



北京科技大学

UNIVERSITY OF SCIENCE AND TECHNOLOGY BEIJING

# AI课程赋能教学资源建设与教学模式新范式 ——以《基础外语》AI课程建设为例

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# 01

## 建设背景：智驭未来

[背景与趋势][课程形态演进] [教学需求攀升]



## 背景与趋势

“深入实施**国家教育数字化战略**，  
扩大优质教育资源受益面，  
提升终身学习公共服务水平。 ”

——习近平主席在2024年全国教育大会上的讲话





# 中华人民共和国教育部

Ministry of Education of the People's Republic of China

## 背景与趋势

“加快建设教育强国，推进**教育数字化**是重要内容。党的二十大报告对办好人民满意的教育作出重要部署，强调要“**推进教育数字化**”。习近平总书记在主持中共中央政治局第五次集体学习时指出：“**教育数字化**是我国开辟教育发展新赛道和塑造教育发展新优势的重要突破口。”习近平总书记的重要论述，深刻揭示了**教育数字化的关键作用**，为我们把握新一轮科技革命和产业变革深入发展的机遇、建设教育强国指明了方向和路径。

——教育部《以数字化开辟教育发展新赛道》



## 背景与趋势

12月27日，教育部召开**2024年全国教育数字化工作总结会**，围绕深入学习贯彻党的二十大和党的二十届三中全会精神及全国教育大会精神，总结国家教育数字化战略行动实施三年成效和经验，**谋划未来三年教育数字化安排和重点举措**。

党的十八大以来，以习近平同志为核心的党中央将**教育数字化**作为**数字中国**和**教育强国建设**的重要内容，提出一系列新思想新论断、作出重要战略部署。

——2024年全国教育数字化工作总结会





## 背景与趋势

“持续推进国家**教育数字化战略**,  
助力**教育教学深层次变革**。”

——2025年全国教育工作会议



## 背景与趋势

“未来我们将致力于培养一大批具备数字素养的教师，加强教师队伍建设，把**人工智能技术深入到教育教学和管理全过程、全环节**，研究其有效性、适应性，让青年学生更加**主动地学**，让教师更加**创造性地教**。”

——教育部部长 怀进鹏





# 北科大 大学英语教学改革发展历程

教育部大学英语教学改革示范学校	2007年
精品课程、优秀教学团队、国家社科项目	
<b>国家级精品课</b> 北京市精品课、优质课程 北京市优秀教学团队	<b>2008年</b> 2008、2023年 2008年
国家精品在线开放课程	<b>2018年</b>
国家级一流本科课程	<b>2020、2023年</b>
国家社科基金项目	<b>2016、2019年</b>
名师、人才奖	
北京市教学名师、青年名师 教育部新世纪优秀人才	2009、2022年 2010年
精品教材	
国家“十一五”规划教材 国家“十二五”规划教材 北京市精品教材建设立项 北京市精品教材 <b>北京市优质教材</b>	2010年 <b>2015年</b> 2009年 2011年 <b>2020、2024年</b>
教学成果奖	
北京市教育教学成果奖 一等奖 北京市教育教学成果奖 二等奖 <b>北京市教育教学成果奖 二等奖</b> 北京科技大学教育教学成果奖	2008年 2012年 <b>2017年</b> 2013-24年

根据学生水平实施  
分级教学阶段

2008年以前

2014年以前

基于现代教育技术  
辅助英语教学阶段

信息技术与课程教学  
深度融合的教学阶段

2015年至今

2012年始

国际学术交流能力提  
升探索与实践

国际组织后备人才  
培养

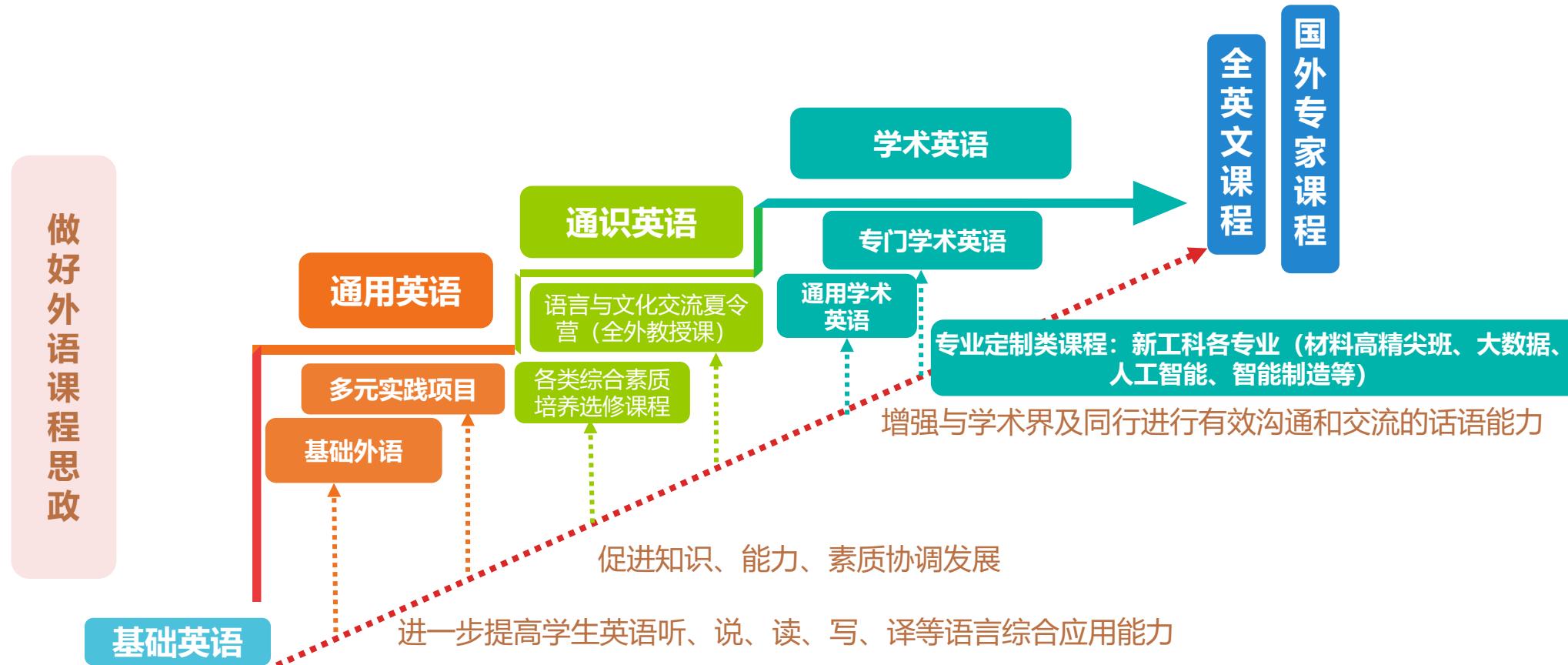
2023年开始

2024年开始

AI赋能大学英语教学  
探索与实践



# 北科大 大学英语教学改革发展历程



# 课程形态演进：从传统课堂到AI课程的演变历程



# 《基础外语》：从传统课堂到AI课程的演变历程



# 《基础外语》：从传统课堂到AI课程的演变历程

The screenshot shows the 'Basic Foreign Languages' course page on the Xuetang Online platform. At the top left is the university logo and 'Xuetang Online' logo. A large purple button on the left says 'AI课程'. The main content area features three concentric circular diagrams representing the evolution of the course:

- AI Application**: The top circle contains icons for a book and a person, with the text 'AI Application'.
- Course Model**: The middle circle contains four icons labeled 'Knowledge Model' (2322 knowledge points), 'Problem Model' (4 problems), 'Ability Model' (221 abilities), and 'Enhancement Model' (represented by an upward arrow).
- Resource Map**: The bottom circle contains icons for a globe and a document, with the text 'Resource Map' and '5 major categories 510 resources'.

To the right of the diagrams is a sidebar titled '基础外语' (Basic Foreign Languages) with sections for '基础课程' (Basic Courses), '外语学科' (Foreign Language Subjects), '编辑标签' (Edit Tags), '王娜' (Wang Na), '陈娟文' (Chen Juanwen), '24H智能学伴' (24H Smart Study Buddy), and '编辑助理' (Edit Assistant). It also includes a message from the 24H Smart Study Buddy and two question boxes:

- What is the practical significance and future application of learning a basic foreign language?
- What are some effective learning strategies to help me improve my language skills more efficiently?

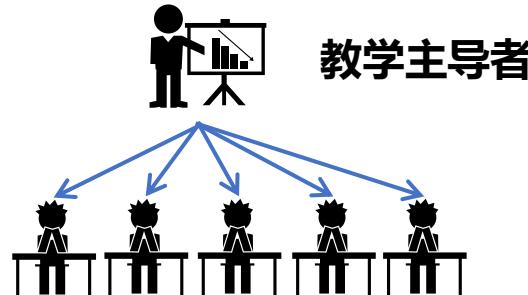
A pink input field at the bottom right says '欢迎向我提问~' (Welcome to ask me~).

At the very bottom are navigation links: '课程概述' (Course Overview), '知识模型' (Knowledge Model), '能力模型' (Ability Model), '问题模型' (Problem Model), 'AI应用' (AI Application), '资源地图' (Resource Map), and '导航设置' (Navigation Settings).



# 教学需求攀升

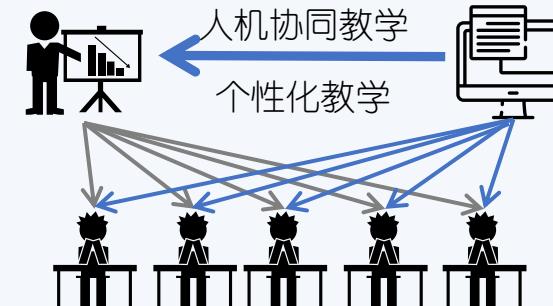
教与学需求不对等，个性化需求不断攀升



传统教学模式痛点：

- 教育资源受到地域和人力资源限制，难以实现教育资源的公平分配
- 教学效率低，一对多教学方式难以满足学生的个性化需求
- 教师机械性事务繁重，缺乏成长与培训

AI课程赋能教与学需求对等



AI赋能优化：

- 个性化学习，根据学生情况提供个性化学习内容和指导
- 全天候学习，打破传统教育的时空限制
- 多样化教学方式，结合技术手段，提高教学质量
- 减轻教师任务，专注与学生的互动与指导，高效管理课堂



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## 建设宗旨：赋能教学

[突破瓶颈问题] [精准赋能]

## 突破瓶颈问题



# 精准赋能：AI赋能实现智能助学、智能助教

01

借助生成式人工智能，建设新型语言类基础通识课，探索新型智能教与学模式

02

建设课程知识、能力、问题三大图谱，帮助学生实现结构化的知识建构全面掌握课程知识体系

03

提供个性化学习支持和智能化学习体验，培养学生AI时代的人机交互能力、自主学习能力和思辨思维

04

AI深度参与智能备课、智能授课、智能批改、智能评估环节，为教师减负增效，提升教学质量



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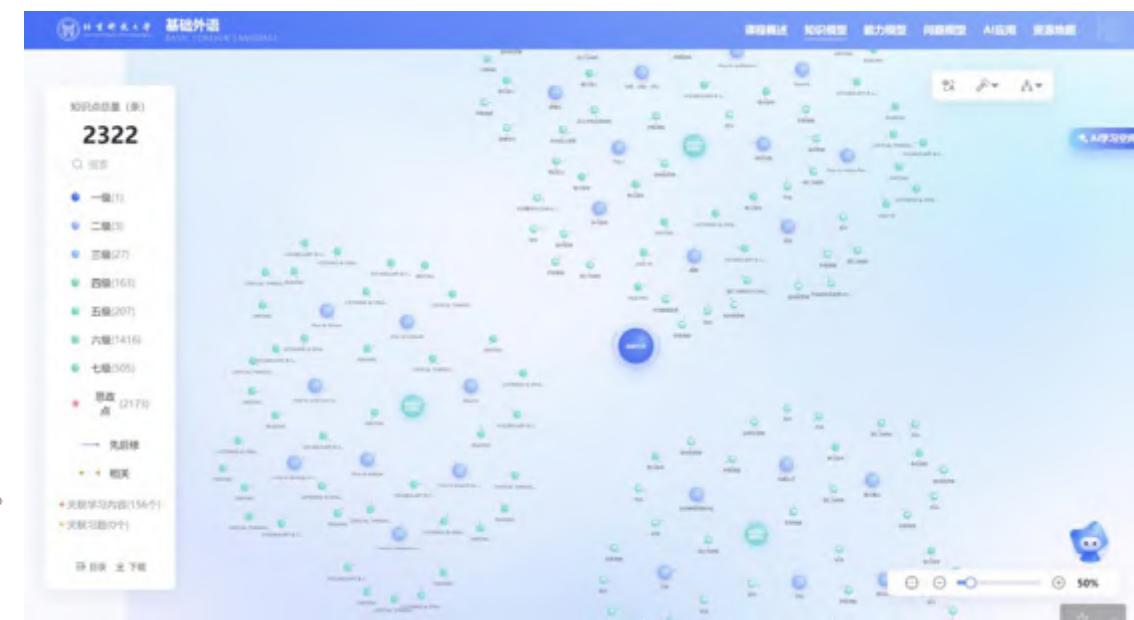
## 建设理念：解构重组

[知识碎片化] [知识再重组]

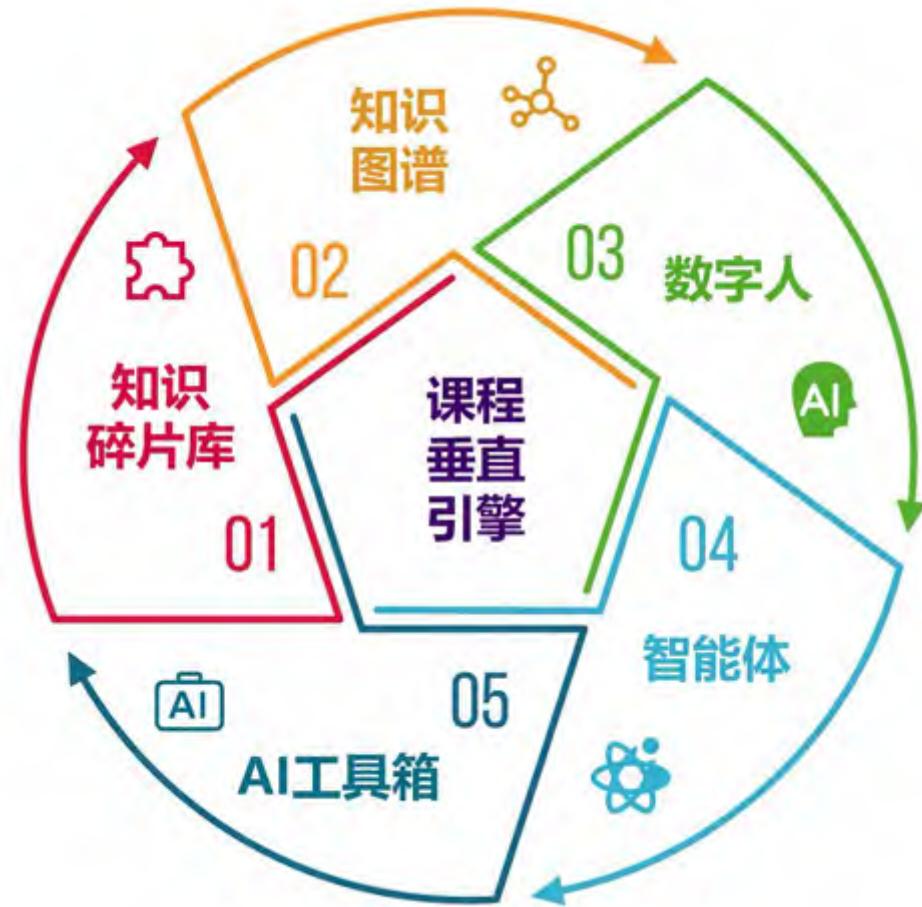
# 《基础外语》课程知识解构与重构



# 《基础外语》课程知识解构与重构



# 《基础外语》课程知识解构与重构



秉承“以学生为中心”的教育理念，融合**生成式人工智能**等前沿信息技术，基于教学资源、教学工具和教学环境，开展**混合式教学**应用，并进行持续优化的一种创新性课程。

- 1 组 知识碎片库**
  - 碎片库/向量知识库/RAG/多维空间
  - 智能学伴/智能教伴
  - 精准学习/全场景学习
- 1 张 知识图谱**
  - 课程知识结构/跨课程/跨学科
  - 学习路径/知识关联/能力达成度
- 1 款 数字人**
  - 个性化教学/情境教学/智能辅导
  - 内容更新/教学辅助/交互式学习
  - 精准学习
- 1 套 智能体**
  - 长期记忆/短期记忆/任务规划
  - 思维链/任务分解/网络搜索
  - 情景模拟/情景互动
- 1 个 AI工具箱**
  - 智能备课/智能批改/资源推荐/AI出题
  - 课前伴学/课上互动/课后辅导

五个一



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## 建设内容：立体交互

[课程资源建设] [知识图谱建设] [指令设置]

# 课程资源建设

## 充分利用已有教学资源：

- 采用RAG技术，  
构建课程增强模型

1. 文件数 509 个
2. 视频时长 8.8 小时
3. 切片数量 14000 个
4. 解析字符数 6810.78 k

其中：

- 电子教材 3本
- 讲义课件 200个
- 习题试卷 16份
- 音视频资料 288个

基于教师团队多年积累，  
将知识库资料丰富完善



The screenshot shows a dashboard for course resource management. At the top, there are summary statistics: 509 files, 8.8 hours of video, 6810.78k characters, and 1.4 million knowledge slices. Below this is a table with two sections: '关联' (Associated) and '上传' (Uploaded). The '关联' section includes '关联资源' (0/0), '电子教材' (3/3, updated 2024-11-13 17:35), '讲义课件' (186/202, updated 2024-10-29 11:57), '相关论文' (0/0), '习题试卷' (16/16, updated 2024-10-29 11:54), and a '全上传文件' button. The '上传' section includes '往年作业 (包括评分标准)' (0/0), '相关案例' (0/0), and '其他资料' (288/288, updated 2024-12-27 15:01). At the bottom, there are two cards: one showing '资源总数 509' and another showing '视频个数 110', '视频导引 157', and '时长 9h'.

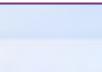
来源	知识库	处理成功/上传资源数量	更新时间
关联	 关联资源	0 / 0	
	 电子教材	3 / 3	2024-11-13 17:35
	 讲义课件	186 / 202	2024-10-29 11:57
	 相关论文	0 / 0	
上传	 习题试卷	16 / 16	2024-10-29 11:54
	 往年作业 (包括评分标准)	0 / 0	
	 相关案例	0 / 0	
	 其他资料	288 / 288	2024-12-27 15:01



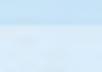
资源总数  
**509**



视频个数  
**110**



视频导引  
**157**



时长  
**9h**

# 课程资源建设

初步建设知识碎片库，  
构建课程资源地图：

- 在三层架构的基础上，为了呈现出更好的应用效果，近期着重重建好**课程垂直引擎**，进而赋能教学应用。
- 具体来说，将原始教学资源进行**碎片化处理**，并进行**知识点标记**，为学生在学习知识点时提供**智能资源推送、智能评测**奠定基础。

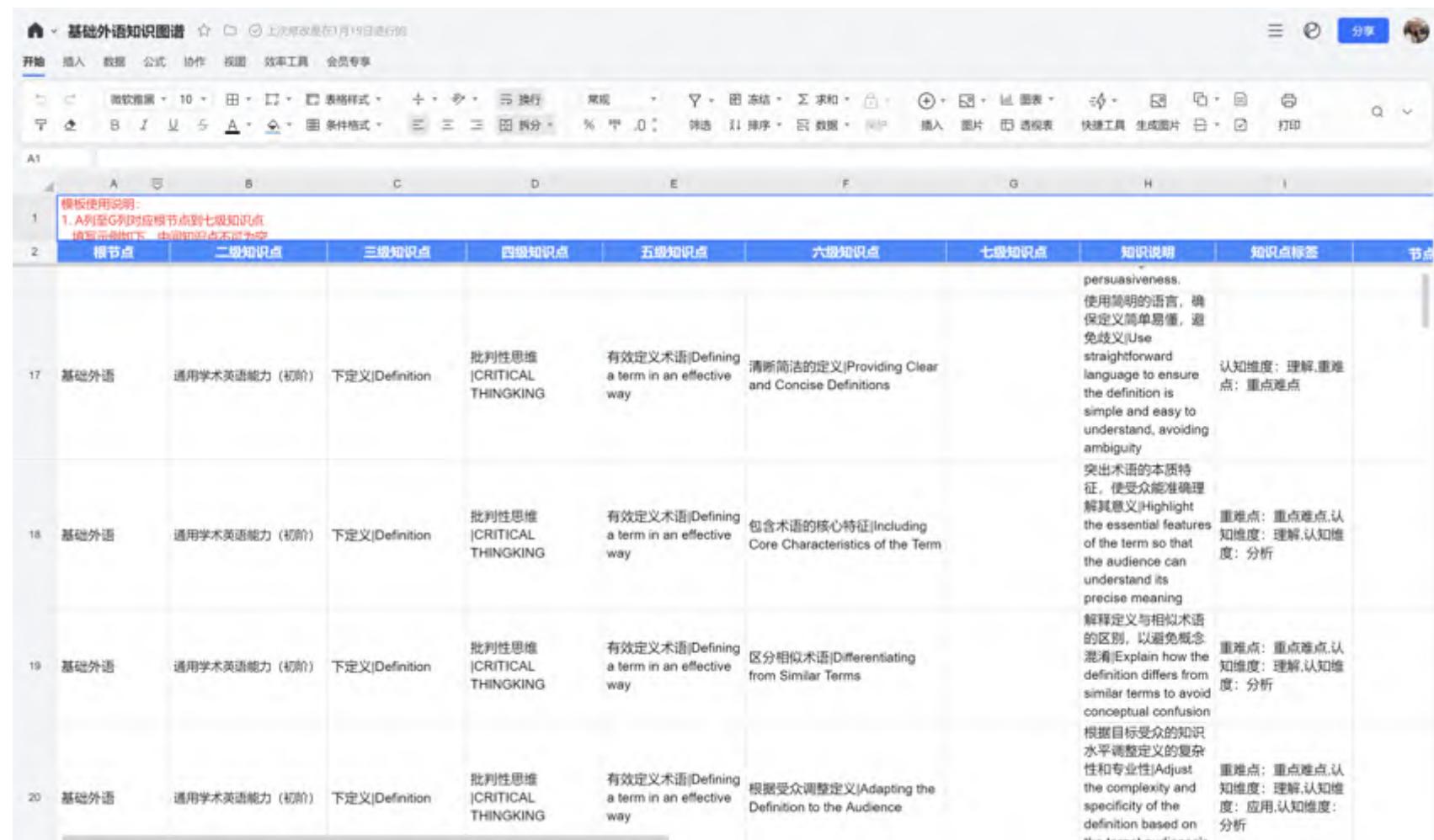
The screenshot shows a web-based platform for managing course resources. At the top, there's a navigation bar with tabs like '基础外语' (Basic English), '基础课程' (Basic Courses), '外语学科' (Foreign Language Subjects), and '编辑标准' (Editing Standards). Below the navigation is a main content area divided into several sections:

- AI 知识库**: Displays statistics: 131 资源总数 (Total resources), 21 知识片断 (Knowledge fragments), 110 视频导引 (Video guides), 0 习题 (Exercises), and 5 重点知识点 (Key knowledge points). It also shows thumbnail images for writing, listening, speaking, and reading skills.
- 智能应用**: Shows a video thumbnail for 'Unit 7 Social Life-MiniLec-4 Five steps to a literature review.mp4' and a blue digital person icon labeled '智能数字人' (Smart Digital Person).
- 课程概述**: Includes sections for '热门知识点' (Hot Knowledge Points), '热门分类' (Hot Categories), and '资源类型' (Resource Types) with options for 图片 (Image), 文本 (Text), and 视频 (Video).
- 具体资源列表**: Shows three video thumbnails:
  - 'Unit 7 Social Life-MiniLec-3 Literature review in lectures.mp4'
  - 'The China Aviation Oil Crisis 2004 Course of Events 2003: In the second half of the year...' (with a note about effective definition terms)
  - 'The COSCO's FFA Loss Incident in 2008'
- 智能功能模块**: Includes sections for 'Revision and Editing' (with a note about not considering the first draft as the final product), 'Identifying Keywords' (with a note about training to pick out keywords), and 'Speaking Signal Phrases' (with a note about identifying key words that carry the most meaning).

# 课程资源建设

**初步建设知识碎片库，  
构建课程资源地图：**

- 在三层架构的基础上，为了呈现出更好的应用效果，近期着重重建好**课程垂直引擎**，进而赋能教学应用。
- 具体来说，将原始教学资源进行**碎片化处理**，并进行**知识点标记**，为学生在学习知识点时提供**智能资源推送、智能评测**奠定基础。



根节点	二级知识点	三级知识点	四级知识点	五级知识点	六级知识点	七级知识点	知识说明	知识点标签	节点ID
17	基础外语	通用学术英语能力（初阶）	下定义 Definition	批判性思维 CRITICAL THINKING	有效定义术语 Defining a term in an effective way	清晰简洁的定义 Providing Clear and Concise Definitions	persuasiveness. 使用简明的语言，确保定义简单易懂，避免歧义 Use straightforward language to ensure the definition is simple and easy to understand, avoiding ambiguity	认知维度：理解,重难点：重点难点	
18	基础外语	通用学术英语能力（初阶）	下定义 Definition	批判性思维 CRITICAL THINKING	有效定义术语 Defining a term in an effective way	包含术语的核心特征 Including Core Characteristics of the Term	突出术语的本质特征，使受众能准确理解其意义 Highlight the essential features of the term so that the audience can understand its precise meaning	重难点：重点难点,认知维度：理解,认知维度：分析	
19	基础外语	通用学术英语能力（初阶）	下定义 Definition	批判性思维 CRITICAL THINKING	有效定义术语 Defining a term in an effective way	区分相似术语 Differentiating from Similar Terms	解释定义与相似术语的区别，以避免概念混淆 Explain how the definition differs from similar terms to avoid conceptual confusion	重难点：重点难点,认知维度：理解,认知维度：分析	
20	基础外语	通用学术英语能力（初阶）	下定义 Definition	批判性思维 CRITICAL THINKING	有效定义术语 Defining a term in an effective way	根据受众调整定义 Adapting the Definition to the Audience	根据目标受众的知识水平调整定义的复杂性和专业性 Adjust the complexity and specificity of the definition based on the target audience's	重难点：重点难点,认知维度：理解,认知维度：应用,认知维度：分析	

# 知识图谱建设

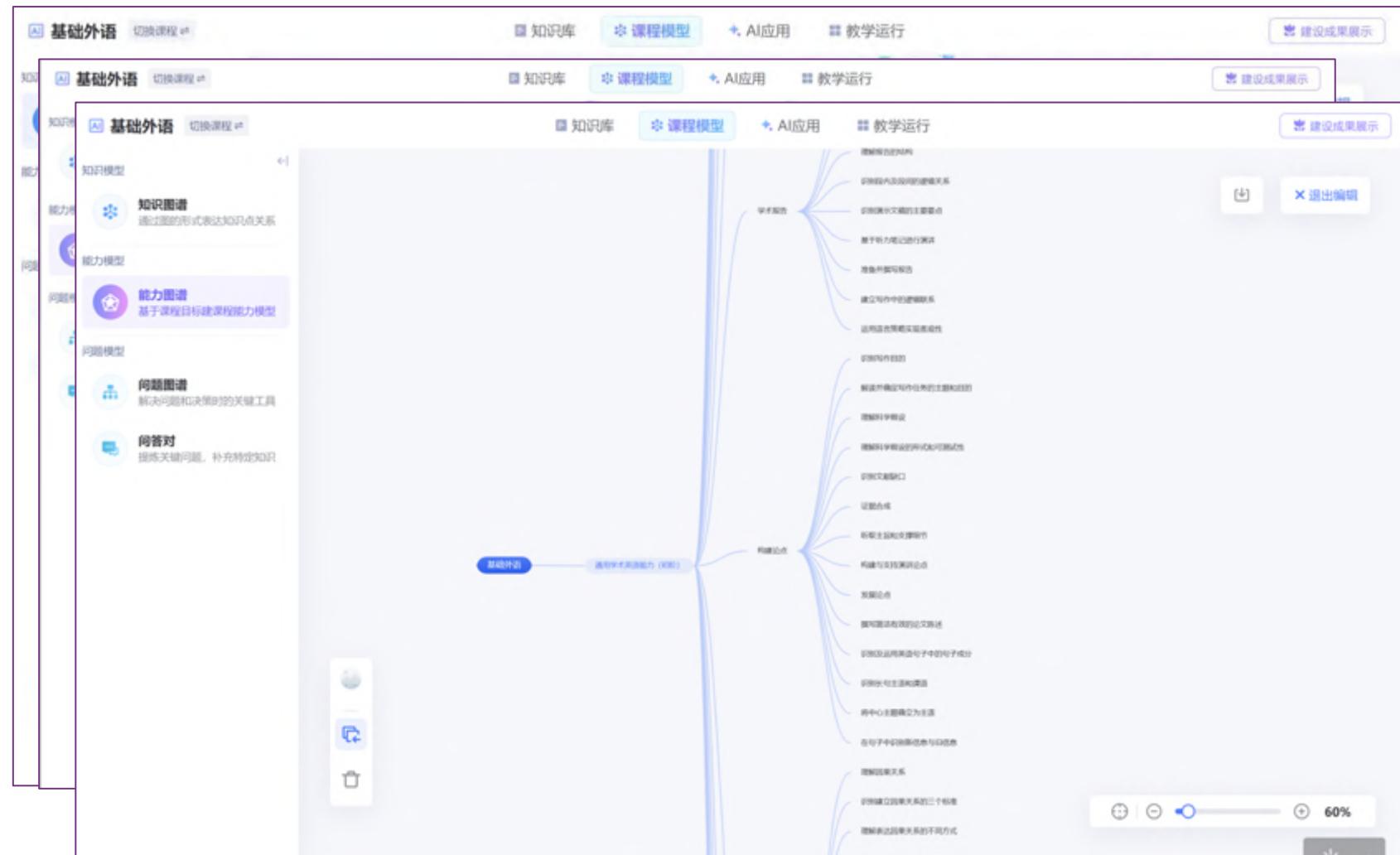
## 全面、科学的图谱建设：

- 知识层面：**将三本教材核心内容融会贯通，从五大核心技巧出发，全面梳理课程知识点；
- 能力层面：**以能力目标为导向，设计初-中-高三阶能力点。

其中：

- 知识点总量 2322 条
- 思政点数量 2173 条
- 关联学习内容 155 个
- 能力点数量 9 条

(持续建设中...)



# 指令设置

## 外语课程专属实用工具：

- 针对课程中的四大核心功能，分别设置相应的指令卡片，构成课程专属的AI工具箱，为学生打造语言伴学的一对一助手，包括：

- 批判性思维
- 阅读
- 听说
- 写作
- 词汇与结构

- 作为全校基础性课程，不仅培养学生扎实的语言基本功，还需培养学生独立思考、逻辑论证的批判性思维能力以及用英语进行学术交流的能力。

The screenshot displays the 'AI Application' section of a learning platform. At the top, there are tabs for 'Knowledge Base', 'Course Model', 'AI Application' (which is selected), and 'Teaching Operation'. On the left, a sidebar lists several tools: '24-hour Smart Study Buddy' (selected), 'Smart Teaching Assistant' (with 'Assistive Teaching Design'), 'Smart Grading' (with 'Grade Correction and Evaluation'), 'Resource Search' (with 'Learning Resource Search and Recommendation'), 'One-click Question' (with 'Question Generation'), and 'Instructional Database'. A blue button at the bottom of this sidebar says '+ Open AI Application'. Below the sidebar, a '24-hour Smart Study Buddy' card is shown, featuring a welcome message from the AI and five questions for interaction. To the right of this card is a 'Instruction Center' panel with sections for 'Answering', 'Practical Tools', 'VOCABULARY & STRUCTURE', 'writing' (selected), 'reading', and 'CRITICAL THINKING'. This panel also includes 'Text Revision and Correction' and 'Text Generation' features. At the bottom of the page, there are nine cards arranged in a grid, each representing a specific AI tool: 'Knowledge Point Answering' (24-hour Smart Study Buddy), 'Chinese-to-English Translation' (24-hour Smart Study Buddy), 'English-to-Chinese Translation' (24-hour Smart Study Buddy), 'Text Revision and Correction' (24-hour Smart Study Buddy), 'Text Generation' (24-hour Smart Study Buddy), 'Sentence Structure Analysis' (24-hour Smart Study Buddy), 'Grammar Explanation' (24-hour Smart Study Buddy), 'Literature Guidance' (24-hour Smart Study Buddy), and 'Knowledge Point Extension' (24-hour Smart Study Buddy). The number '7' is located in the bottom right corner.



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05

## 课程应用：范式创新

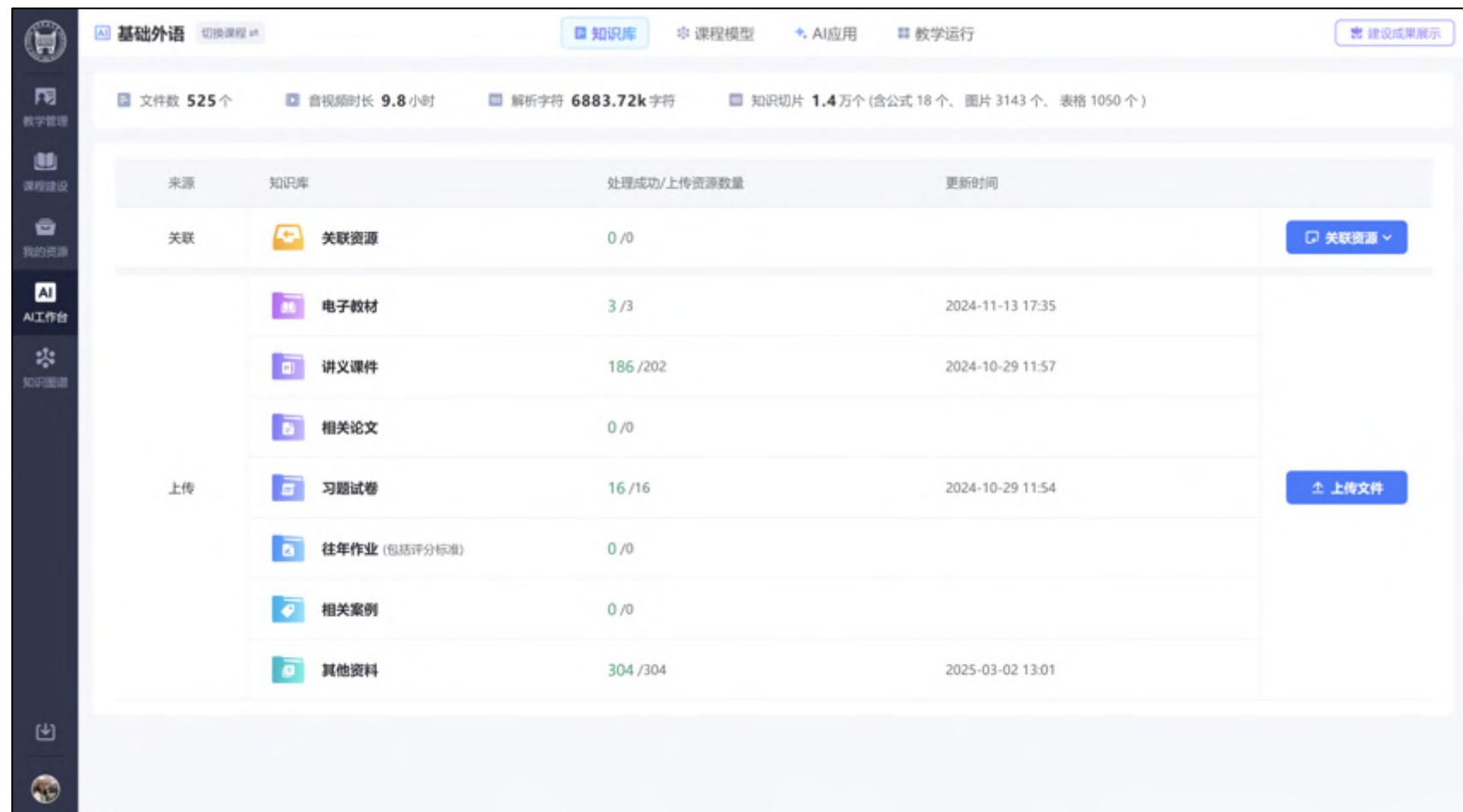
[巧用知识图谱] [应用场景多元] [赋能教学应用]

# 巧用知识图谱

## 教学双方巧用知识图谱：

### 【对于教师】

- 以知识图谱为纲建设并沉淀优质多模态教学资源



The screenshot shows a user interface for managing teaching resources using a knowledge graph. The top navigation bar includes tabs for '基础外语' (Basic English), '切换课程' (Switch Course), '知识库' (Knowledge Library) (which is selected and highlighted in blue), '课程模型' (Course Model), 'AI应用' (AI Application), '教学运行' (Teaching Operation), and '建设成果展示' (Construction Achievement Display). Below the navigation, key statistics are displayed: '文件数 525 个', '音视频时长 9.8 小时', '解析字符 6883.72k 字符', and '知识切片 1.4 万个 (含公式 18 个、图片 3143 个、表格 1050 个)'. The main content area is a table showing resource management details:

来源	知识库	处理成功/上传资源数量	更新时间
关联	 关联资源	0 / 0	
	 电子教材	3 / 3	2024-11-13 17:35
	 讲义课件	186 / 202	2024-10-29 11:57
	 相关论文	0 / 0	
上传	 习题试卷	16 / 16	2024-10-29 11:54
	 往年作业 (包括评分标准)	0 / 0	
	 相关案例	0 / 0	
	 其他资料	304 / 304	2025-03-02 13:01

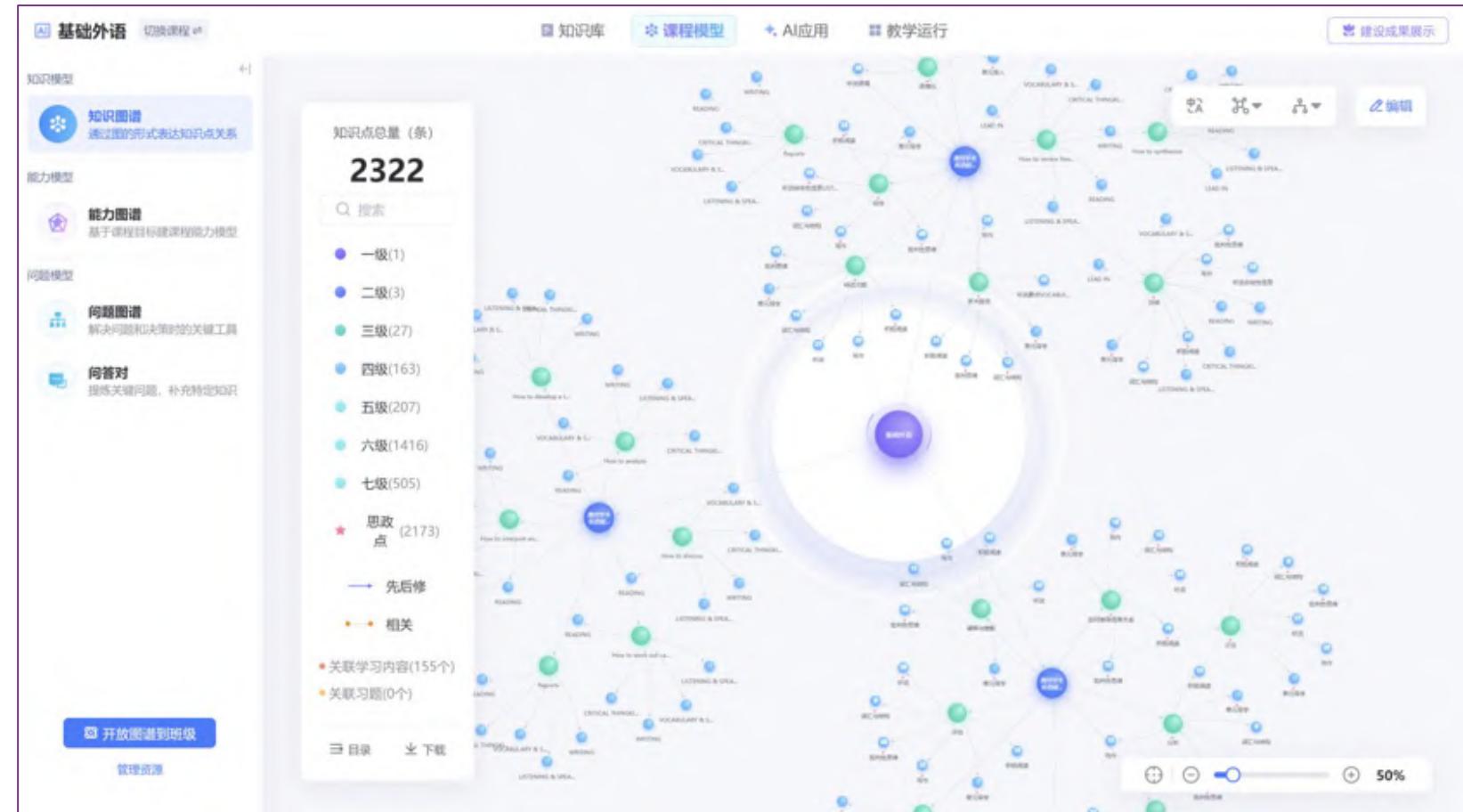
A vertical sidebar on the left contains icons for '教学管理' (Teaching Management), '课程建设' (Course Construction), '我的资源' (My Resources), 'AI工作台' (AI Workbench), and '知识图谱' (Knowledge Graph), with '知识图谱' being the active tab.

# 巧用知识图谱

教学双方巧用知识图谱：

【对于教师】

- 建构并不断优化课程知识图谱

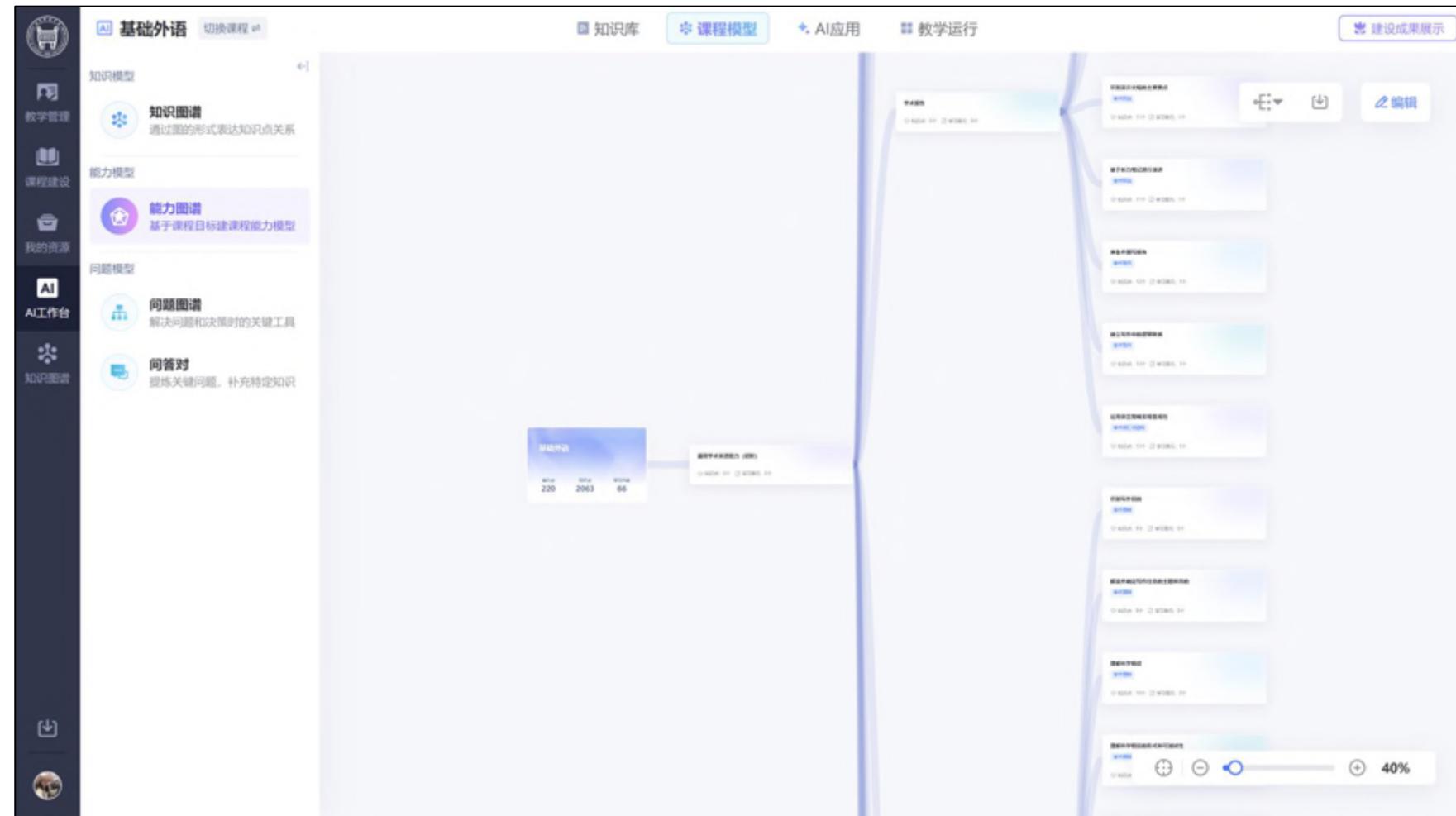


# 巧用知识图谱

**教学双方巧用知识图谱：**

**【对于教师】**

- 建构并优化与知识图谱关联的能力图谱

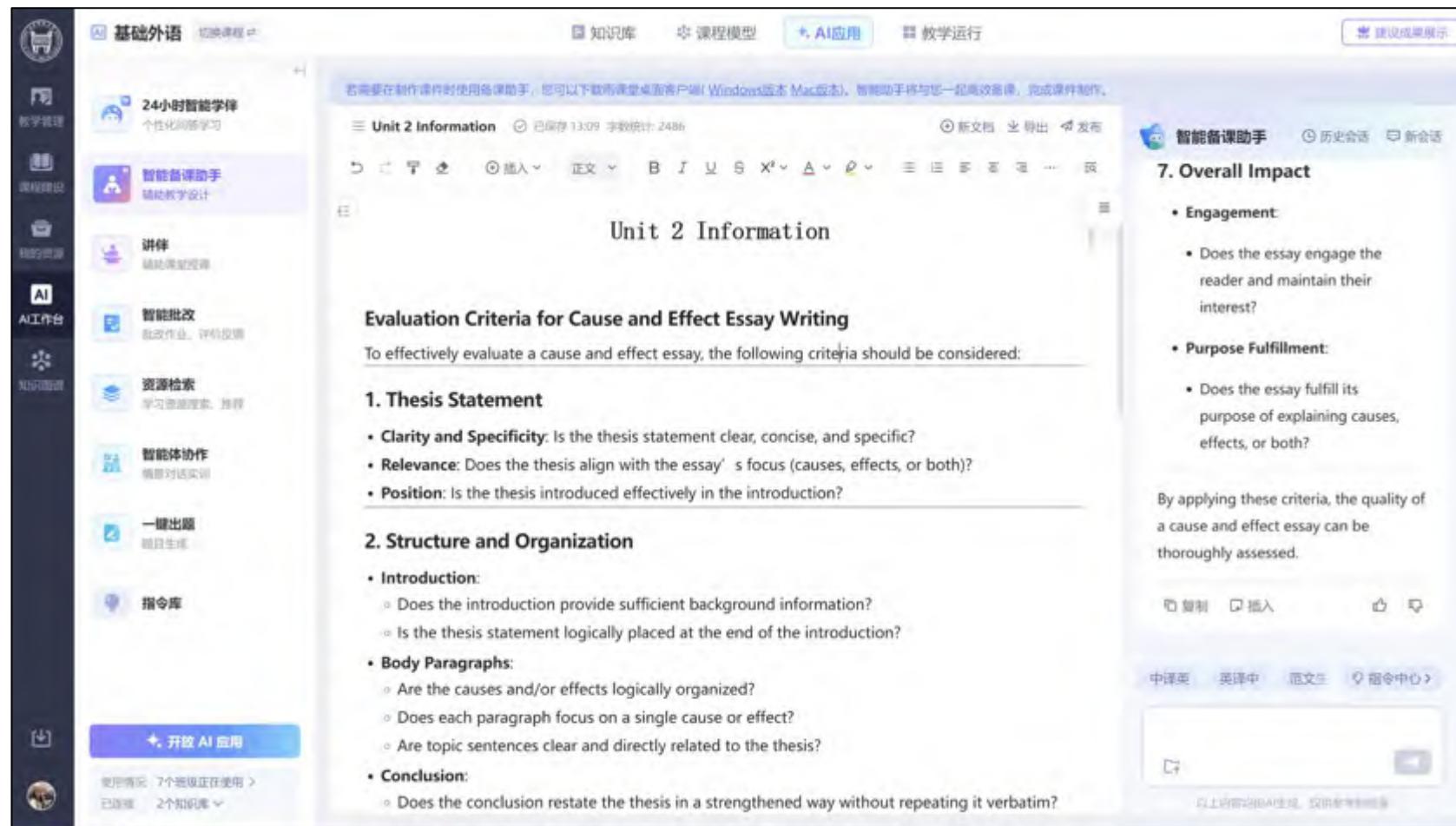


# 巧用知识图谱

**教学双方巧用知识图谱：**

**【对于教师】**

- 赋能备课



The screenshot shows the 'Teacher Preparation Assistant' feature within a teaching application. The sidebar on the left lists various AI tools: 24-hour intelligent teaching companion, intelligent preparation assistant, teaching companion, intelligent grading, resource search, intelligent collaboration, one-click generation, and command library. A blue button at the bottom says 'Open AI Application'. The main area displays 'Unit 2 Information' with a word count of 13,091 and 2486 characters. It includes a toolbar with text, font, and paragraph styles. To the right, there's a section titled 'Overall Impact' with two bullet points: 'Engagement' (does the essay engage the reader) and 'Purpose Fulfillment' (does the essay fulfill its purpose of explaining causes, effects, or both). Below this is a note about applying evaluation criteria to cause and effect essays. At the bottom, there are buttons for 'Copy', 'Paste', and 'Command Center'.

# 巧用知识图谱

**教学双方巧用知识图谱：**

## 【对于教师】

- 讲伴赋能课堂教学沉淀优质教学资源
- 讲伴赋能教师教学反思



The screenshot shows the 'AI Application' tab selected in the top navigation bar. The main content area is divided into two tabs: 'Role Introduction' (角色介绍) and 'Function Introduction' (功能介绍). The 'Role Introduction' tab is active, showing settings for the AI Tutor role. It includes fields for 'Role Usage' (认真细心), 'Output Language' (中文), 'Output Voice' (艾硕), and 'Characteristics' (热情各类专业书籍，非常细心和周到，总是能够从多个角度考虑问题，能够保持积极乐观的态度). Below this, there are sections for 'Answer Style' (回答风格) and 'Pros and Cons' (优缺点). The 'Function Introduction' tab is partially visible at the bottom. On the right side of the interface, there is a large blue cartoon character of a person holding a magnifying glass and a pencil, with a speech bubble saying '我是您的AI讲伴。有问题，随时找我。一起让课堂更精彩!' (I am your AI Tutor. If you have any questions, feel free to find me. Let's make classes more exciting!). Below the character is a button labeled '语音播放' (Play voice).

# 巧用知识图谱

## 教学双方巧用知识图谱：

### 【对于教师】

- 讲伴赋能课堂教学沉淀优质教学资源
- 讲伴赋能教师教学反思



The screenshot displays the Rain Classroom AI Application interface. On the left, a vertical sidebar lists various AI features: 24-hour intelligent companion, Intelligent lesson preparation assistant, **讲伴** (highlighted in light purple), Intelligent grading, Resource search, Intelligent body collaboration, One-click question generation, and Command library. At the bottom of this sidebar is a blue button labeled 'Open AI Application'. Below the sidebar, status indicators show '7 classes in use' and '2 knowledge bases connected'. The main content area has tabs for 'Knowledge Library', 'Lesson Model', 'AI Application' (which is selected and highlighted in light blue), and 'Teaching Operation'. A sub-tab 'Function Introduction' is also selected. The 'Function Introduction' section contains two sections: 'Text-to-speech conversation' and 'Teaching interaction'. In the 'Text-to-speech conversation' section, there are two bullet points: 'I will record your teaching content, mainly in Chinese and English.' and 'You can wake me up with "Hello, teacher" to have a conversation or execute operations like random name selection and pop-ups.' A callout box highlights the 'Murphy's Law' concept: 'Murphy's Law is a humorous observation that usually states: "Anything that can go wrong will go wrong." It reflects a kind of attitude towards life that cannot be avoided, such as accidents and mistakes. Murphy's Law is often used to explain why things don't always go according to plan...' In the 'Teaching interaction' section, there are two bullet points: 'You can set teaching scenarios in the command library, and the class can directly use or send them to students.' and 'You can use the screenshot function in Rain Classroom to take a picture and click [Ask AI] to send it to the conversation, and ask related questions. You can also choose to click [Knowledge Explanation] to get the results.' At the bottom right, a small window shows a video feed of a person speaking, with text indicating they are listening.

# 巧用知识图谱

**教学双方巧用知识图谱：**

## 【对于教师】

- 讲伴赋能课堂教学沉淀优质教学资源
- 讲伴赋能教师教学反思



# 巧用知识图谱

**教学双方巧用知识图谱：**

## 【对于教师】

- 精准分析知识点的掌握情况
- 分析课程目标的达成度





# 巧用知识图谱

教学双方巧用知识图谱：

## 【对于教师】

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- 分析课程目标的达成度



# 巧用知识图谱

**教学双方巧用知识图谱：**

## 【对于学生】

- 以知识图谱为路径进行学习
- AI学习空间赋能个性化学习
- 数据描绘个性化学习路径



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**教学双方巧用知识图谱：**

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- 数据描绘个性化学习路径

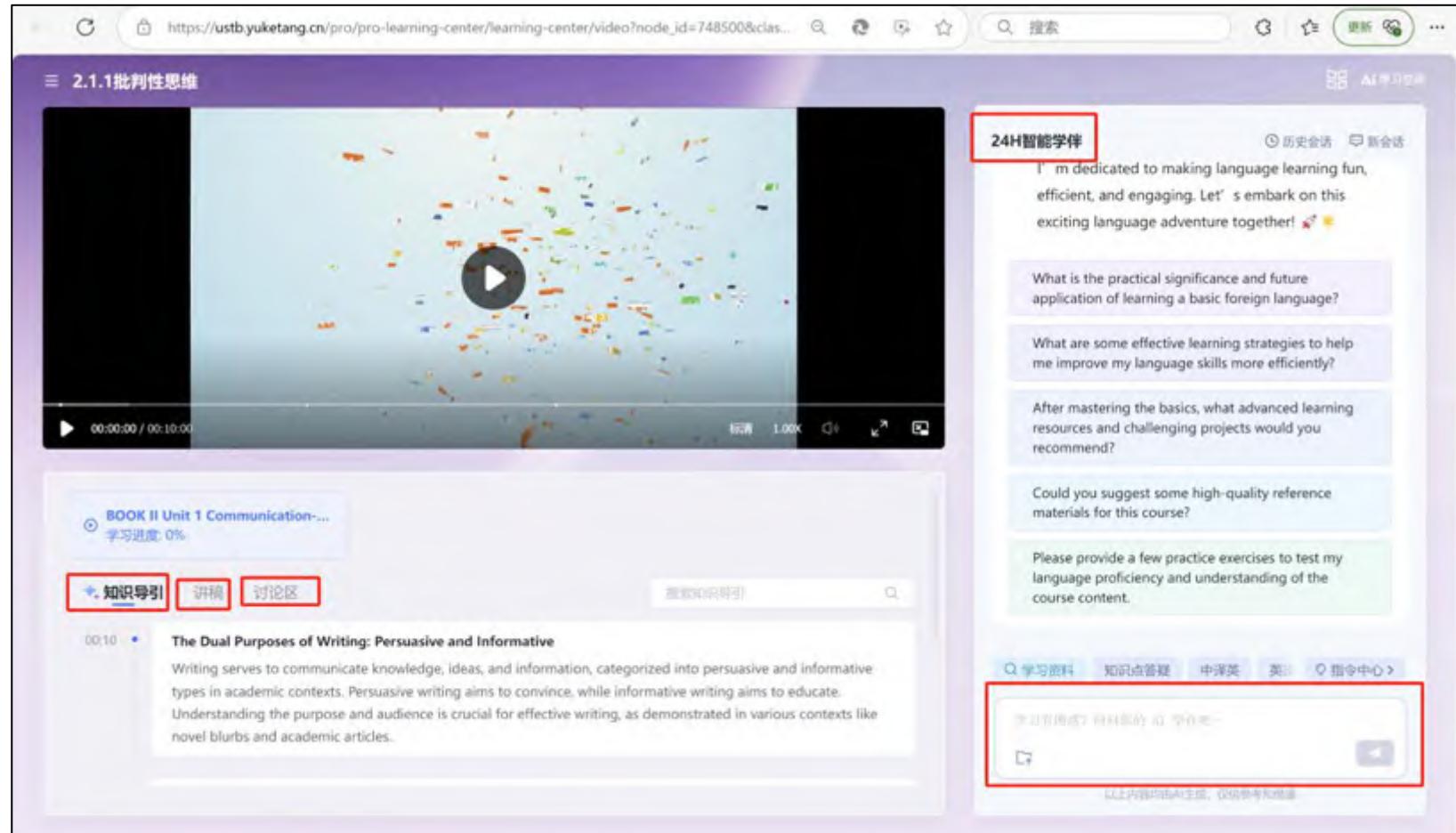


# 巧用知识图谱

教学双方巧用知识图谱：

## 【对于学生】

- 以知识图谱为路径进行学习
- AI学习空间赋能个性化学习
- 数据描绘个性化学习路径



The screenshot displays a web-based learning environment. At the top, there's a navigation bar with a globe icon and the text "建设应用". Below the navigation is a large video player showing a video titled "2.1.1批判性思维" (Critical Thinking). The video player has a play button in the center and a progress bar at the bottom. To the right of the video, there's a sidebar titled "24H智能学伴" (24H Intelligent Learning Companion) which includes a welcome message and several questions about language learning. The main content area below the video player shows a "BOOK II Unit 1 Communication..." section with a progress bar at 0%. There are three buttons labeled "知识导引" (Knowledge Guide), "讲稿" (Lecture Slides), and "讨论区" (Discussion Zone), with "知识导引" being highlighted with a red border. A search bar labeled "搜索知识导引" is also present. The bottom part of the screen contains text about the dual purposes of writing: Persuasive and Informative, followed by a detailed explanation. A red box highlights the "知识导引" button and the "学习资料" (Learning Materials) link in the footer.



# 巧用知识图谱

**教学双方巧用知识图谱：**

## 【对于学生】

- 以知识图谱为路径进行学习
- AI学习空间赋能个性化学习
- 数据描绘个性化学习路径
- 课上不懂及时解决

The screenshot shows a learning platform interface with a knowledge graph overlay. The main title is "Explore cultural relics hidden in Ne Zha 2". Below it, another section titled "Explore cultural relics I" discusses the movie's inspiration from Chinese artifacts. A central image shows two green, frog-like creatures representing the "Boundary Guardian Beasts". Text on the slide explains how the movie has sparked interest in Chinese museum artifacts. The interface includes a sidebar with navigation links and a bottom navigation bar.

**Explore cultural relics hidden in Ne Zha 2**

**Explore cultural relics I**

China's animated hit "Ne Zha 2," while captivating global audiences, has also inspired renewed interest in Chinese museum artifacts among viewers.

In the future, we will further explore the cultural essence of relics and bring them to life through diverse forms.

<https://www.globaltimes.cn/page/202502/1328907.shtml>

This slide is about exploring cultural relics that inspired elements in the animated movie Ne Zha 2. It highlights how the film has sparked global interest in Chinese cultural artifacts and museum collections. Here's a breakdown of the key points:

**Title: Explore cultural relics hidden in Ne Zha 2**

The slide discusses how the movie incorporates elements

Q 学习资料 知识点答疑 中译英 英译中 留言中心 >

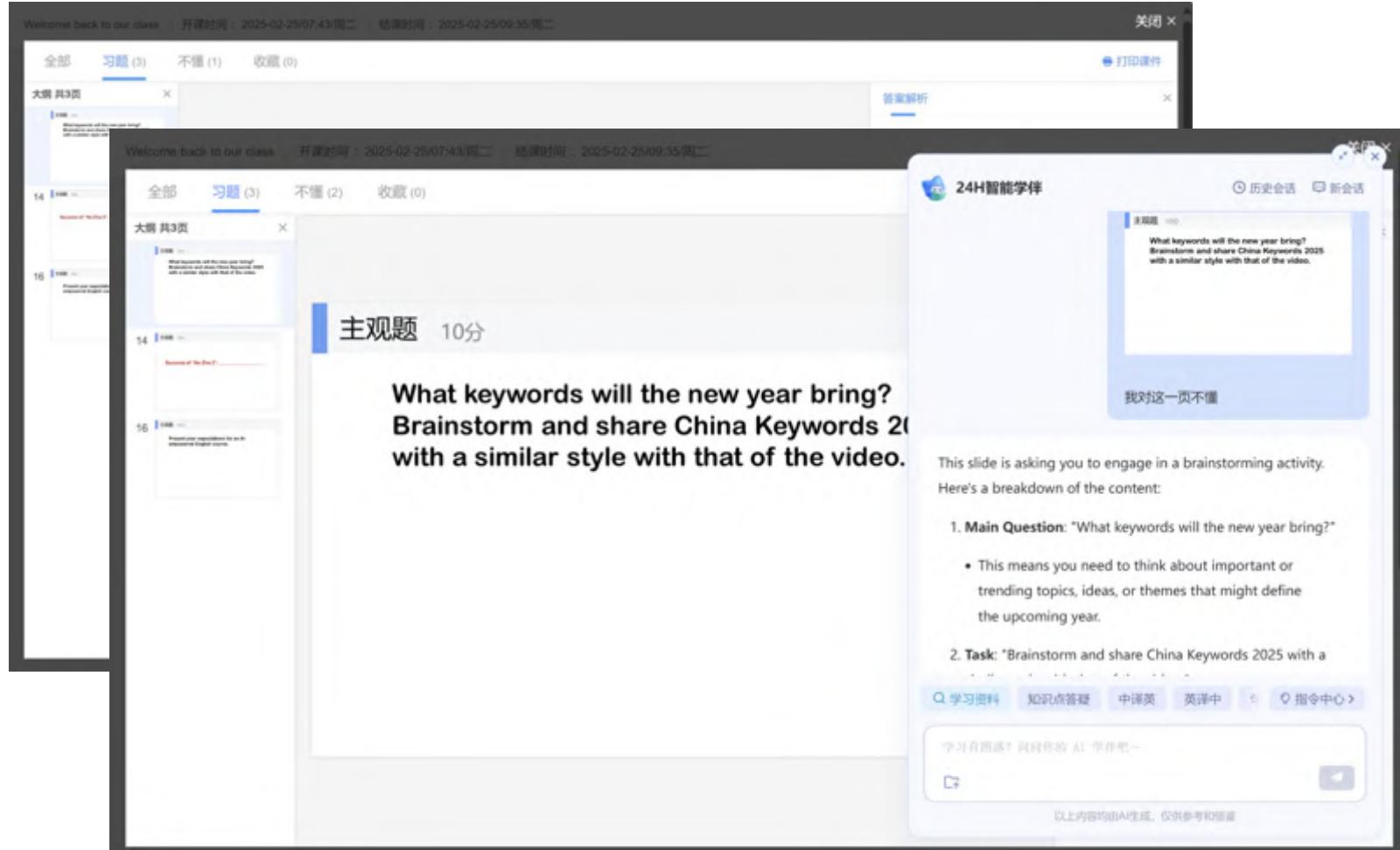
45

# 巧用知识图谱

**教学双方巧用知识图谱：**

## 【对于学生】

- 以知识图谱为路径进行学习
- AI学习空间赋能个性化学习
- 数据描绘个性化学习路径
- 课上不懂及时解决



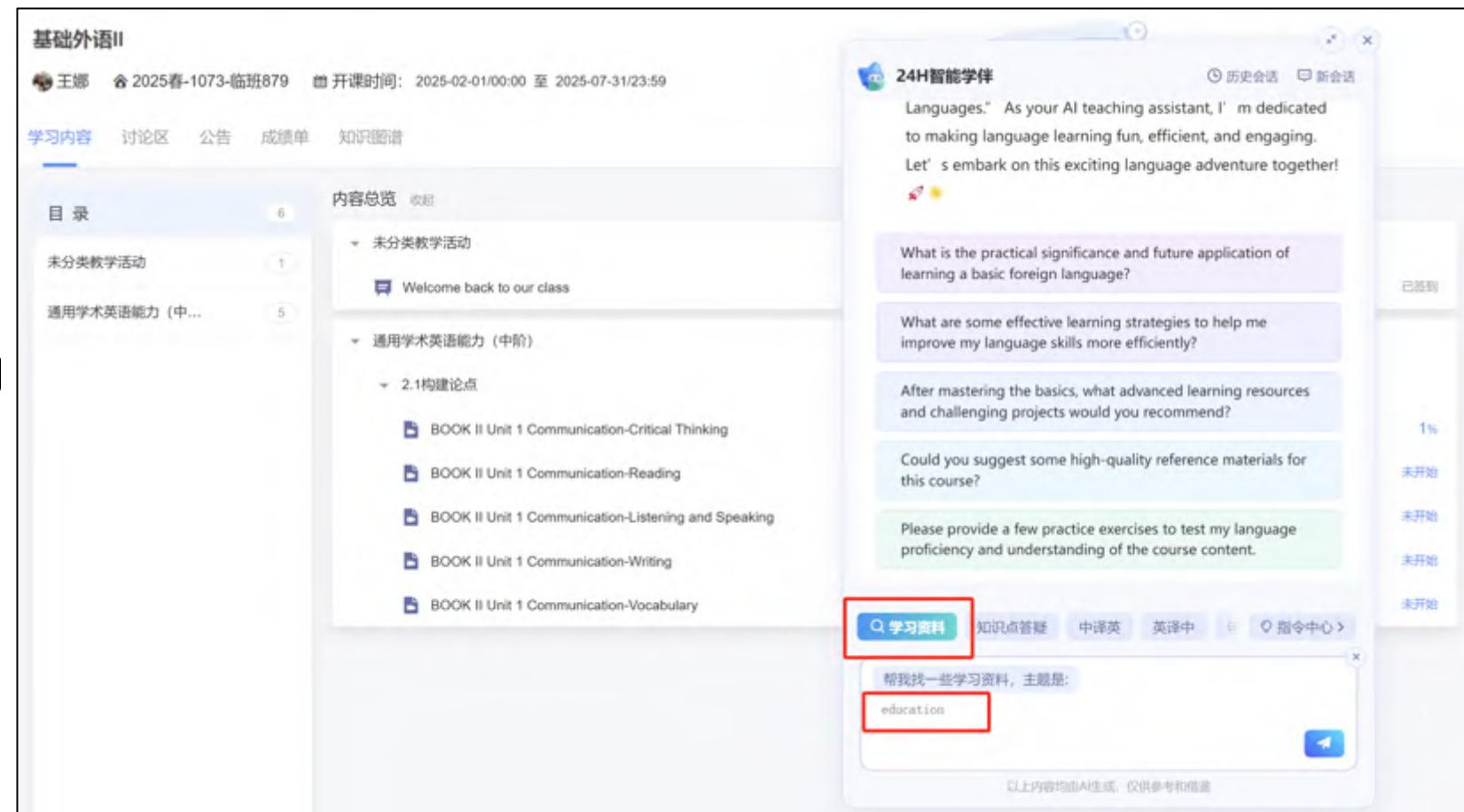
The screenshot displays a multi-layered learning interface. The top layer shows a 'knowledge graph' with nodes and connections. Below it is a 'subjective question' section titled '主观题 10分' (Subjective Question 10 points) with the task: 'What keywords will the new year bring? Brainstorm and share China Keywords 2025 with a similar style with that of the video.' To the right, there's an AI-powered study space titled '24H智能学伴' (24H Intelligent Study Companion) which includes a '历史会话' (History Chat) and a '新会话' (New Chat) feature. A message bubble says '我对这一页不懂' (I don't understand this page). At the bottom, there's a search bar and a feedback section asking '学习有困惑? 问我你的AI学习吧~' (Have learning困惑? Ask me your AI learning~).

# 巧用知识图谱

## 教学双方巧用知识图谱：

### 【对于学生】

- 以知识图谱为路径进行学习
- AI学习空间赋能个性化学习
- 数据描绘个性化学习路径
- 课上不懂及时解决



The screenshot displays a learning management system interface. At the top, it shows course information: "基础外语II", "王娜", "2025春-1073-临班879", and "开课时间: 2025-02-01/00:00 至 2025-07-31/23:59". Below this is a navigation bar with tabs: "学习内容" (selected), "讨论区", "公告", "成绩单", and "知识图谱". The main content area is titled "目录" and lists "未分类教学活动" (6 items) and "通用学术英语能力 (中阶)" (5 items). A detailed view of the "通用学术英语能力 (中阶)" section is shown, with sub-sections like "2.1构建论点" and five corresponding activities: "BOOK II Unit 1 Communication-Critical Thinking", "BOOK II Unit 1 Communication-Reading", "BOOK II Unit 1 Communication-Listening and Speaking", "BOOK II Unit 1 Communication-Writing", and "BOOK II Unit 1 Communication-Vocabulary". To the right, there is a sidebar titled "24H智能学伴" which includes a welcome message and several AI-generated questions about language learning. At the bottom, a search bar is highlighted with a red box, containing the text "帮我找一些学习资料, 主题是: education".

# 巧用知识图谱

## 巧用知识图谱

### 知识图谱资源关联：

- 将教材进行切片处理，关联至具体知识点上，实现资源集成一体化，方便学生一站式自主学习；

### 思政点建设：

- 将思政元素与相关知识点建立紧密联系，展现思政教育与语言学习之间的相互促进关系。

### 建设双语知识图谱：

- 基于课程特点，专门建设中英双语知识图谱，支持学生在掌握学科知识的同时，提升双语应用能力。



• 关联学习内容(155个) → 持续关联中.....

# 应用场景多元

教育部司局函件

(三) 语言学习陪练: 通过AI技术辅助语言学习, 提供

教育部司局函件

(二) 智能助学: 如语言陪练、编程助手、智能学伴等, 利用AI技术为学生提供实时互动的伴随式学习支持, 激发

- 智能助教
- 语言学习陪练
- 教学质量管理
- 虚拟教室、虚拟实验室
- 智能决策支持
- 智能备课系统
- 编程教学助手
- 学习分析预警
- 智慧课堂管理

## 标准日益清晰, 更成体系

### 智能助教

教研备课、辅导答疑、学习分析, 优化教学方法...

### 智能助学

语言陪练、编程助手、智能学伴等, 激发学习热情

### 智能助管

教学质量管理决策支持, 师生数据, 优化资源配置

### 智能助研

文献分析、科研数据处理、实验设计优化, 智能高效

### 创新场景

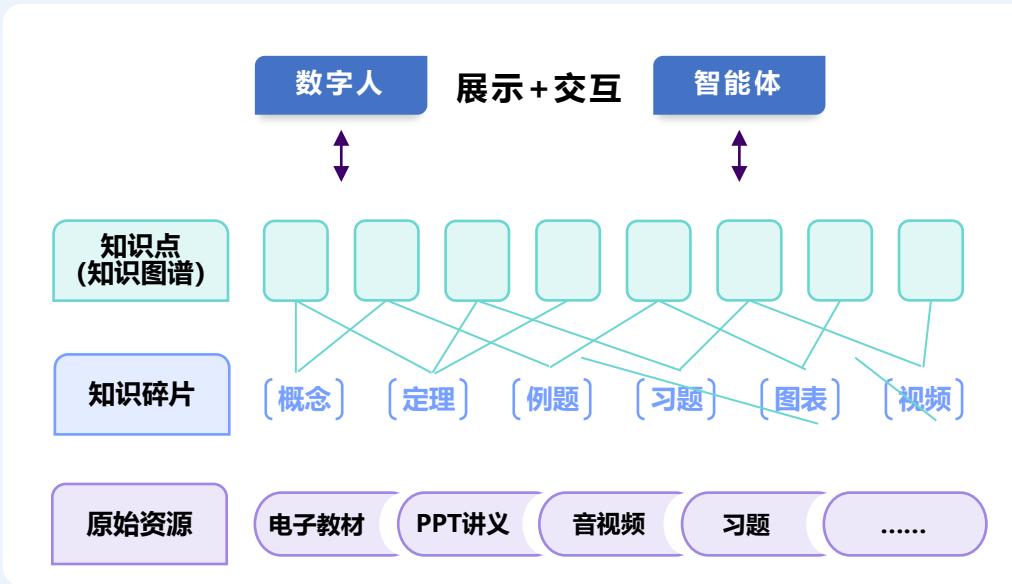
其他利用人工智能技术赋能高校教育教学场景

# 赋能教学应用

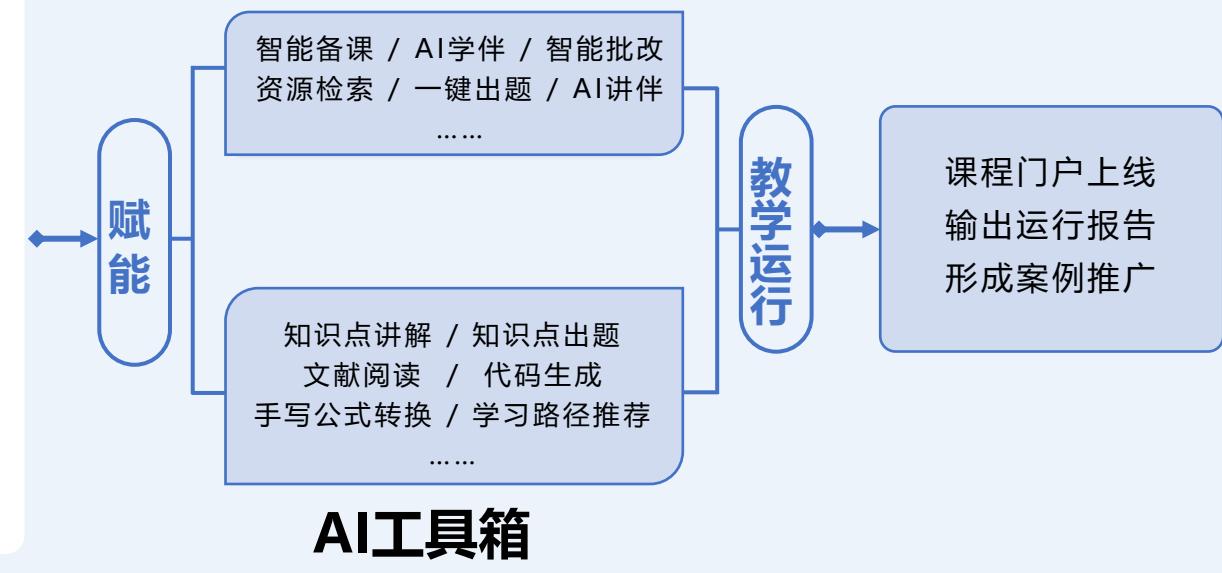
教学资源碎片化 + 教学过程AI化

碎片学习→精准学习

## AI课程垂直引擎



## AI教学应用



# 赋能教学应用



智能备课助手

可自动生成范文、教案

The screenshot illustrates the process of generating teaching materials. On the left, the 'Intelligent Lesson Preparation Assistant' interface shows a user inputting a topic: '...Literature Review on Educational Themes...'. The generated output on the right is a 'Preparation Material' titled 'Literature Review on Educational Themes'. This document includes an 'Introduction' section describing the purpose and scope of a literature review in education, mentioning constructivism, mobile learning, and lifelong education. Below this is a 'Constructivism in Education' section, which discusses the theory's emphasis on active learner construction of knowledge through experience and interaction, its application in various disciplines, and the challenges of implementation.

智能备课助手

针对以下主题，生成一篇范文。

主题：...Literature Review on Educational Themes...

Literature Review on Educational Themes

Introduction

A literature review is a critical component of academic research, providing a comprehensive overview of existing studies on a particular topic. In the field of education, literature reviews serve to contextualize research, identify gaps, and establish the significance of new inquiries. This essay explores key educational themes, including constructivism, mobile learning, and lifelong education, synthesizing relevant studies to highlight prevailing trends, challenges, and opportunities.

预习材料

范文：|

**Literature Review on Educational Themes**

**Introduction**

A literature review is a critical component of academic research, providing a comprehensive overview of existing studies on a particular topic. In the field of education, literature reviews serve to contextualize research, identify gaps, and establish the significance of new inquiries. This essay explores key educational themes, including constructivism, mobile learning, and lifelong education, synthesizing relevant studies to highlight prevailing trends, challenges, and opportunities.

**Constructivism in Education**

Constructivism, a prominent learning theory, emphasizes the active role of learners in constructing knowledge through experience and interaction. According to Savery and Duffy (1995), constructivist pedagogy fosters cognitive conflict, encouraging students to question assumptions and develop critical thinking skills. This approach has been widely applied in disciplines such as literature, where interpretation and analysis are central, as well as in science and mathematics, where problem-solving is key.

However, challenges remain in implementing constructivist methods effectively. For instance, teachers often struggle to balance guidance with student autonomy, particularly in large classrooms.

*Additionally, critics argue that constructivism may not suit all learners, especially those who require*

# 赋能教学应用



## 主观题批改，减轻教师负担提升教学效率

**智能批改**

**写作全文批改** [编辑规则](#) [共享到当前 AI 课](#)

**+ 写作全文批改** [新建批改规则](#)

	评价项目	详细指标	权重 (25)
<b>学术论文写...</b>	1.1 文章包含明确的目标与要求	1	
	1.2 文章逻辑清晰，按照一定的顺序组织材料内容	1	
	1.3 文章中包含完整的背景介绍，给出本次讨论的背景信息	1	
<b>逻辑严谨 (10)</b>	2.1 文章有清晰的中心思想，各个章节之间逻辑连贯，过渡自然	5	
	2.2 文章分析论点具备充分且合理的论据支撑	5	
	3.1 文章从不同的层面，不同角度探讨当前主题	5	
<b>内容丰富 (12)</b>	3.2 文章展示了表面现象，探究了背后的深层原因、影响及潜在解决方案	5	
	3.3 文章对未来进行了展望	2	

点评开关:  生成评语  生成批注

**批改测试→**

**智能批改**

**学术论文写作批改** [编辑规则](#) [共享到当前 AI 课](#)

**+ 新建批改规则**

	评价项目	详细指标	权重 (50)
<b>学术论文写...</b>	1.1 论文摘要概括地反映出本论文的主要内容	1	
	1.2 论文摘要说明了本论文的主要研究目的、内容、方法、成果和结论	2	
	1.3 论文摘要最后包含本文的关键词 (3~5个) 关键词符合全文主题内容信息的单词或术语	2	
<b>引言及文献综述 (15)</b>	2.1 论文引言部分应分析选题的背景和意义，展示选题的重要性	5	
	2.2 论文引言部分应对国内外相关研究成果与进展进行述评，揭示本论文所要解决的科学与技术问题	5	
	2.3 论文引言部分应当阐述所运用的主要理论和方法、基本思路和论文结构等	5	
<b>论文主体 (15)</b>	3.1 从不同的层面，不同角度探讨当前主题	5	
	3.2 将学习、研究和调查过程中筛选、观察和测试所获得的材料，经过加工整理和分析研究，形成论点	5	

**批改测试→**

# 赋能教学应用



## 智能批改

主观题批改，减轻教师负担提升教学效率

基础外语II > 2025春-1074-临班881

主观题1 批改率: 31/33

未打分(2) ▾

搜索.....



学号 ▾ 作答时间 ▾



赵天磊

U202480026

03-17/22:39 周一



马晗瑞

U202480010

03-16/23:05 周日

03-17/22:39 周一

批改完成 成功 31 失败 0 ×

+ 智能批改

Social media platforms have played a positive role in promoting global information dissemination and cultural exchange. However, their algorithm-driven content recommendation systems have also led to information bubbles and echo chambers, thereby exacerbating social division and polarization. In today's digital age, social media has become an indispensable part of people's daily lives. Whether it is sharing personal life moments or obtaining global news and information, social media platforms play a crucial role. However, as these platforms become more widespread and their influence grows, their impact on society has become increasingly complex. Although social media has played a positive role in promoting global information dissemination and cultural exchange, its algorithm-driven content recommendation systems have also led to information bubbles and echo chambers, thereby exacerbating social division and polarization. This article will explore these dual impacts of social media and analyze their profound influence on modern society.

+ 智能批改



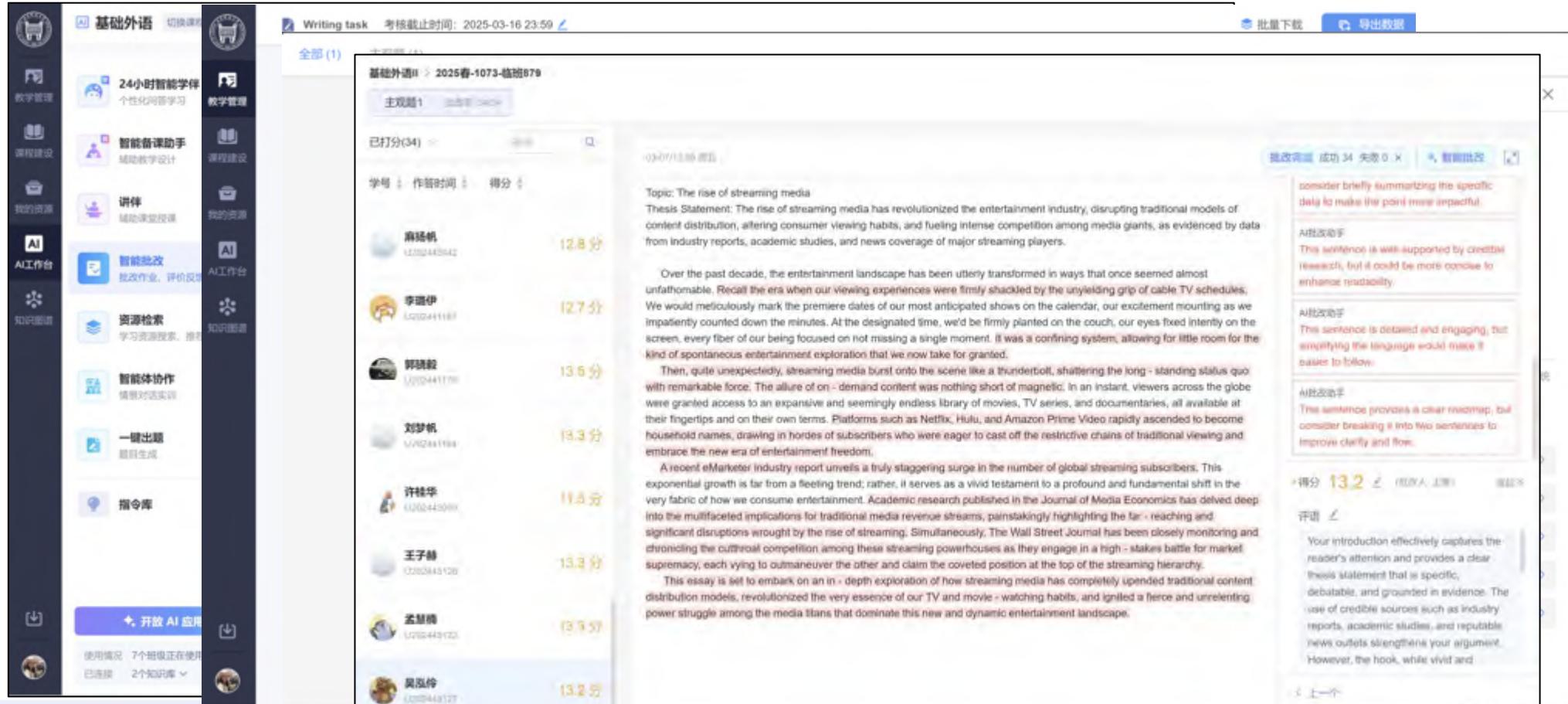
正在上传作答内容...

# 赋能教学应用



## 智能批改

主观题批改，减轻教师负担提升教学效率



The screenshot shows a user interface for a writing task titled "Writing task" with a deadline of 2025-03-16 23:59. The interface includes a sidebar with various AI tools like "24-hour intelligent learning companion", "Intelligent teaching assistant", "Smart teaching design", "Teaching management", "Course construction", "My resources", "AI workbench", and "Knowledge graph". The main area displays a list of students' essays, each with a score and a detailed AI批改 (grading) report.

学生	作答时间	得分	AI批改反馈
麻强帆	2024-03-16 23:59:42	12.8 分	consider briefly summarizing the specific data to make the point more impactful.
李雅伊	2024-03-16 23:59:43	12.7 分	This sentence is well-supported by credible research, but it could be more concise to enhance readability.
郭婧毅	2024-03-16 23:59:44	13.6 分	This sentence is detailed and engaging; rephrasing the language would make it easier to follow.
刘梦帆	2024-03-16 23:59:45	13.3 分	This sentence provides a clear roadmap; consider breaking it into two sentences to improve clarity and flow.
许桂华	2024-03-16 23:59:46	11.6 分	
王子赫	2024-03-16 23:59:47	13.2 分	
孟慧楠	2024-03-16 23:59:48	13.3 分	
吴泓伶	2024-03-16 23:59:49	13.2 分	

# 赋能教学应用



## AI讲伴

辅助老师讲课、答疑、总结

- **自动录音**: 开启之后会启动录音（可手动关闭）
- **AI对话**: 支持语音对话+语音播报
- **截图问答**: 截图PPT内容，展开知识讲解或对话
- **课堂总结**: 根据语音输入的内容生成思维导图

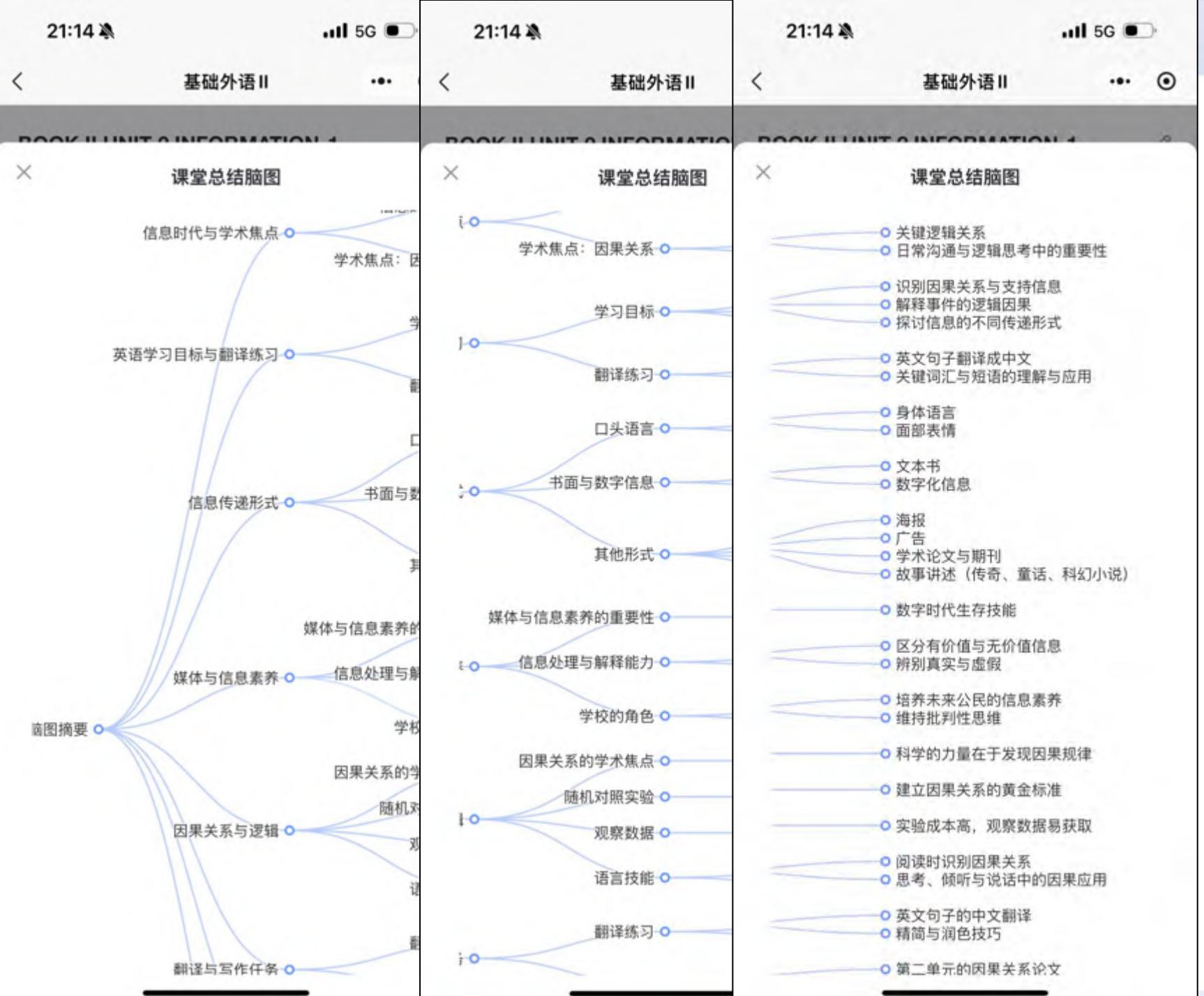


# 赋能教学应用

## AI讲伴

辅助老师讲课

- 自动录音:** 开启自动录音功能，方便老师随时录制课堂内容。
- AI对话:** 支持与AI进行对话，获取即时反馈和建议。
- 截图问答:** 截取课堂上的重要瞬间，通过AI识别并回答问题。
- 课堂总结:** 根据课堂内容生成思维导图，帮助学生回顾和理解。



# 赋能教学应用



## AI讲伴

辅助老师讲课、

- **自动录音：**开启自动录音功能，方便课后回听。
- **AI对话：**支持语音输入，进行智能对话。
- **截图问答：**截取课堂图片，进行即时问答。
- **课堂总结：**根据课堂内容生成思维导图。



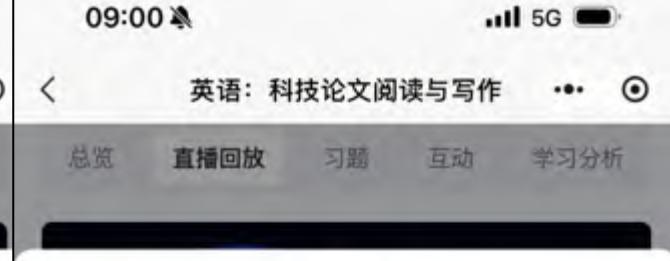
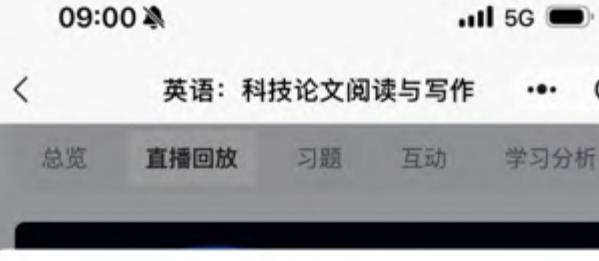
# 赋能教学应用



## AI讲伴

辅助老师讲

- **自动录音:**
- **AI对话:** 支
- **截图问答:**
- **课堂总结:**



- 谨慎语言 (Cautious Language)
- 对象性 (Objectivity)
- 责任性 (Responsibility)
- 准确性和精确性 (Accuracy & Precision)
- 名词化 (Nominalization)
- IMRD 结构
- 其他关键部分
  - 作者顺序: 第一作者与通讯作者的重要性
  - 单位归属: 显示作者所属机构
  - 检索功能: 标题、摘要、关键词帮助文章被找到
  - 下载量与引用量: 衡量文章价值与影响力
- 正确引用他人工作, 使用自己的话转述
- 引用格式: 文内引用与文后参考文献
- 提供证据支持声明, 理解并引用来源文本
- 使用转述、总结或综合信息
- 使用精确数据, 避免模糊描述
- 确保研究可复制性, 以验证知识的可靠性
- 分析30篇文献, 识别名词化现象
- 准备PPT演示, 概括文献结构
- 作业提交方式: 通过AI课程网站讨论区或作业提交

# 赋能教学应用



## AI讲伴

辅助老师讲课、答疑

- **自动录音：**开启之后
- **AI对话：**支持语音对
- **截图问答：**截图PPT
- **课堂总结：**根据语音

09:11 5G

英语：科技论文阅读与写作

Lec 1 Features of Academic writing (3)

2025-03-20/周四/07:55 2025春-1001-纳米实验班23

总览 直播回放 习题 互动 学习分析

授课统计 课堂回顾 知识导引 讲稿

03 Hedging & Responsibility

P77 | 08:00 放映1分55秒

OK, hedging, and responsibility I said that they are closely related, right? So keep this in your mind, hadden can help us take appropriate responsibility for what we are claiming. And festi val hedging. Scientific writing is factual. Do you understand factual? It's about facts, right? yeah. And even though IT is about your idea, but your idea is based on factory, based on a variety of evidence, including data and other types of evidence, simply to can be facts and information.

## 未来建设重点

### 1、加强课程垂直引擎建设（“五个一”）

- ① 课程资源精细化处理，优化检索增强生成效果；
- ② 实现资源智能推送、一站式构建学习闭环，提升伴学效果；

### 2、课程特色智能体设计

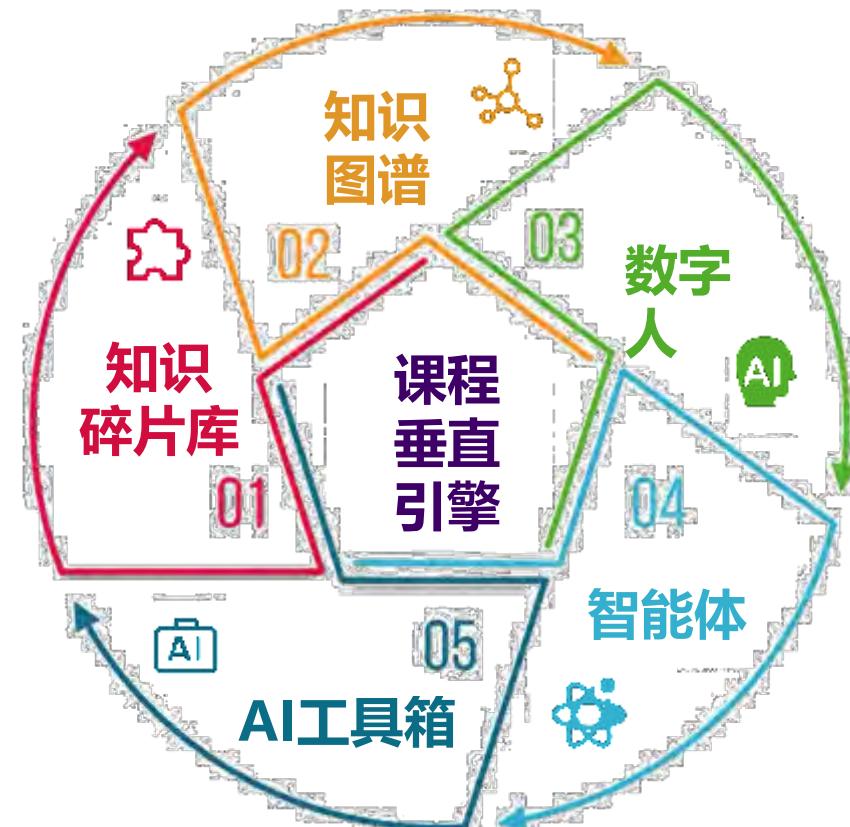
- 口语陪练、写作助手、外国友人.....

### 3、加强AI融合课程设计

- ① 创设条件，培养学生高阶思维能力
- ② 减负增效，助力多元化合作评价

教学资源碎片化 + 教学过程AI化

碎片学习→精准学习





北京科技大学

UNIVERSITY OF SCIENCE AND TECHNOLOGY BEIJING

# THANKS!

北京科技大学外国语学院 王娜

2025年6月26日