**1. Common Feedback Methods for Students to Evaluate Teaching**

* **End-of-course surveys**
  + For example, rating and open-ended questions in end-of-term teaching evaluation systems.
  + **Advantages:** Standardized collection, large volume
  + **Disadvantages:** Formalized, limited feedback, students may not take it seriously
* **Real-time classroom feedback tools**
  + Examples include Mentimeter, Yuketang, DingTalk polls / Mentimeter, Poll Everywhere, Kahoot!, Slido, etc.
  + **Advantages:** Real-time collection, highly interactive
  + **Disadvantages:** Limited to specific classroom content
* **Anonymous suggestion boxes (online or offline)**
  + Provide anonymous channels to collect suggestions.
  + **Advantages:** Safe environment, encourages honesty
  + **Disadvantages:** Feedback is scattered and unsystematic
* **WeChat,QQ groups/WhatsApp groups communication**
  + Students send private messages or group messages to teachers.
  + **Advantages:** Convenient and natural
  + **Disadvantages:** Informal, information can be lost easily
* **Communication through class representatives**
  + Student representatives relay feedback to teachers or the school.
  + **Advantages:** Organized
  + **Disadvantages:** Possible information distortion or omissions
* **Face-to-face or after-class conversations**
  + Students directly talk to teachers after class to give feedback.
  + **Advantages:** Direct and clear
  + **Disadvantages:** Limited by time and students’ willingness
* **Email feedback**
  + Students send feedback directly to teachers via email.
  + **Advantages:** Formal, clear, with a record
  + **Disadvantages:** Not anonymous enough, some students reluctant to express openly
* **Feedback via Learning Management Systems (e.g., Canvas, Blackboard)**
  + Students submit feedback on teaching platforms.
  + **Advantages:** Unified platform, easy to track
  + **Disadvantages:** Limited functionality, poor interactivity
* **Regular teaching evaluation meetings**
  + Teachers invite a group of students for small group interviews.
  + **Advantages:** In-depth feedback, strong interaction
  + **Disadvantages:** Limited number of participants, not fully representative

**2. Interview Guide and Questionnaire**

**Part 1: Interview Guide and Questionnaire for Students**

**1. Student Interview Guide (Semi-structured Interview)**

**Content Outline**

**Interview Goals:**

* To supplement the questionnaire by exploring the underlying motivations and deeper feelings
* To investigate students’ real experiences and obstacles with current feedback methods
* To understand acceptance and expectations for a new system (automatic sentiment analysis/feedback summary)

**Outline Structure:**

**Usage Habits**  
Q1. How many times do you usually provide course feedback in a semester?  
Q2. Through what methods do you usually give feedback to teachers? For example, questionnaires, assignment comment sections, group chats, etc.

**Experience and Trust**  
Q3. Do you think teachers seriously read your feedback? Have you ever had an experience where your feedback was “responded to”?  
Q4. Are you willing to write detailed feedback? Do you find writing feedback troublesome? Why or why not?

**Feedback Preferences**  
Q5. What way do you prefer to express your opinions? For example, free text, multiple choice rating, or a combination?  
Q6. If the system allows anonymity and you can see how teachers interpret your feedback, would you be willing to use it?  
Q7. What content or features would you like such a system to display? (For example, word clouds, sentiment trends, etc.)

**Specific Channels**  
Q8. Through which channels do you usually provide feedback? (WeChat groups, assignment comment sections, after-class discussions, etc.)  
Q9. Do you find these feedback methods convenient? If not, what are the main issues? (Please describe real scenarios if possible.)

**Writing Habits**  
Q10. Do you often write longer feedback? When are you most willing to write detailed feedback?  
Q11. Has a teacher ever responded to or quoted your feedback in class? How did you feel at that time?

**Acceptance of New System**  
Q12. If there were a system that could automatically analyze the sentiment and keywords in your feedback and present it to teachers, do you think it would be useful? Would you be willing to use it?  
Q13. How would you like to see teachers respond to the results of this system’s analysis? What presentation format do you prefer? (Reports? Graphs? Summaries?)

**Suggestions for System Improvement**  
Q14. What do you think is the biggest problem with the current feedback system?  
Q15. If you were to design a new feedback system, what features or qualities would you want it to have?  
Q16. Please identify the parts or functions of the feedback system process that you think need the most improvement.

**2. Student Questionnaire**

**Purpose:** Quantify students’ feedback habits and needs

**1. 在一学期中，您一般会写几次课程反馈？ / How many times do you usually provide course feedback in a semester?**

* 从不 / Never
* 1–2 次 / 1–2 times
* 3 次以上 / 3 times or more

**2. 您一般通过哪些方式表达反馈？（可多选） / Which methods do you usually use to give feedback? (Multiple choice)**

* 问卷 / Questionnaires
* 作业评论区 / Assignment comment sections
* 教学邮件、短信 / Teaching emails, messages
* 课堂即时反馈工具（如 Slido） / Real-time classroom feedback tools (e.g., Slido)
* 其他（请注明） / Others (please specify): \_\_\_\_\_\_\_\_\_

**3. 您觉得老师认真看了学生的文字反馈吗？ / Do you think teachers seriously read students’ written feedback?**

* 是 / Yes
* 否 / No
* 不确定 / Unsure

**4. 您是否觉得您的反馈被“采纳”或“回应”过？ / Do you feel your feedback has been “adopted” or “responded to”?**

* 经常有 / Often
* 偶尔有 / Occasionally
* 几乎没有 / Rarely
* 完全没有 / Never

**5. 您更愿意以哪种方式表达您的意见？ / Which way do you prefer to express your opinions?**

* 自由文本 / Free text
* 选择题打分 / Multiple choice for rating
* 两者结合 / Combination of both
* 不愿表达 / Prefer not to express

**6. 如果可以匿名，并知道老师能看到您的意见总结，您愿意使用这样的系统吗？ / Would you be willing to use a system that allows anonymity and shows you a summary of teacher’s view of your feedback?**

* 非常愿意 / Very willing
* 一般 / Somewhat willing
* 不愿意 / Unwilling

**7. 您希望看到以下哪些功能？（可多选） / Which of the following features would you like to see? (Multiple choice)**

* 反馈情感趋势图（正负面占比） / Feedback sentiment trend chart (positive/negative ratio)
* 热门问题突出显示（词云） / Popular issue highlighted (Word Cloud)
* 教师回应区 / Teacher response section
* 自己的反馈记录 / Personal feedback history
* 全班反馈概况 / Overall class feedback overview

**8. 您通常通过哪些渠道给老师反馈？（可多选） / Which channels do you usually use to give feedback to teachers? (Multiple choice)**

* 课程结束问卷 / Course-end surveys
* 课堂即时反馈工具（如 Mentimeter、钉钉投票） / Real-time classroom feedback tools (e.g., Mentimeter, DingTalk polls)
* 匿名意见箱（线上/线下） / Anonymous suggestion boxes (online/offline)
* 微信、QQ群等/WhatsApp groups etc.
* 班委转达 / Class representative relay
* 课后面谈 / After-class face-to-face talks
* 邮件反馈 / Email feedback
* 学习管理系统留言（如 Canvas/Blackboard） / Learning management system messages (e.g., Canvas, Blackboard)
* 其他（请说明） / Others (please specify): \_\_\_\_\_\_\_\_\_

**9. 您觉得目前的反馈方式是否方便？ / Do you find the current feedback methods convenient?**

* 非常方便 / Very convenient
* 一般 / Somewhat convenient
* 不太方便 / Not very convenient
* 非常不方便 / Very inconvenient

**如果你觉得目前的反馈方式不方便，主要原因是什么？（可多选）  
If you find the current feedback methods inconvenient, what are the main reasons? (Multiple choice)**

* 意见没人看 / Feedback is ignored
* 写反馈太麻烦 / Too much effort to write feedback
* 不知道怎么反馈 / Don't know how or where to give feedback
* 工具不好用 / Tools are not user-friendly
* 缺乏匿名性 / Lack of anonymity
* 不知道有没有回应 / No idea whether feedback is noticed/responded to
* 不清楚反馈目的 / Don't understand the purpose of feedback
* 其他（请说明） / Others (please specify): \_\_\_\_\_\_\_\_\_

**10. 您平时愿意写详细的文字反馈吗？ / How often do you write detailed text feedback?**

* 经常写 / Often
* 偶尔写 / Occasionally
* 很少写 / Rarely
* 从不写 / Never

**11. 您觉得老师会认真阅读您的反馈吗？ / Do you think teachers seriously read your feedback?**

* 会 / Yes
* 可能会 / Probably yes
* 不太可能 / Probably no
* 不会 / No

**12. 您是否愿意使用一个可以自动分析反馈情绪并给出总结的系统？ / Would you be willing to use a system that automatically analyzes your feedback sentiment and provides a summary?**

* 非常愿意 / Very willing
* 比较愿意 / Somewhat willing
* 不确定 / Unsure
* 不愿意 / Unwilling

**13. 您希望通过什么方式看到反馈结果？（可多选） / How would you prefer to receive feedback results? (Multiple choice)**

* 报告形式 / Reports
* 图表展示 / Charts & graphs
* 趋势分析 / Trend analysis
* 简要总结 / Brief summaries
* 其他（请说明） / Others (please specify): \_\_\_\_\_\_\_\_\_

**14. 您觉得反馈系统最需要改进的地方是什么？ / What do you think is the most important improvement needed in the feedback system?**

**15. 请您提出对教学反馈系统或流程的建议或意见。 / Please provide any suggestions or comments you have regarding the teaching feedback system or process.**

**16. 请您提出对教学反馈系统或流程的建议或意见。 / Please provide any suggestions or comments you have regarding the teaching feedback system or process.**

**Part 2: Interview Guide and Questionnaire for Teachers**

**1. Teacher Interview Guide (Semi-structured Interview)**

**Objectives:**

* Understand teachers’ channels for collecting student feedback, usage effectiveness, pain points, needs, and expectations for improvement
* Explore teachers’ experiences with current feedback systems and difficulties in handling feedback
* Learn teachers’ expectations and acceptance of automatic sentiment analysis and feedback summary systems

**Feedback Collection Habits**  
Q1. Through which methods do you usually collect student course feedback? (e.g., end-of-term surveys, real-time classroom tools, anonymous suggestion boxes, WeChat groups, etc.)  
Q2. How do you evaluate the overall effectiveness of the current feedback channels and systems? What are their shortcomings?

**Feedback Usage Experience**  
Q3. Do you feel the volume of feedback is too large, making it difficult to process and understand in a timely manner? What specific difficulties have you encountered?  
Q4. How often do you usually read students’ written feedback?

**Feedback Adjustment and Interaction**  
Q5. Have you ever adjusted your teaching content or methods based on student feedback? Could you give an example?  
Q6. Do you actively respond to student feedback? In what ways do you usually respond?

**Tool Usage and Anonymous Feedback**  
Q7. Have you used real-time classroom feedback tools? How was your experience?  
Q8. Do you think anonymous feedback is helpful for improving teaching? Why or why not?

**Student Feedback Willingness and Barriers**  
Q9. What do you think are the main reasons for students’ low willingness to provide feedback?

**System Functionality Needs**  
Q10. Which features (e.g., sentiment analysis, keyword extraction, trend visualization, filtering, automatic summary reports) would be most helpful to you?

**Feedback Frequency and Improvement Expectations**  
Q11. How frequently would you ideally like to receive student feedback?  
Q12. What do you think are the most important areas for improvement in the current feedback channels or system features?

**2. Teacher Questionnaire**

**Purpose:** Collect teachers’ attitudes toward and needs for student feedback

**1. 您通常通过哪些方式收集学生反馈？（可多选）/ Through which channels do you usually receive student feedback? (Multiple choice)**

* 期末教学评价问卷 / Course-end surveys
* 课堂即时反馈工具（如 Mentimeter 等）/ Real-time classroom feedback tools (e.g., Mentimeter)
* 匿名意见箱（线上或线下）/ Anonymous suggestion boxes (online/offline)
* 微信/QQ群/WhatsApp / WeChat/QQ/WhatsApp
* 班委/代表反馈 / Teaching assistants or class representatives
* 面对面交流 / Face-to-face talks
* 邮件 / Email
* 学习管理系统留言（如 Canvas、Blackboard）/ Learning management system messages (e.g., Canvas, Blackboard)
* 其他（请说明）：\_\_\_\_\_\_\_\_\_ / Others (please specify): \_\_\_\_\_\_\_\_\_

**2. 您觉得目前反馈渠道的效果如何？/ How effective do you think the current feedback channels are?**

* 非常有效 / Very effective
* 比较有效 / Quite effective
* 一般 / Neutral
* 不太有效 / Not very effective
* 无效 / Not effective at all

**3. 您是否觉得当前反馈系统产生的信息量过大，难以及时处理？/ Do you find the current feedback systems generate too much feedback to process quickly?**

* 非常同意 / Strongly agree
* 同意 / Agree
* 一般 / Neutral
* 不同意 / Disagree
* 非常不同意 / Strongly disagree

**4. 您多久阅读一次学生的文字反馈？/ How often do you read students’ written feedback?**

* 经常 / Often
* 有时 / Sometimes
* 很少 / Rarely
* 几乎不读 / Almost never

**5. 您是否曾根据学生反馈调整教学？/ Have you ever adjusted your teaching based on student feedback?**

* 经常 / Often
* 偶尔 / Occasionally
* 很少 / Rarely
* 从未 / Never

**6. 您是否会主动回应学生反馈？/ Do you actively respond to student feedback?**

* 总是 / Always
* 大多数时候 / Most of the time
* 偶尔 / Occasionally
* 很少 / Rarely
* 从不 / Never

**7. 您是否使用过课堂即时反馈工具？/ Have you used real-time classroom feedback tools (e.g., Mentimeter)?**

* 经常使用 / Frequently
* 偶尔使用 / Occasionally
* 了解但未使用 / Know about them but never used
* 未了解 / Not aware of them

**8. 您认为匿名反馈对教学改进是否有帮助？/ Do you think anonymous feedback is helpful for improving teaching?**

* 非常有帮助 / Very helpful
* 有一定帮助 / Somewhat helpful
* 一般 / Neutral
* 没有帮助 / Not helpful
* 不确定 / Not sure

**9. 您认为学生反馈意愿较低的主要原因有哪些？（可多选）/ What do you think are the main barriers that prevent students from giving feedback? (Multiple choice)**

* 渠道不方便 / Feedback channels are inconvenient
* 担心被识别 / Fear of being identified
* 不知道如何反馈 / Don’t know how to give feedback
* 反馈不被重视 / Feel their feedback is ignored
* 时间不足 / Lack of time
* 其他（请说明）：\_\_\_\_\_\_\_\_\_ / Others (please specify): \_\_\_\_\_\_\_\_\_

**10. 您觉得以下哪些功能对您有帮助？（可多选）/ Which of the following features would be helpful for you? (Multiple choice)**

* 情感倾向分析 / Sentiment analysis
* 关键词提取 / Keyword extraction
* 可视化趋势展示 / Visual trend displays
* 按班级、时间、模块筛选 / Filtering by class, time, course module, etc.
* 自动生成总结报告 / Automatic summary reports
* 其他（请说明）：\_\_\_\_\_\_\_\_\_ / Others (please specify): \_\_\_\_\_\_\_\_\_

**11. 您希望多频率地获取学生反馈？/ How often would you prefer to receive student feedback?**

* 每次作业后 / After every assignment
* 每月一次 / Once a month
* 期中和期末各一次 / Midterm and final each once
* 仅期末一次 / Only at the end of term
* 其他（请说明）：\_\_\_\_\_\_\_\_\_ / Others (please specify): \_\_\_\_\_\_\_\_\_

**12. 您希望改进哪些反馈渠道或功能？ / What improvements would you like to see in feedback channels or system features?**

**Student Feedback User Persona**

**1. Feedback Behavior Characteristics**

* **Low feedback frequency**: Most students provide feedback only 1–2 times per semester, indicating an overall low engagement rate.
* **Diverse feedback channels**: Common methods include questionnaires (5 students), assignment comment sections (4), and real-time tools (3).
* **Brief and occasional style**: Most students only occasionally write detailed feedback (6); sustained or active engagement is rare.

**2. Motivations and Barriers**

* **Significant obstacles to feedback**:
  + Too much effort to write feedback (5)
  + Uncertainty about whether feedback is read/responded to (5)
  + Don’t know how or where to give feedback (4)
* **Unclear perceived effectiveness**: Most students are unsure whether teachers read their feedback and feel their input is only occasionally acknowledged.

**3. Feedback Expression Preferences**

* **Preference for mixed expression formats**: 7 students prefer a combination of written and verbal methods.
* **Strong interest in anonymous feedback**: 6 students are “very willing” to use a system that supports anonymity and displays teacher responses.

**4. Feedback Result Preferences**

* **Prefer visualized and summarized output**: Charts (5), trend analysis (4), and brief summaries (4) are favored formats.
* **Clear demand for feedback loop visibility**: Many students wish to see a **teacher response section** (6) and **personal feedback history** (5).

**5. High acceptance of smart analysis systems**

* 6 students are either “willing” or “very willing” to use an automated sentiment analysis and summary system.

**Student-Side Feature Requests (FRs)**

Based on the persona insights above, the following feature requests are recommended for the student-facing feedback system:

1. **Anonymous Feedback Support**
   * Enable anonymous submissions to protect privacy and encourage open feedback.
   * Allow students to see summarized teacher responses to their anonymous input to close the loop.
2. **Visible Teacher Response Section**
   * Display a designated “Teacher Response Area” where students can track whether feedback is read or acted upon.
3. **Personal Feedback History**
   * Let students view their own feedback history and any teacher responses to improve transparency and trust.
4. **Visualized Feedback Results**
   * Offer visual tools like word clouds and sentiment trend charts.
   * Support multiple formats including charts, brief reports, and trend analysis.
5. **Improved Usability**
   * Simplify the feedback process with a more intuitive interface.
   * Provide quick-feedback templates or guiding questions to make participation easier.
6. **Support for Multiple Input Methods**
   * Accept both text and optional voice/choice-based feedback to accommodate different expression styles.
7. **Automated Sentiment Analysis and Summaries**
   * Use NLP techniques to analyze sentiment and extract keywords, and auto-generate summaries for both students and teachers.
8. **Modular Embedding**
   * Embed feedback modules into learning systems (Canvas, Blackboard), assignment portals, or WeChat/QQ groups to improve accessibility.

**Teacher Feedback User Persona**

**1. Feedback Channels and Habits**

* **Most-used methods**: Face-to-face conversations (8) and end-of-course surveys (8) are the dominant channels.
* **Less common sources**: WeChat/QQ (3), class reps (2), and anonymous boxes (2) are used sporadically.
* **Limited adoption of real-time tools**: Only 5 teachers use them occasionally; 6 have never used such tools.

**2. Perceived Feedback Effectiveness**

* Mixed views: While 6 teachers rate current channels as “quite” or “very effective”, 5 rate them as “neutral” or “not very effective”.
* **Information overload**: 8 teachers agree or strongly agree that it is difficult to process the amount of feedback received.

**3. Attitude Toward Feedback**

* **High engagement**:
  + 7 teachers read student feedback regularly.
  + 4 teachers “often” and 7 “occasionally” adjust teaching based on feedback.
* **Proactive communication**: 8 teachers “always” or “most of the time” respond to student feedback.

**4. Strong support for anonymous feedback**

* All 11 teachers believe anonymous feedback is at least “somewhat helpful” for improving teaching.

**5. Teachers' Perception of Low Student Engagement**

* Teachers believe students refrain from giving feedback mainly due to:
  1. Fear of being identified (11)
  2. Not knowing how to give feedback (9)
  3. Believing feedback is ignored (8)
  4. Inconvenient channels and lack of time are lesser factors.

**6. Desired System Features**

* High demand for intelligent summarization and analysis:
  + Keyword extraction (8)
  + Auto-generated summary reports (7)
  + Sentiment analysis (6)
  + Visual trend displays (6)
* Few require filtering by class/module/time.

**7. Preferred Feedback Frequency**

* Most teachers prefer to receive feedback **monthly** (6), followed by **after every assignment** (4), and **midterm/final only** (1).

**Teacher-Side Feature Requests (FRs)**

Based on the findings above, we recommend the following feature modules for the teacher-facing feedback system:

1. **Integrated Multi-Channel Feedback Management**
   * Aggregate feedback from various sources (face-to-face, surveys, reps, real-time tools, WeChat/LMS).
   * Centralize and manage scattered feedback to reduce workload.
2. **Information Overload Management**
   * Include keyword extraction, sentiment analysis, and auto-summary features.
   * Enable filtering by time/class/module to help teachers prioritize issues.
3. **Teacher Response and Feedback Loop**
   * Provide a teacher response panel to publish bulk or categorized responses.
   * Automatically notify students of teacher responses to close the loop.
4. **Anonymous Feedback Support**
   * Maintain student anonymity while allowing teachers to access synthesized insights.
   * Optionally allow students to view teachers’ responses to anonymous feedback.
5. **Data Visualization Tools**
   * Offer tools like sentiment trend graphs, word clouds, and feedback evolution charts.
   * Support charts, reports, and summaries for easier interpretation.
6. **Real-Time Feedback Tool Integration**
   * Promote use of tools like Mentimeter, Padlet, and DingTalk.
   * Offer training and seamless integration into teaching workflows.
7. **Customizable Feedback Frequency & Reminders**
   * Let teachers set preferred collection intervals (monthly, per assignment, etc.).
   * Automatically push requests to students based on teacher settings.
8. **Decision Support Based on Feedback**
   * Suggest teaching improvements (e.g., pacing, workload) based on trends in feedback reports.