleaning & Standardization | Data Transformation & Storage | Visualization & Insights | Infrastructure & Automation |
| Import LMS data (course completions) | Basic completion data validation | Course completion aggregations | Completion rate dashboards | Basic cloud infrastructure (Azure/AWS) |
| Import basic organizational structure | User/course data standardization | Completion status tracking | Completion trend visualizations | Development environment |
| Import minimum user profile data | Missing data handling for completions | Basic organizational filtering | Org hierarchy completion views | Basic nightly data refresh |
|  | Basic error logging | Completion trends over time | Basic filtering by course/user | Simple deployment process |
|  |  |  | Export to common formats |  |

Note there are additional metrics beyond course completion for Learning Platforms that can be incremented on top of this:

* Program completions – a program consists of one of more courses
* Certificate completions – a certificate is a program plus requires re-certification (e.g. must be completed every year)
* Seminar attendance – attendance in instructor-led training (ILT)
* Time spent on learning (ILT and SCORM)

These have been added to the should have backlog below)

## MVP 2: Content Data Integration

The second MVP focuses on the Learning Content dataset. The Learning Content dataset has individual courses and a requirement to summarise data across sets of courses (this is abstractly equivalent to programs in the platforms dataset).

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| --- | --- | --- | --- | --- |
| Data Sourcing & Integration | Data Cleaning & Standardization | Data Transformation & Storage | Visualization & Insights | Infrastructure & Automation |
| Connect to Kineo Data Services via REST APIs | Content data validation | Cross-course content aggregations | Content usage dashboards | Build on MVP 1 infrastructure |
| Import content structure metadata | Content data standardization | Content effectiveness metrics | Cross-course comparison views | Enhanced API connection handling |
| Connect content to completion data | Handling inconsistent content formats | Content engagement patterns | Content performance visualization | Scheduled API polling |
|  | Data reconciliation between systems | Unified learning object tracking | Content drill-down analytics |  |
|  |  | Content type analysis | Content taxonomy filtering |  |

## Phase 2 (Should Have)

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| Data Sourcing & Integration | Data Cleaning & Standardization | Data Transformation & Storage | Visualization & Insights | Infrastructure & Automation |
| Import LMS data: (program/certificate completions and course relationships | Advanced data quality monitoring | Program/certificate tracking | Power BI integration | CI/CD pipeline automation |
| Automated metadata tagging | Automated data cleansing pipelines | Learning pathway analysis | Custom visualization framework | Production environment implementation |
| Data lineage tracking | Data versioning | Skills framework integration | Department-specific views | Comprehensive monitoring |
| Support manual data uploads | Custom validation rules by client | Custom client metrics | Interactive data storytelling | Auto-scaling capabilities |
|  | Detailed error reporting | Time-based learning metrics | Customizable dashboard layouts | Basic security compliance framework |
| Import ILT session and attendance data | ILT attendance data validation | Learning session duration analysis | ILT attendance dashboards |  |
| Import SCORM report data | Session data standardization | Time spent by content type | No-show rate visualizations |  |
|  | No-show vs cancellation handling | Time efficiency metrics | Session capacity utilization |  |
|  | Learning time data validation | Engagement duration patterns | Filtering by session/instructor |  |
|  | Time metric standardization | ILT attendance aggregations | Time spent learning dashboards |  |
|  | Handling outliers in time data | Attendance vs registration rates | Time efficiency visualizations |  |
|  |  | Department/team attendance metrics | Learning time distribution |  |
|  |  | Instructor performance metrics | Time period comparisons |  |

## Phase 3 (Could Have)

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| --- | --- | --- | --- | --- |
| Data Sourcing & Integration | Data Cleaning & Standardization | Data Transformation & Storage | Visualization & Insights | Infrastructure & Automation |
| AI-powered data quality monitoring | ML-based anomaly detection | Predictive analytics models | AI-powered insight generation | Multi-region deployment |
| External learning data integration | Self-healing data pipelines | Machine learning feature storage | Natural language query interface | Disaster recovery automation |
| Learning experience data from external sources | Data quality scorecards | Real-time analytics processing | Prescriptive recommendation engine | Advanced threat protection |
| Import log data |  | Advanced time-series analysis | Automated alert notifications | Cost optimization automation |
|  |  | Graph-based relationship analytics | Embedded analytics in other applications | Multi-cloud support |
|  |  |  | Cross-source data blending |  |