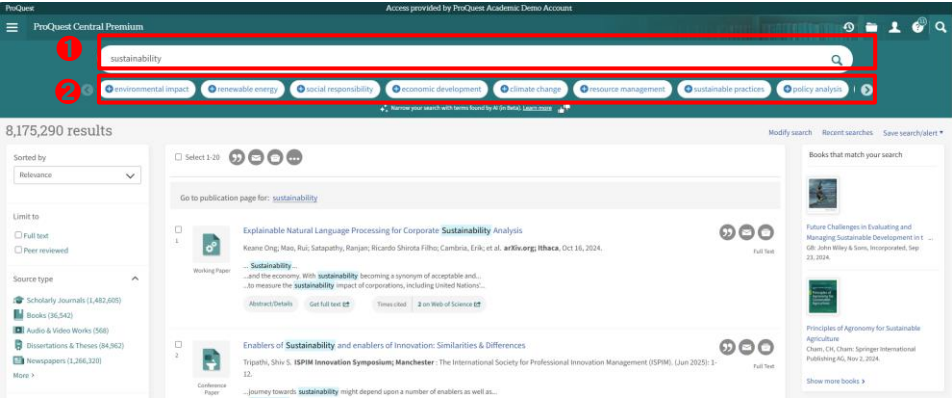


ProQuest Research Assistant 作为 ProQuest 平台的 AI 增强模块，该功能并非独立产品，而是深度嵌入其核心数据库的智能辅助系统，实现从检索到分析的一站式支持。旨在帮助学生与研究人员更高效地检索、理解与评估文献。该功能已集成于 ProQuest Central、Ebook Central 及 Dissertations & Theses Global (PQDT Global) 等平台，可自动生成主题词、提炼论文关键点、解析研究概念，并支持自然语言检索，显著提升学术文献处理效率。

Apr, 2026

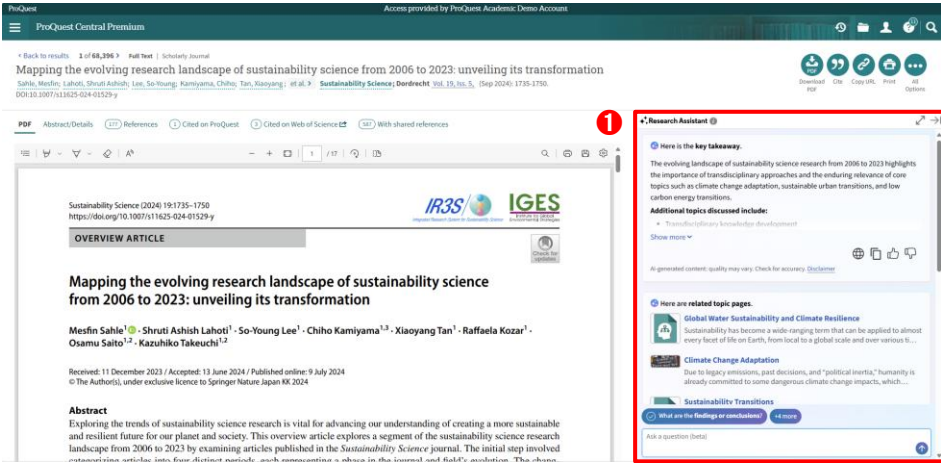
增强检索



1 检索框
 输入检索词

2 关键词拓展
 系统会基于数据库及搜索关键词，推荐同义词与相关术语；点击这些词汇即可将其输入检索框。

增强文档浏览支持功能



1 摘要生成
 当您打开文档时，研究助手提供的文档理解支持功能将显示在右侧。

增强文档浏览

【1】 重点内容

1 Here is the **key takeaway**.




Continuing professional learning (CPL) is essential to equip teachers with the technical and pedagogical skills needed for effective digital education, addressing persistent gaps in their digital competency despite significant progress in digital transformation across education systems.

Additional topics discussed include:

- Certification and accreditation mechanisms for teachers' digital skills
- Barriers and incentives affecting teachers' participation in digital CPL
- The role of digital competency frameworks in guiding teacher development

Relationship to your search terms:

The document is related to the environment query as it discusses digital learning environments and teachers' capacity to adapt pedagogical approaches within these increasingly digital educational settings.

2   

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3

以下是**关键点**。




持续的专业学习 (CPL) 对于为教师提供有效数字教育所需的技术和教学技能至关重要, 尽管教育系统在数字转型方面取得了显著进展, 但教师的数字能力仍存在持续的差距。

讨论的其他主题包括:

- 教师数字技能的认证和认证机制
- 影响教师参与数字CPL的障碍和激励措施
- 中央层面战略和政策框架在支持数字教育中的作用

与您的搜索词的关系:

该文档与环境查询相关, 因为它讨论了数字学习环境以及教师在这些日益数字化的教育环境中适应教学方法的能力。

1 要点
 简单概括文档概要

2 翻译功能
 点击地球图标实现翻译功能

3 翻译概要
 可将英文概要翻译为其他语种

【2】 相关主题

4 Here are **related topic pages**.

5 **Global Water Sustainability and Climate Resilience**

Sustainability has become a wide-ranging term that can be applied to almost every facet of life on Earth, from local to a global scale...

Climate Change Adaptation

Due to legacy emissions, past decisions, and "political inertia," humanity is already committed to some dangerous climate chan...

Sustainability Transitions

Sustainability transitions are processes of long-term structural change towards more sustainable societal systems. They include...

4 相关主题页面
 和目前文档主题相关的其他文档

5 相关主题页面
 选择相关文献

このページ: [Scholarly Journals](#) [Top Publications](#) [News](#) [Reports](#) [Subjects](#) [Authors](#) [Writing On This Topic](#) [Results Timeline](#)

Sustainability has become a wide-ranging term that can be applied to almost every facet of life on Earth, from local to a global scale and over various time periods. There are certain conceptual foundations that have been developed to aid in understanding sustainability. The importance of the 1987 Brundtland Commission definition is recognized "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs," which relies on maintaining equity between generations to help define terms. Beyond this, however, systems analytic concepts are embraced to sharpen the definition. [...]

Sustainability...
 さらに表示

Search this topic...

6 相关主题页面
 您可查看选定主题的摘要信息、相关文献、出版物、主题内学科分类、作者及过去十年的文献数量统计。

SCHOLARLY JOURNAL ARTICLES

- Life Cycle Sustainability Assessment of Greywater Treatment and Rainwater Harvesting for Decentralized Water Reuse in Brazil and Germany
 Souza Hugo Henrique de Simone; Morandi, Carlo Gottardo; Boncz Marc Arpad; Paulo Paula Loureiro; Steinmetz Heidrun. **Resources**; Basel 卷 14, 号 6, (2025): 96.
- Financing diversified water strategies for megacities: the case of Mexico City and rainwater harvesting
 Mariana Portal Carús; Pallán, Hémero. **Environmental Research Letters**; Bristol 卷 19, 号 11, (Nov 2024): 114052.
- A Call to Action: Building a sustainable, efficient, and climateresilient aerifood system in Iraq

TOP PUBLICATIONS FOR THIS TOPIC

- Asia News Monitor
5 見つかった記事
- MENA Report
4 見つかった記事
- Sustainability
4 見つかった記事
- Targeted News Service

[3] 推荐文档

Explore suggested sources. 7

Energy Poverty and Low Carbon Just Energy Transition: Comparative Study in Lithuania and Greece
 Streimikiene, Dalia; et al. Social indicators research. (01 Jan 2021)

A Scientometric Analysis of Climate Change Research in Kosovo
 Caka, Fjollë; et al. The International Journal of Climate Change: Impacts and Responses. (01 Jan 2022)

Pathway to Prosperity? The Impact of Low-Carbon Energy Transition on China's Common Prosperity
 Liu, Yang; et al. Energy Economics. (August 2023)

Pathway to prosperity? The impact of low-carbon energy transition on China's common prosperity
 Liu, Yang; et al. Energy Economics. (2023)

View all

7 推荐资源
 推荐其他相关文献

Here are the indexing terms applied to this document. 8

Subject

- Sustainability transitions
- Transformations (mathematics)
- Technological change
- Sustainability science
- Science
- Sustainability
- Planetary evolution
- Natural language processing
- Climate adaptation

Search using selected terms

8 索引
 相关主题标引的主题词

【4】 文档结论

What are the findings or conclusions?

Here are the findings or conclusions.

The document provides a comprehensive overview of the evolution of sustainability science research from 2006 to 2023, primarily through an analysis of articles published in the *Sustainability Science* journal. Its purpose is to map the changing landscape of sustainability science, highlighting how research topics have shifted over time in response to global challenges and societal needs.

The main findings of the document can be summarized as follows:

- 1. Evolution of Research Focus:** The study identifies four distinct periods in sustainability science research:
 - 2006–2010:** Emphasis on human-environment links and foundational principles.
 - 2011–2015:** Shift towards practical solutions, including climate adaptation and disaster risk reduction.
 - 2016–2020:** Focus on integrating transdisciplinary knowledge and addressing the Sustainable Development Goals (SDGs).
 - 2021–2023:** Concentration on transformative changes, deep sustainability transformations, and the bioeconomy. ① ② ③
- 2. Interconnectedness of Topics:** The analysis reveals how research topics are interconnected, with significant overlaps between periods. For instance, climate change assessment evolved into climate change adaptation, indicating a shift from understanding issues to implementing solutions. ④ ⑤
- 3. Emerging Themes:** Recent years have seen the emergence of new research areas such as low carbon energy transitions and intergenerational

What are the findings or conclusions? +4 more

⑨ 发现和结论
 点击即可查看文档中的分析结论、研究成果或实验数据。

Quote from document

as sustainability science (SustSci hereafter), which aims to tackle the challenges associated with meeting the needs of both current and future generations (Clark 2007; Kajikawa et al. 2007; Kates et al. 2011; Schoolman et al. 2012; Sala et al. 2019). SustSci has evolved from focusing on the natural sciences to a collaborative field incorporating various disciplines (Mooney et al. 2013). It has become a science of transition and innovation, working towards a sustainable society and gaining acceptance from research communities

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⑩ 显示文献相关章节
 点击数字编号，即可显示其依据的原始文本内容。

【5】 相关检索主题

Here are related **research topics** 11

1. **Advancing sustainable science research:** This topic emphasizes the continuous need to enhance knowledge and practices in sustainability science, ensuring that research remains relevant and impactful.
2. **Transdisciplinary knowledge development:** This topic highlights the importance of integrating diverse disciplines to address complex sustainability challenges effectively.
3. **Sustainability education and competency:** This topic focuses on the essential role of education in promoting sustainable practices and building competencies among individuals and communities.
4. **Low carbon energy transitions:** This topic addresses the shift towards low carbon energy sources, which is critical for mitigating climate change and promoting sustainable development.
5. **Sustainable bioeconomy transitions:** This topic explores the transformation towards a bioeconomy that prioritizes sustainability, resource efficiency, and ecological balance.

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11 相关检索主题
 帮助您将兴趣拓展至新的研究领域。


【6】 重点概念

Here are the **important concepts**. 12

1. **Sustainability Science:** Sustainability Science is a multidisciplinary field that focuses on the interactions between human and natural systems, aiming to address sustainability challenges. Its significance in the document lies in its evolution from foundational principles to current priorities, highlighting the importance of transdisciplinary approaches and the integration of diverse knowledge to tackle global sustainability issues.
2. **Sustainable Development Goals (SDGs):** The Sustainable Development Goals are a universal framework established to guide global efforts towards sustainable development by 2030. Their significance in the document is underscored by their role in catalyzing research and shaping the agenda of sustainability science over the years.
3. **Climate Change:** Climate change refers to long-term alterations in temperature and typical weather patterns in a place, significantly impacting ecosystems and human societies. Its ongoing relevance in the document is emphasized through various research topics addressing climate change assessment, adaptation, and mitigation strategies.

12 重点概念
 显示当前文档语境下的核心概念解析

【7】重点细节

 Here are the essential details. 13

Main Point
 The article examines the evolution of sustainability science research from 2006 to 2023, highlighting shifts in research topics and methodologies (1) (2)




Purpose/Hypothesis
 The purpose is to provide insights into the changing landscape of sustainability science and its implications for future research (1) (3)

Study Design/Methods
 The study utilized natural language processing, non-negative matrix factorization topic modeling, and Jaccard similarity analysis to categorize and analyze 1159 articles published in the Sustainability Science journal (1) (4)

Results/Outcomes
 The findings indicate a progression from foundational principles to current priorities such as transdisciplinary approaches, deep sustainability transformations, and the integration of the Sustainable Development Goals (SDGs) (5) (6)


Implications
 The study suggests that sustainability science must adapt to emerging global challenges and emphasizes the importance of interdisciplinary collaboration (1) (7)

Study Limitations
 The study acknowledges that while significant progress has been made, there are still knowledge gaps and areas requiring further exploration (7)

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13 重点细节
 基于文档结构显示摘要。在本例中，展示了学术论文的结构。

 Here are the essential details. 14




Main Point
 The article discusses the growing demand for sustainability qualifications in Ireland and the educational opportunities available to meet this demand (1)

Key Points
 A report by LinkedIn in 2023 indicated that demand for green skills is outpacing supply, with job postings requiring green skills increasing by over 22%. (1) Educational offerings in sustainability in Ireland include undergraduate and postgraduate courses, as well as short programs like micro credentials (1)

Sources
 The information is based on insights from educators like Dr. Ciaran O'Carroll from TUD and Thomas Macagno from UCD Innovation Academy (2) (3)

Implications
 Upskilling in sustainability is seen as a way to enhance employability, with opportunities in roles specifically focused on sustainability as well as in other operational roles that require sustainability knowledge (4)


Tone
 The article has an informative and optimistic tone, highlighting the importance of sustainability education in the current job market (1)

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14 重点细节
 此示例基于新闻文章结构（事件要点、关键细节、消息来源、影响分析、立场倾向等要素）展示核心内容。




【8】 交互功能

Please share the insights on sustainability in Japan. 

Insights on Sustainability in Japan (from the document)


- The document mentions several Japanese institutions and researchers who have contributed to sustainability science, such as the Institute for Global Environmental Strategies (IGES) and The University of Tokyo.
- Japan is highlighted as a place where sustainability science has grown, with the Sustainability Science journal being launched there in 2006. This journal has helped promote interdisciplinary research and solutions for global change, including resilience in natural, social, and human systems.
- The document refers to Japan's efforts in sustainable urban transitions, such as the "Circulating and Ecological Sphere (CES)" concept, which aims for resilient and decentralized urban development.
- Japanese researchers have also focused on topics like sustainable water resource management, biodiversity, and integrating traditional and modern knowledge for a sustainable future.

If you need more specific details or examples, let me know!

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What are the findings or conclusions? +4 more

Ask a question (beta) 

15 交互功能
用自然语言和研究助手进行对话提问

15