

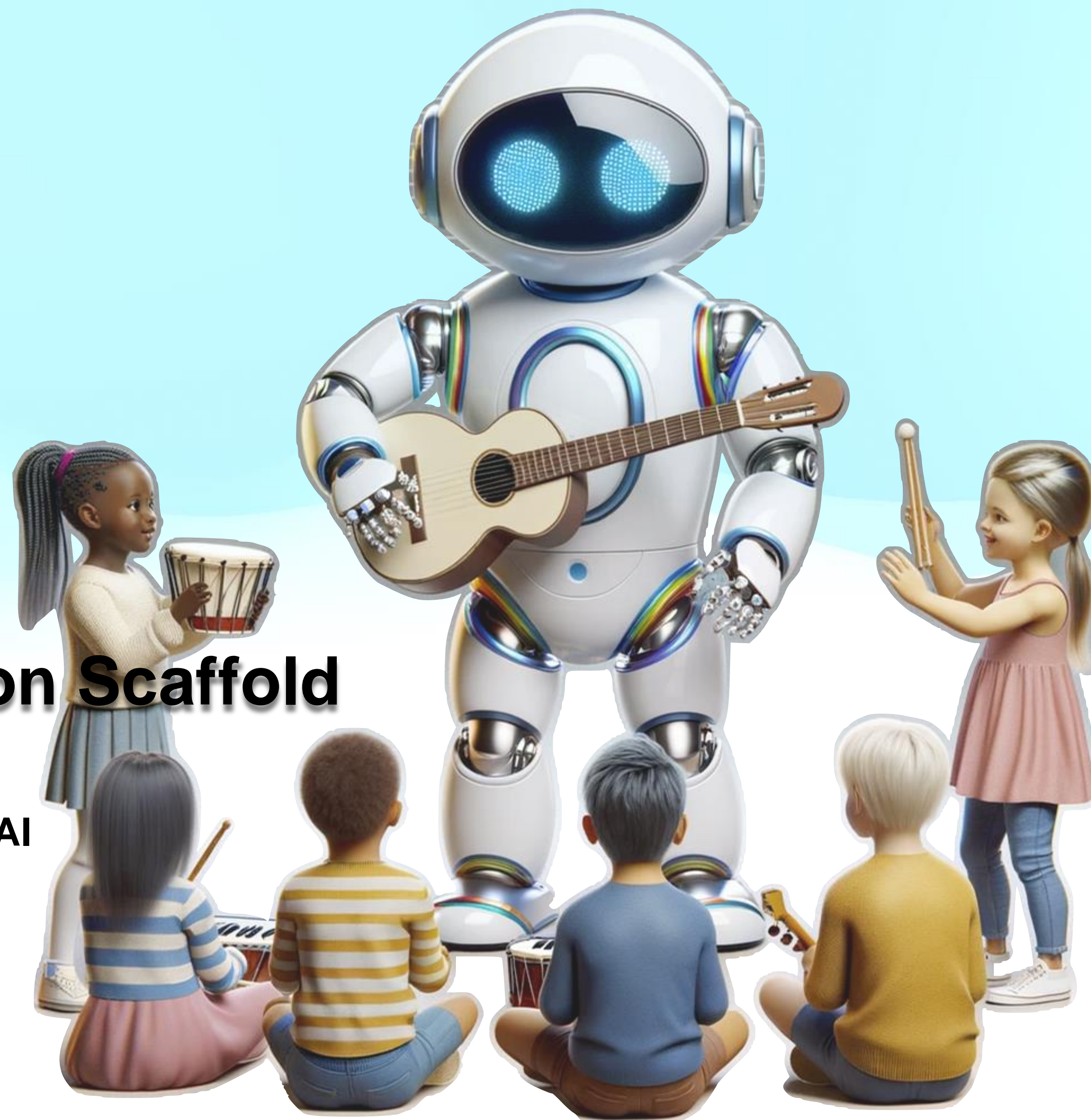
**AI + MUED**  
Moore School of Music

# IMELS.AI

## Interactive Music Education Lesson Scaffold

Enhancing the Educational Experience with ChatGPT and AI  
February 16, 2024 | Farrish Hall, Room 307

Dr. Cory Meals  
Dr. Emily McGinnis  
Dr. Julie Derges



DALL-E | OpenAI





**BACKGROUND**

**MOTIVATION**

**DEVELOPMENT**

**DEMO**

**EVALUATION**

**FUTURE**



**OVERVIEW**





# PLANNING INSTRUCTION

Content

Scope & Sequence

# LAB TEACHING

Presence & Engagement

Instruction & Assessment

# EVALUATION

Peer Feedback

Rubrics



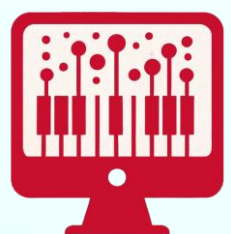
# BACKGROUND



We have identified a gap in the existing music education experience for undergraduates, specifically in the area of pre-service teacher training.

Embracing the mix of limitation and value that static rubrics have to address students' complex and dynamic needs when learning to plan instruction across musical disciplines, our proposed solution is the development of an AI-powered interactive rubric designed to extend the rubric's utility by offering real-time, personalized feedback.

This approach aims to enhance educational outcomes for pre-service music education students by enriching and expanding their pedagogical toolkit through accessible, robust, and grounded feedback.

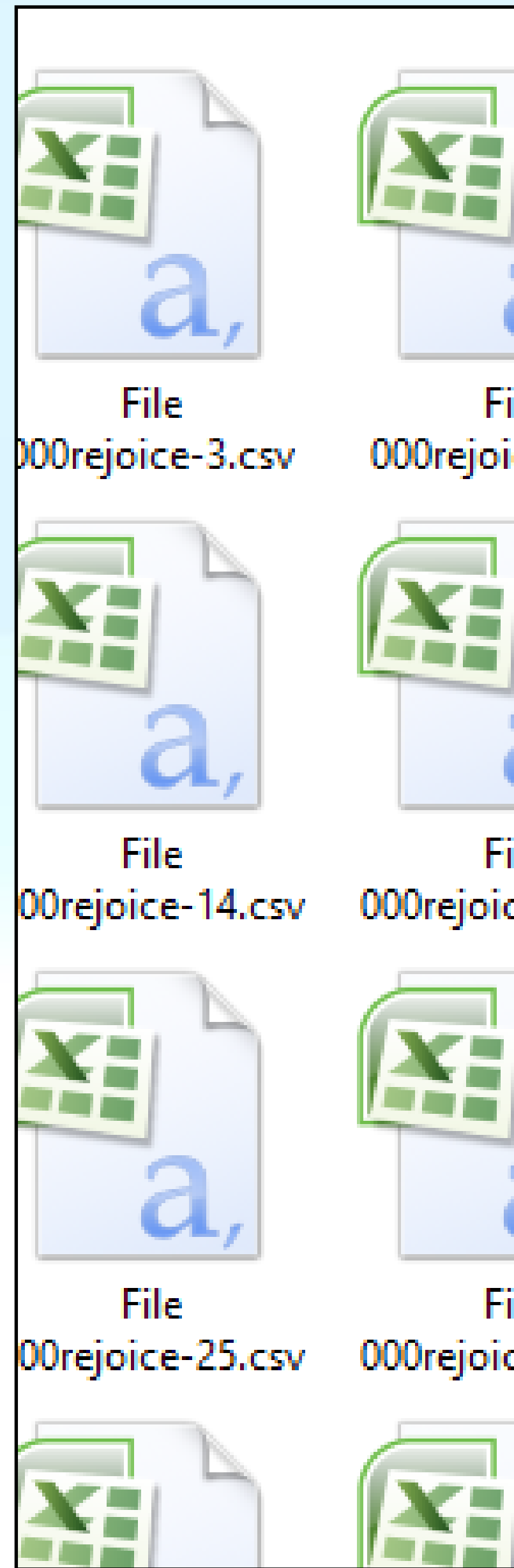




Practicing K-12  
Music Teachers

Naturalistic  
Teaching  
Capture

Post-Teaching  
Lesson  
Annotation

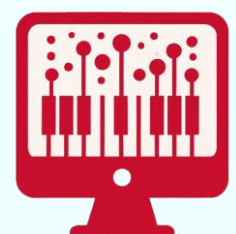
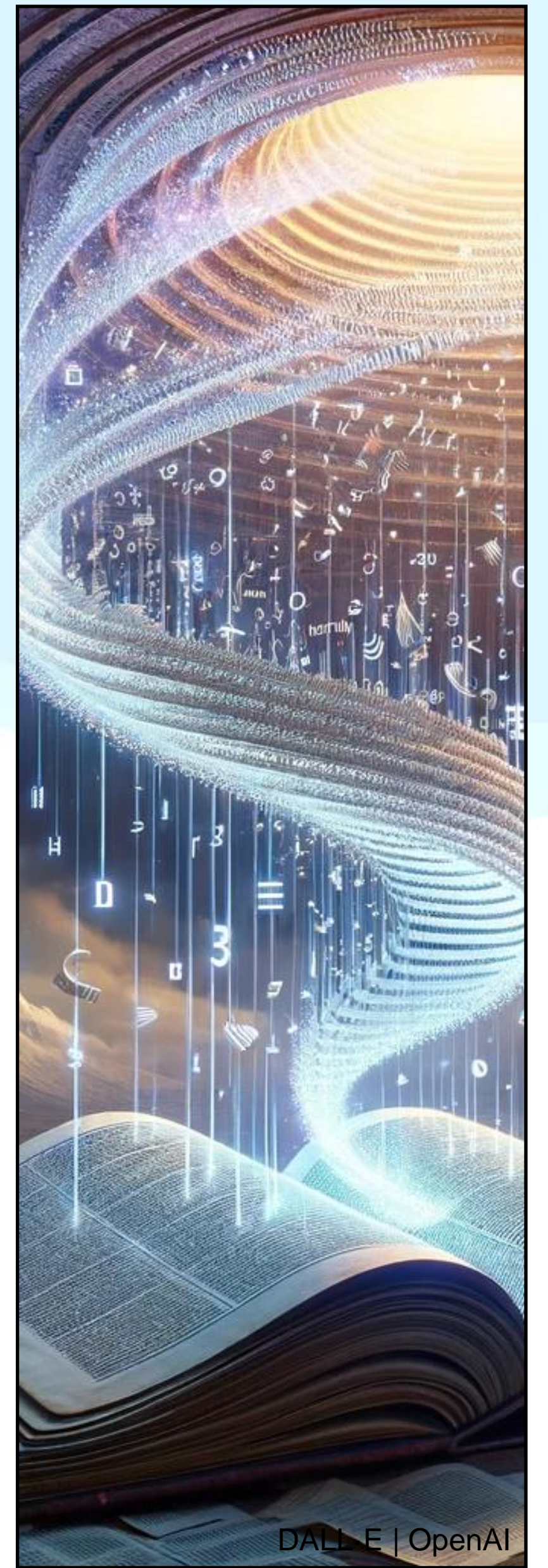


Researcher  
Annotation

Mechanics,  
Spelling,  
Jargon

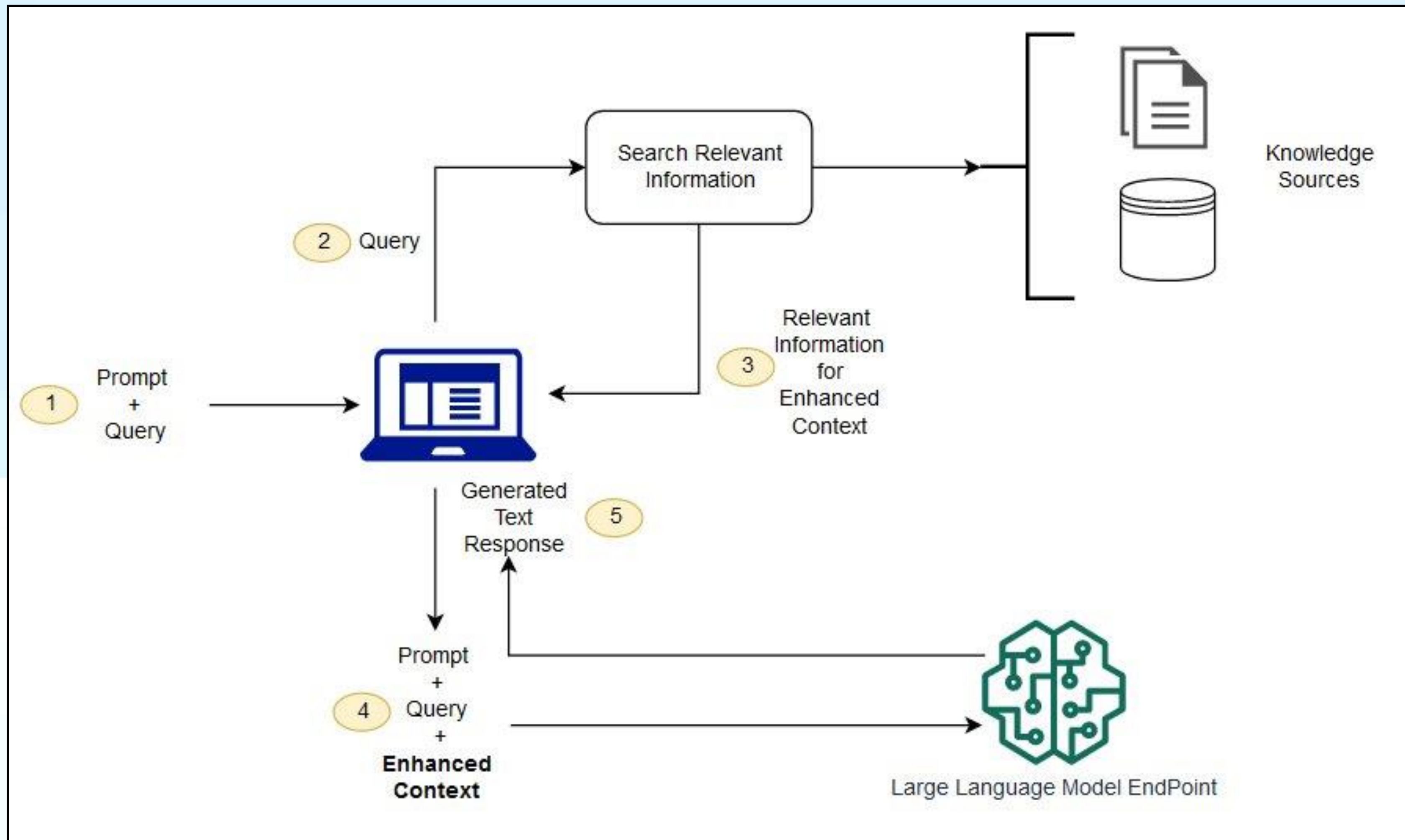
Metadata,  
Hierarchy

JSON Formatting  
& Output

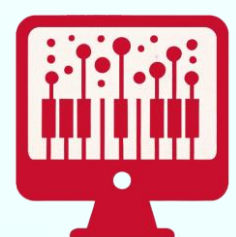


**DATA:** Collection, Cleaning, Prep



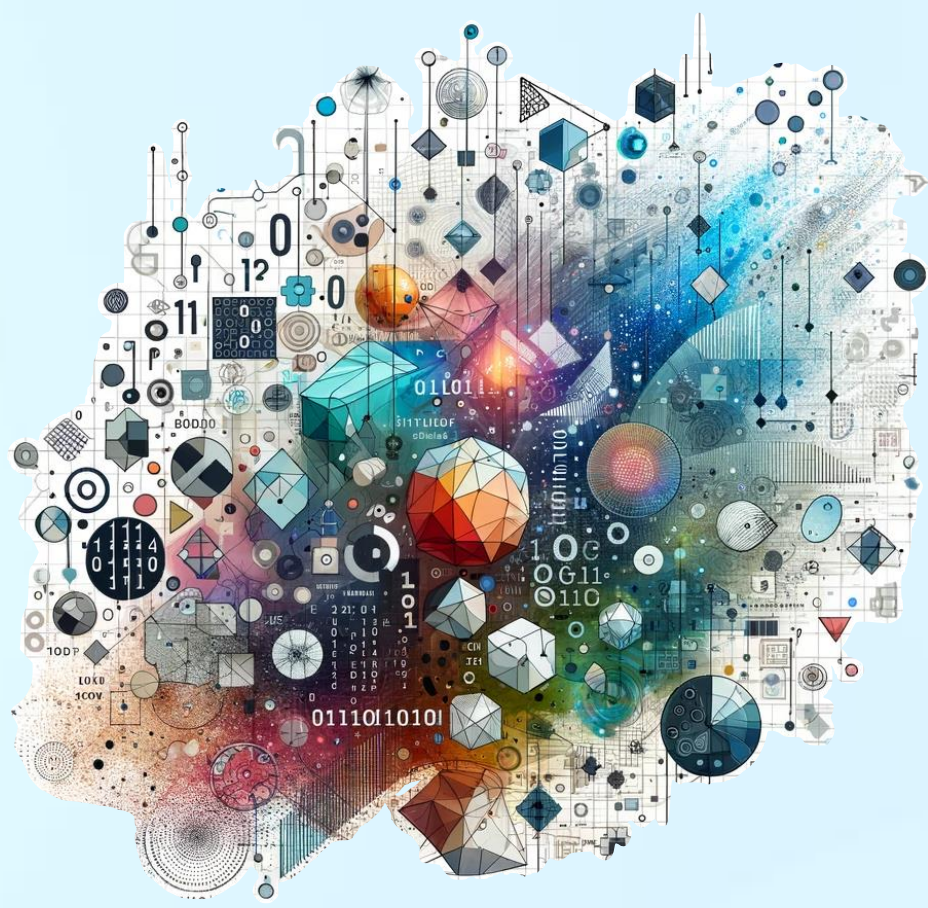


Amazon SageMaker

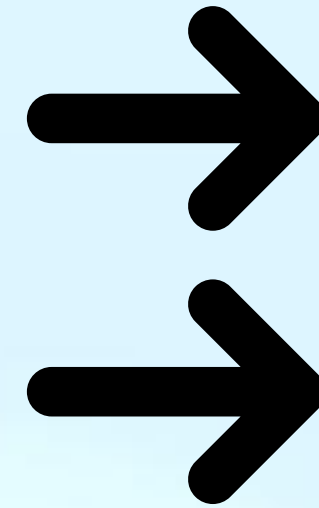


# RAG SYSTEM





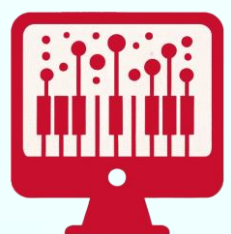
# Learning Objectives



Provide Feedback on Objectives

Write an Objective

As an expert music teacher in Texas, use the provided information to create a model objective that includes the student population, behaviors the students will do in the lesson, the conditions of those behaviors, and the assessment criteria.

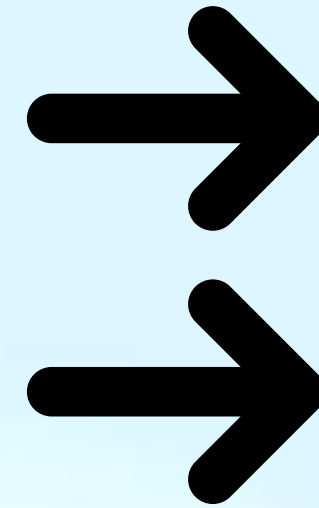


**PROMPT ENGINEERING**





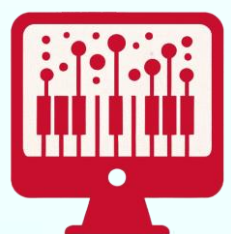
# Texas Essential Knowledge & Skills



Provide Feedback on TEKS

Choose a Better TEKS

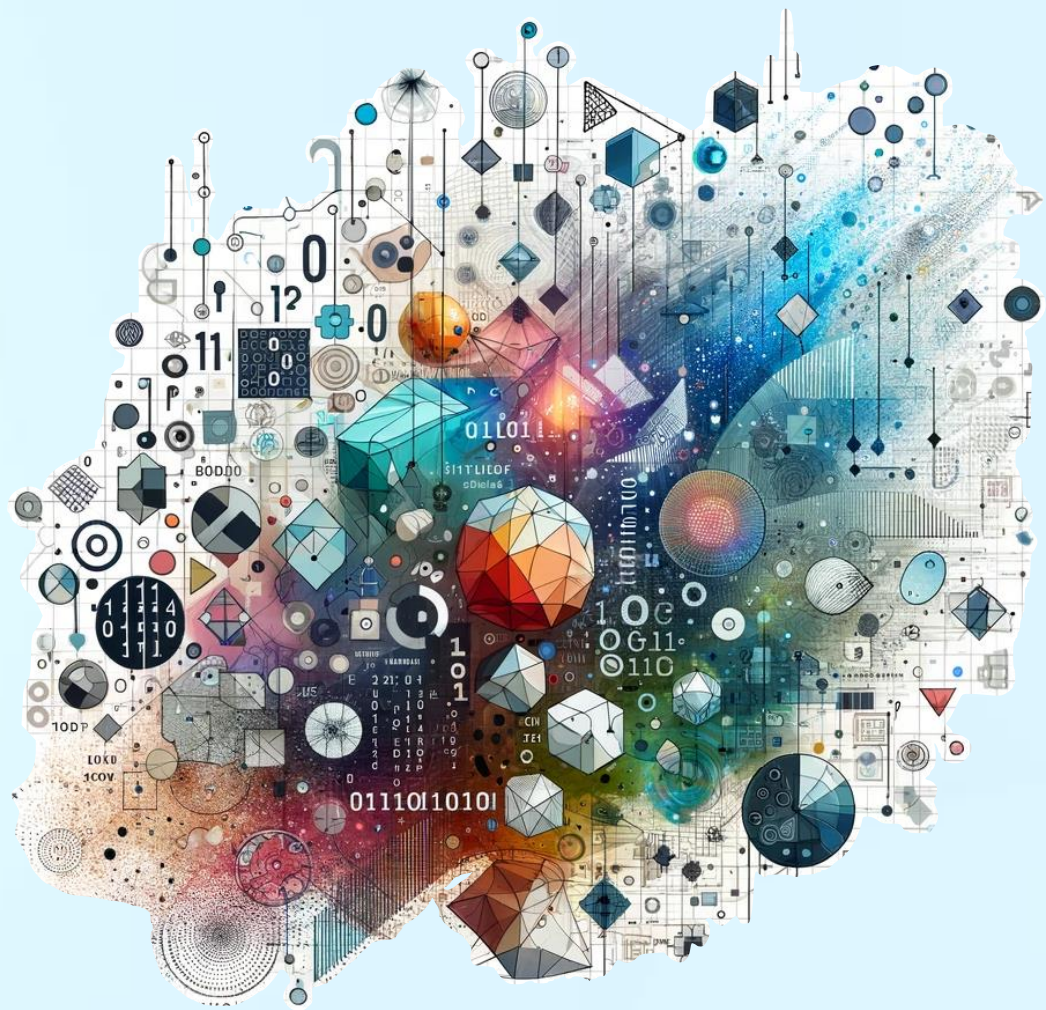
You have expert knowledge of the Texas Essential Knowledge and Skills (TEKS). Your task is to determine if a provided TEKS is the best appropriate match to the objectives, activities, and assessment in a provided lesson plan, or to suggest a better TEKS. Please format your response to include the specific TEKS number and description, the grade level, and your rationale.



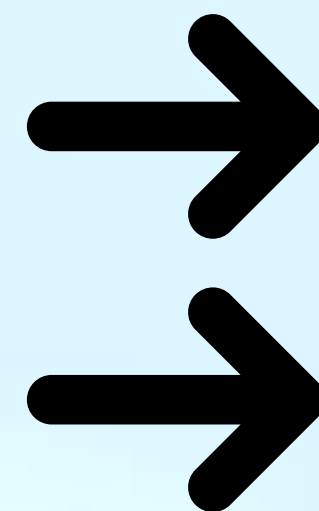
**PROMPT ENGINEERING**







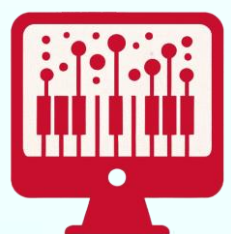
# Lesson Plans



Provide Feedback on Lesson Plans


Write a Lesson Plan

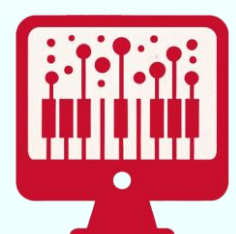
You are an expert music teacher providing feedback to a novice teacher on their lesson plan. Use the template you've been provided to frame your feedback on the lesson plans you are evaluating. Please include suggests to improve the objective, sequence, and assessment of each lesson.



## PROMPT ENGINEERING



|  | DOES WELL  | DOES <u>NOT</u> DO WELL                 | ADJUSTMENTS  |
|---|--|---|--|
| LEARNING OBJECTIVES   | Feedback   | Writing ABCDs                           | Provide our template and more examples               |
| TEKS  | Feedback   | Choosing best match                     | Add TEKS documents to the training files             |
| LESSON PLANNING   | Writing & Feedback<br>Differentiation<br>Varied Activities | Appropriate Timing<br>Specific Pedagogy | Proportions vs Minutes<br>Create a Rubric            |
| MISCELLANEOUS   | Adjusts to further questioning                             | Provides both good and poor feedback    | Adjust specificity in initial assistant instructions |



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ChatGPT - Music-Lesson-Plan x +

chat.openai.com/g/g-oIW3fuO7U-music-lesson-plan-rubric

ChatGPT  
EditorBot  
Research Summarizer  
Academic Assistant  
Music-Lesson-Plan-R...  
ScholarAI  
Explore GPTs


Today

- Lesson Plan Feedback
- Happy Teachers Podium Cartoon
- Enhancing Music Education: AI Ru
- CSV to JSON Metamorphosis
- ANOVA Formula Summarized
- Mad Scientist Trains Model
- Music's Impact on Self-Concept
- Access Issue: Database Unavailab
- Motion in Vocal Production
- Beat Synchrony Predicts Attention
- Lesson Plan Feedback
- Lesson Plan Feedback Request

Add Team workspace  
Collaborate on a Team plan

CM Cory Meals

Music-Lesson-Plan-Rubric

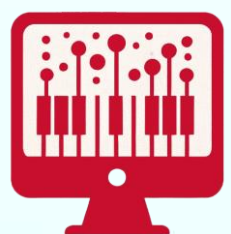
  
**Music-Lesson-Plan-Rubric**  
By Cory Meals

A Lesson Rubric "Robot" That Can Help You Refine Your Secondary Music Lesson Plans Using the TEKS and Real Teacher Resources .  
\*\*Upload Lessons as PDF\*\*

Get citation

Message Music-Lesson-Plan-Rubric...

ChatGPT can make mistakes. Consider checking important information.



# DEMO



## UH Lesson Plan Template - Music

Note: Instructional suggestions for each section are provided in blue text. Delete all blue text and replace it with your own.

|                   |                                      |
|-------------------|--------------------------------------|
| First & Last Name | Victoria Ramirez                     |
| Date              | 11/29/2022                           |
| School            | Moore's Elementary in University ISD |

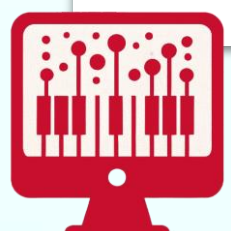
| Lesson Overview                     |   |
|-------------------------------------|---|
| Grade/Ensemble                      | 1st grade   |
| Goal                                | Students will identify and perform beat versus rhythm   |
| Connections                         | Connect to feelings about holiday season and experiences with winter  |
| Materials & Standards               |   |
| Materials                           | None  |
| TEKS                                | Activity A: 3.b.3.D: The student is expected to perform simple partwork, including beat versus rhythm, rhythmic ostinato, and vocal exploration.<br>Activity A: 3.b.3.C: The student is expected to move alone or with others to a varied repertoire of music using gross and fine locomotor and non-locomotor movements. |
| Lesson Procedures                   |   |
| Activity A/Piece A (Estimated time) | Making a Snowman (9-10 minutes)   |
| Title of Activity/Piece             | Making a Snowman  |
| Objective                           | As a class, 1st grade music students will identify and perform steady beat and rhythm with 90% accuracy.<br>(psychomotor, guided response)  |
| Hook                                | [start sitting] Good morning class! How is everyone feeling today?<br>- thumbs down or thumbs up?<br>I have a very important question for you all. Has anyone here ever seen snow?<br>- some say yes, some say no<br>Has anyone here ever made a snowman before?<br>Well today, we are all going to make our own snowman! |

### Strengths:

- **Clear Objective:** The goal of having students identify and perform steady beat and rhythm with 90% accuracy is specific, measurable, and age-appropriate, aligning well with educational standards.
- **Engagement:** The use of a thematic approach related to the holiday season and winter is excellent for student engagement and making connections to their experiences.
- **Interactive Activities:** The sequence of activities, including clapping, singing, and movement, supports active learning and caters to different learning styles.
- **Assessment:** The informal assessment strategies throughout the lesson, observing participation and understanding, are practical and aligned with the lesson's interactive nature.

### Areas for Improvement:

- **Materials:** Listing "None" under materials might be an oversight. Considering the activities involve clapping and singing, specifying any required materials (such as visual aids for the snowman song or rhythm instruments) could enhance lesson clarity and preparation.
- **Differentiation:** While there's a mention of accommodations for special education students, ELLs, and gifted students, incorporating more varied strategies to meet diverse learner needs throughout the activities could strengthen the lesson. For example, offering visual representations of rhythm versus beat or providing alternative engagement strategies for students who might struggle with the physical aspects of the lesson.
- **Closure and Reflection:** The closure involves a fun challenge, which is good. However, adding a reflection component for students to share what they learned or enjoyed can reinforce learning outcomes and provide valuable feedback for future lessons.
- **Integration with Standards:** While TEKS references are included, explicitly connecting each activity's objectives with specific TEKS standards would enhance alignment and clarity on how the lesson achieves educational goals.



# DEMO

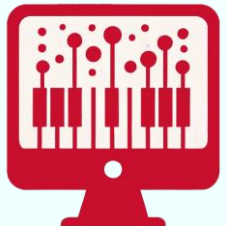
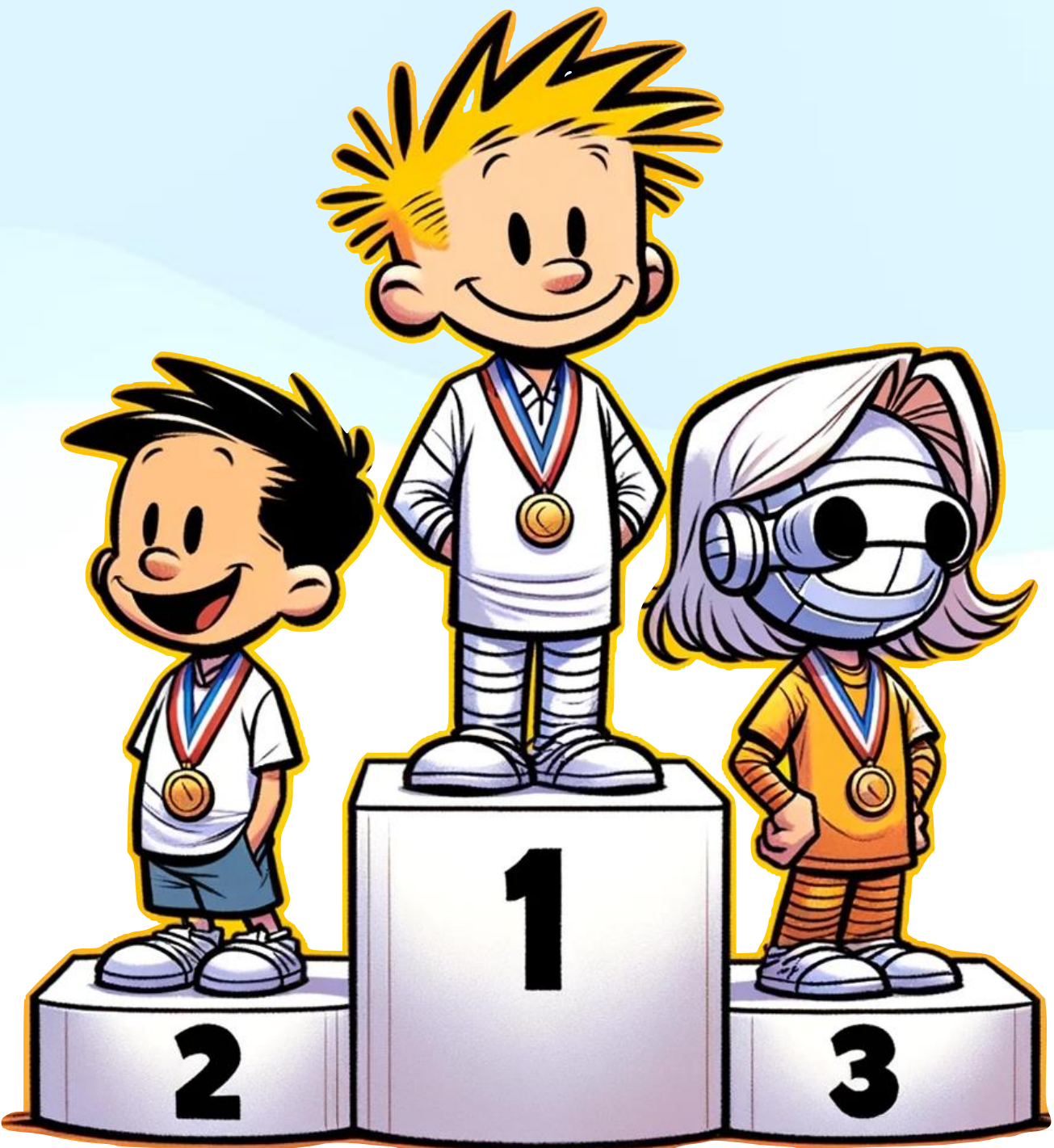
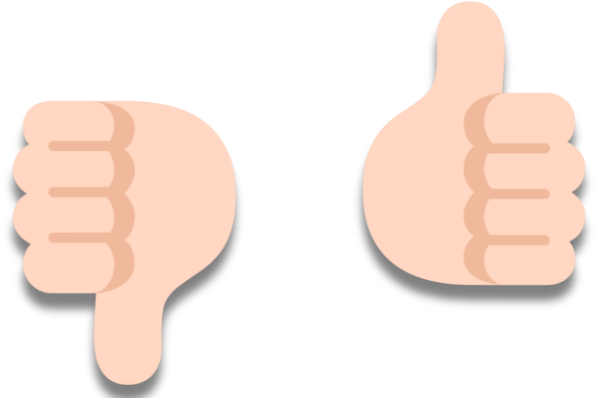
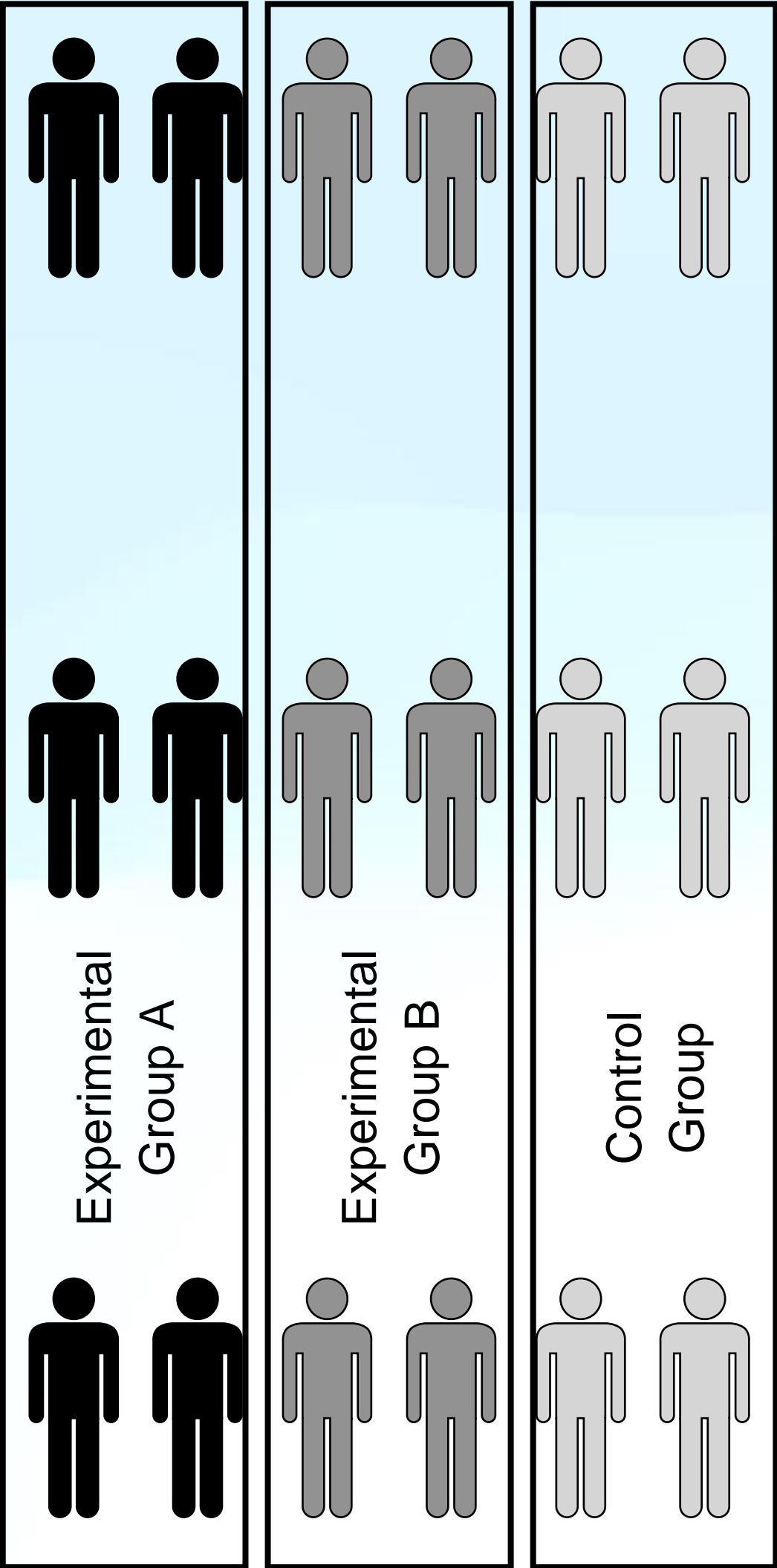


**SPRING 2024**

**MUED 3320**

**MUED 4305**

**MUED 4340**



**TESTING & EVALUATION**



**MUED 4305**

**MUED 3320 MUED 4340**

**MUED 3100 MUED 4220**

**MUED 3101 MUED 4231**

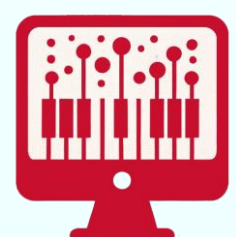
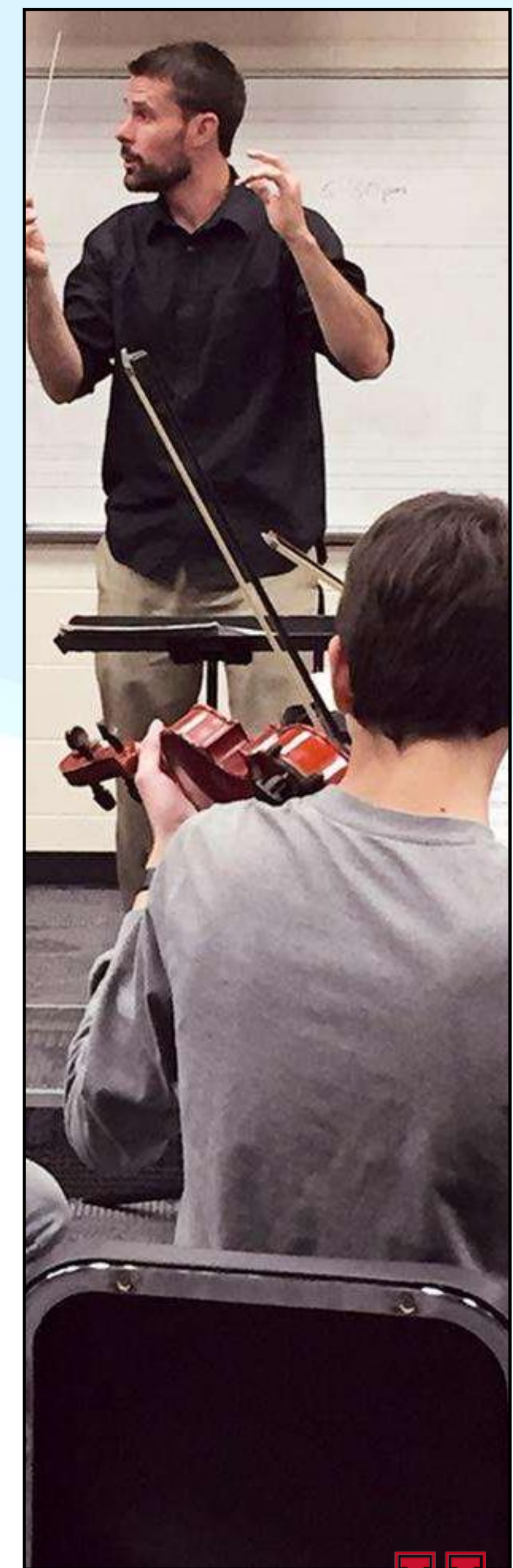
**MUED 3102 MUED 4230**

**MUED 3103 MUED 4221**

**MUED 3104 MUED 4342**

**MUED 3105 MUED 4343**

**MUED 3106 MUED 4344**



**FUTURE: Integrations**

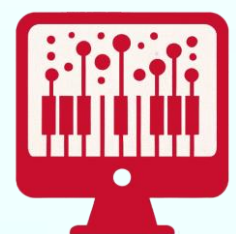
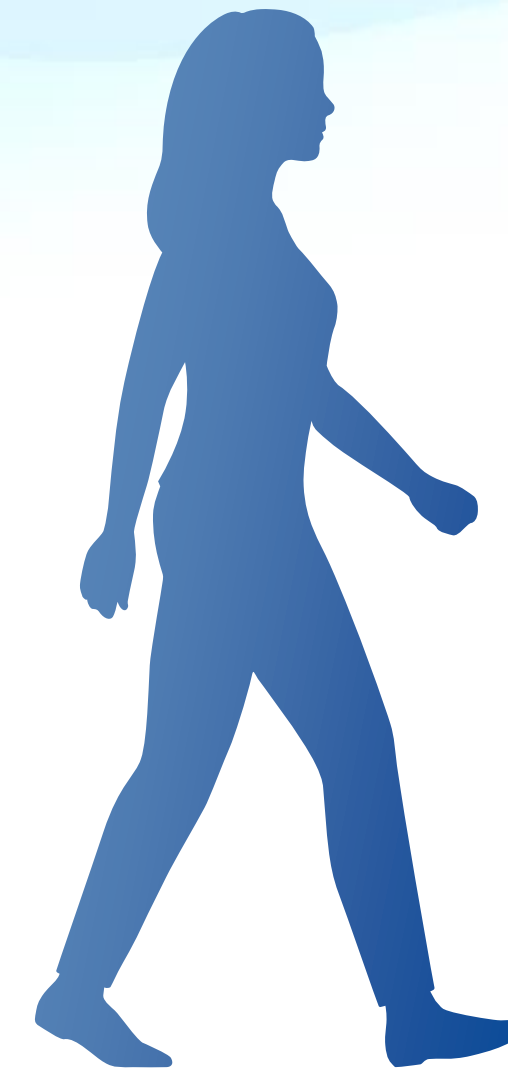


Early-Degree  
Students

Late-Degree  
Student Teachers

Early-Career  
Teachers

Veteran/Mentor  
Teachers



**FUTURE:** Integrations



Expand Lesson Corpus

Efficacy Evaluation (Students & Outcomes)

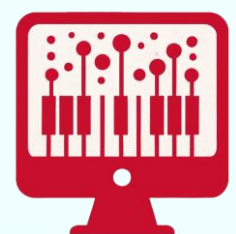
Model Fine-Tuning or Training

Automatic Feature Extraction

AI (Music) Teaching Assistant



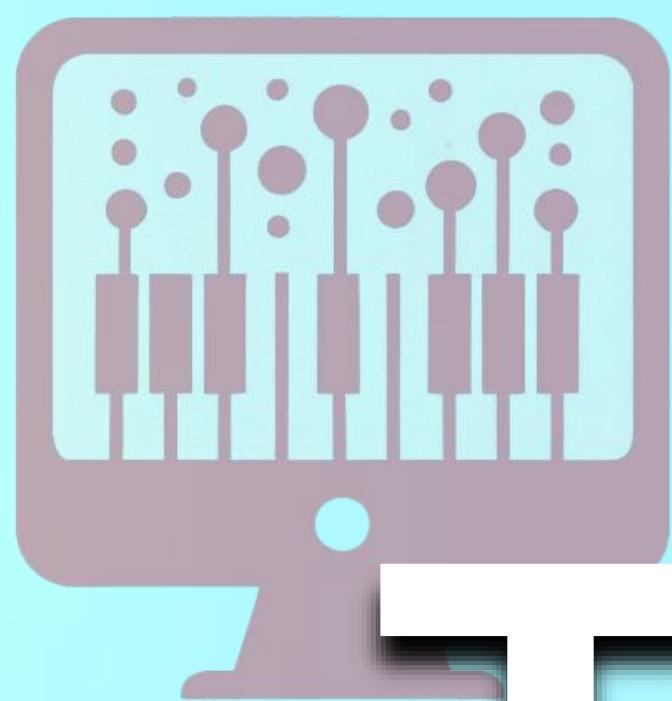
*“An image of a mad computer scientist, inspired by Dr. Frankenstein, in a Victorian-era laboratory. The scene captures the essence of combining ancient magic with modern technology, surrounded by swirling data and an atmosphere filled with eerie tension.”*



**FUTURE:** Research & Development







AI + MUSIC  
Moore School of Music

# THANK YOU!

## IMELS.AI

### Interactive Music Education Scaffold

Enhancing the Educational Experience with  
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**Project Information**

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