

PROJECT CASE: AI-POWERED
MULTI-LEVEL FEEDBACK ANALYSIS
FOR UNIVERSITIES

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Executive Summary

Universities collect vast amounts of student feedback each semester, but much of it remains underutilised. Current analysis methods focus on sentiment scores or raw dashboards, leaving decision-makers to interpret the data themselves.

The solution is an AI-powered feedback analysis agent that transforms raw survey data into clear, role-specific, actionable reports for every level of the academic hierarchy — from Vice Chancellors to individual lecturers.

By combining advanced NLP, trend detection, and narrative generation, the system delivers insights, not just numbers, enabling faster, more targeted improvements in teaching quality and student satisfaction.

1. Problem Statement

- Fragmented insight delivery — Feedback is collected but not synthesised into actionable intelligence.
- One-size-fits-all reporting — Lecturers, deans, and executives receive the same data, despite having different needs.
- Time-intensive analysis — Manual review of open-ended responses is slow and inconsistent.
- Missed opportunities — Positive trends and early warning signs are often overlooked.

2. Proposed Solution

An AI feedback analysis platform that:

- Processes both closed-ended (quantitative) and open-ended (qualitative) feedback.
- Identifies consensus themes and emerging trends.
- Generates three tailored report levels:
 1. Macro — University-wide executive summaries for leadership.
 2. Meso — School/faculty-level reports for deans.
 3. Micro — Lecturer-level actionable feedback.
- Provides data-driven recommendations aligned with proven teaching improvement strategies.

3. Unique Selling Points

- Narrative, human-like reporting — Reads like a consultant's briefing, not a sterile chart.
- Role-specific insights — Each stakeholder gets exactly what they need.
- Actionable recommendations — Not just “what’s wrong,” but “what to do next.”
- Scalable & adaptable — Works for one lecturer or an entire university system.
- Trend tracking — Compares performance over time to measure improvement.

4. Target Market

- Primary: Universities and higher education institutions (starting with USIU as a pilot).
- Secondary: Colleges, vocational training centres, and corporate learning programs.

5. Competitive Landscape

Competitor	Strengths	Gaps that the Solution Fills
MonkeyLearn	Easy NLP setup, sentiment & topic tagging	No multi-level, role-specific narrative reporting
Lexalytics	Deep NLP, customizable taxonomies	Requires analyst expertise, lacks conversational summaries
Medallia	Enterprise CX platform, real-time feedback	Heavy on dashboards, not tailored to education
Chattermill	Theme clustering, trend detection	Geared to CX teams, not academic reporting

Figure 1.0

6. Revenue Model

- Subscription SaaS — Annual or semester-based licensing per institution.
- Per-report pricing — For smaller institutions or one-off analysis.
- Custom integration fees — For connecting to LMS or survey systems.

7. Deployment Approach

- Phase 1: Secure, cloud-hosted web application for easy rollout.
- Phase 2: API integrations with existing survey tools (Google Forms, Qualtrics, SurveyMonkey, LMS exports).
- Phase 3: Optional desktop client for offline/high-security environments.

8. Pilot Plan

- Pilot Partner: USIU — School of Science and Technology.
- Scope: One academic year's worth of feedback across selected courses.
- Metrics:
 1. Time saved in analysis.
 2. Clarity and usefulness of insights.
 3. Lecturer and dean satisfaction with reports.
- Outcome: Refine product before scaling to other schools and institutions.

10. Risks & Mitigation

Risk	Mitigation
Data privacy concerns	End-to-end encryption, compliance with GDPR & local laws
AI misinterpretation of feedback	Human-in-the-loop review for early deployments
Resistance to change	Demonstrate time savings & clarity benefits in pilot

Figure 1.2

11. Expected Benefits

- For Lecturers: Clear, actionable feedback without manual comment review.
- For Deans: Department-level patterns to guide resource allocation.
- For Executives: University-wide trends to inform strategic planning.
- For Students: Faster, more visible improvements in teaching quality.

12. Sample output

12.1 Micro level

Lecturer Feedback Report — Micro Level

Course: PSY 214 – Cognitive Psychology

Lecturer: Dr L. Mwangi

Semester: Spring 2025

Responses: 64 students

1 Overall Sentiment

- **Closed-ended ratings:**
 - *Extremely Good / Very Good: 81%*
 - *Good: 11%*
 - *Poor / Very Poor: 8%*
- **Open-ended sentiment:**
- Positive: **78%**
- Neutral: **14%**
- Negative: **8%**

2 What Students Consistently Praised

1. **Clear, relatable examples** — 59% of positive comments mentioned how real-life scenarios made theories easier to understand.
2. **Interactive activities** — 47% appreciated in-class experiments and group problem-solving.
3. **Supportive teaching style** — 41% noted patience and willingness to re-explain concepts.

Example student voice:

“The memory recall experiment was fun and made the concept stick instantly.”

③ Common Suggestions for Improvement

1. **More visual aids** — 28% suggested adding diagrams or infographics to slides.
2. **Pacing in final weeks** — 22% felt the last two topics were rushed.
3. **Earlier posting of readings** — 19% wanted materials uploaded at least two days before class.

Example student voice:

“Sometimes I only saw the reading list the night before, which made it hard to prepare.”

④ Trends vs. Last Semester

- **Positive:** Mentions of “interactive activities” increased by 15%.
- **Negative:** Requests for “more visual aids” rose by 10%.

⑤ Recommended Actions

- Incorporate **more diagrams and flowcharts** into lecture slides.
- Build in **recap sessions** before introducing new material in the final weeks.
- Post reading lists **48 hours in advance** to support preparation.

⑥ AI Summary in Plain Language

“Students value your clarity, interactive approach, and supportive style. The main opportunities for improvement are adding more visual aids, adjusting pacing toward the semester’s end, and posting readings earlier. Addressing these will likely push your already strong ratings even higher.”

12.2 Meso level

Mock AI Department Feedback Report — Chandaria School of Business

Semester: Spring 2025

Total Courses Reviewed: 18

Total Student Responses: 2,146

① Department Sentiment Overview

- **Closed-ended ratings:**
 - *Extremely Good / Very Good:* **74%**
 - *Good:* **15%**
 - *Poor / Very Poor:* **11%**
- **Open-ended sentiment:**
 - Positive: **71%**
 - Neutral: **17%**
 - Negative: **12%**

② Top Strengths (Consensus Across Multiple Lecturers)

Themes mentioned positively in $\geq 50\%$ of courses:

1. **Real-world application of theory** — Students consistently praised lecturers who used local and regional business case studies.
2. **Approachability & support** — Many noted that lecturers were “easy to approach” and “responsive to emails.”
3. **Interactive teaching methods** — including group discussions, debates, and simulations — were repeatedly cited as engaging.

Example student voice:

“The group simulation on market entry strategies was the highlight of the semester.”

③ Common Areas for Improvement

Themes mentioned constructively in $\geq 30\%$ of courses:

1. **Pace of delivery** — Particularly in upper-year courses, students felt content was rushed toward the end of the term.
2. **Assessment feedback delays** — Late return of graded work was a recurring frustration.
3. **Learning material accessibility** — Some lecturers posted slides or readings too close to class time.

4 Notable Outliers

- **High Performer:** *Dr Drchieng (MKT 402)* — Achieved 92% “Extremely Good/Very Good” ratings, with standout praise for “industry guest speakers” and “practical assignments.”
- **Needs Attention:** *BUS 214 – Financial Accounting II* — Received the highest proportion of “Poor/Very Poor” ratings (22%), with repeated mentions of “unclear explanations” and “lack of examples.”

5 Emerging Trends vs. Last Semester

- **Positive:** Mentions of “interactive teaching” increased by 14% across the department.
- **Negative:** Complaints about “late feedback” rose by 9%, especially in large-enrollment courses.

6 Recommended Department-Level Actions

1. **Pacing workshops** — Share best practices for balancing syllabus coverage with student comprehension.
2. **Feedback turnaround policy** — Set a department-wide standard (e.g., 10 working days).
3. **Resource release schedule** — Encourage lecturers to post materials at least 48 hours before class.
4. **Peer mentoring** — Pair high-performing lecturers with those needing improvement in specific areas.

7 AI Summary in Plain Language

“Overall, the School of Business & Economics is delivering a strong learning experience, with students especially valuing real-world application and approachable lecturers. The main friction points — pacing, delayed feedback, and late release of materials — are consistent across multiple courses and should be addressed at a department level. Leveraging high performers as mentors could accelerate improvement.”

12.3 Macro Level

University-Wide Student Feedback Executive Summary

Institution: United States International University – Africa (USIU)

Semester: Spring 2025

Total Schools: 5

Total Courses Reviewed: 126

Total Student Responses: 14,382

1 Overall Sentiment Snapshot

- **Closed-ended ratings:**
 - *Extremely Good / Very Good: 76%*
 - *Good: 14%*
 - *Poor / Very Poor: 10%*
- **Open-ended sentiment:**
 - Positive: **72%**
 - Neutral: **16%**
 - Negative: **12%**

2 School-by-School Performance

School	% Positive Sentiment	Top Strength	Key Improvement
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			Area
Chandaria School of Business	71%	Real-world application of theory	Pace of delivery in the final week
Humanities & Social Sciences	78%	Engaging, discussion-based classes	More timely grading feedback
Science & Technology	69%	Practical lab sessions	Equipment availability & maintenance
Communication, Creative & Cinematic Arts	82%	Creative project-based learning	Clearer grading rubrics
Pharmacy & Health Sciences	74%	Clinical relevance of coursework	Scheduling conflicts for practicals

Figure 1.3

③ University-Wide Consensus Strengths

- **Approachability of lecturers** — Mentioned positively in 4 out of 5 schools.
- **Integration of real-world examples** — Strong driver of positive sentiment across disciplines.
- **Interactive teaching methods** — Group work, debates, and simulations are consistently praised.

④ University-Wide Consensus Challenges

- **Assessment feedback delays** — Recurring in 3 schools, especially in large-enrollment courses.
- **Pacing toward semester end** — Common in Business, Science, and Pharmacy programs.
- **Learning material release timing** — Students want slides/readings earlier.

⑤ Notable Outliers

- **High Performer:** *School of Communication, Creative & Cinematic Arts* — Highest positive sentiment (82%), with standout praise for “hands-on creative projects” and “industry guest speakers.”
- **Needs Attention:** *Science & Technology* — Lowest positive sentiment (69%), with repeated mentions of “outdated lab equipment” and “overcrowded sessions.”

⑥ Trends vs. Last Semester

- **Positive:** Mentions of “interactive teaching” rose by 12% university-wide.
- **Negative:** Complaints about “late feedback” increased by 8%, particularly in courses with over 80 students.

⑦ Recommended Strategic Actions

1. **Set a university-wide feedback turnaround policy** (e.g., 10 working days).
2. **Pacing workshops** for lecturers in high-content courses.
3. **Early release of learning materials** — at least 48 hours before class.
4. **Targeted investment in lab equipment** for Science & Technology.
5. **Cross-school sharing of best practices** — leverage high-performing schools to mentor others.

⑧ AI Summary in Plain Language

“Overall, USIU maintains a strong positive sentiment across all schools, with students especially valuing approachable lecturers, real-world examples, and interactive teaching. The most consistent friction points — delayed feedback, pacing, and late release of materials — are solvable with coordinated policy changes. Addressing these will not only improve student satisfaction but also strengthen the university’s competitive edge.”