CU Scholar Final Capstone Action Plan

Interactive construction terms guidebook with real-world examples

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Background

The field of construction engineering and management relies on highly specialized terminology that is essential for effective communication and understanding within academic and professional settings. For international students, language barriers can pose significant challenges when learning and retaining these terms, particularly when instruction is conducted exclusively in English. While students may recognize similar concepts in their native languages, the lack of direct equivalence or familiarity with English terminology can hinder comprehension, participation in discussions, and confidence in academic and professional environments in construction.

To address this challenge, this project aims to develop an Interactive Construction Terms Guidebook, offering translated terminology, definitions, and real-world examples to reinforce understanding. This guidebook seeks to bridge the language gap, enhancing international students' academic performance and professional preparedness by providing a practical and accessible resource. By equipping students with a deeper grasp of essential terminology, the project supports their success in both educational and industry contexts.

Project overview and scope

This project is designed for the Construction Engineering and Management (CEM) program at CU Boulder and aims to support international students by addressing language barriers in understanding construction-specific terminology. The primary objective is to create an Interactive Construction Terms Guidebook that provides essential terminology, translations into multiple languages, and real-world examples to enhance comprehension and application.

The guidebook will be a dynamic resource, open to contributions from both students and faculty. Users will have the ability to add new terminology and provide feedback, ensuring the guide remains relevant and evolves to meet the needs of the academic and professional community. The intended use of the guidebook is to make it available to all students, including non-international students, serving as a resource during homework, class activities, and, if deemed appropriate by the instructor, during exams. This project aims to create an inclusive learning tool that benefits not only international students but also the broader CEM program.

Timeline for the project

<u>Phase 1: Research and collaboration (2 months)</u>

- Conduct research to identify essential construction terminology in CEM courses and gather input from students and professors.

- Collaborate with faculty to define the scope of the guidebook and prioritize content.

<u>Phase 2: Development and design (3 months)</u>

- Develop the structure of the guidebook, including terminology, translations, definitions, and examples.

- Design the interactive features, ensuring the guidebook is user-friendly and accessible.

- Create a prototype for initial review.

Phase 3: Testing and feedback (1 month, then continuous)

- Pilot the guidebook with a small group of international students and faculty.

- Gather feedback to refine content, functionality, and usability.

- Establish a system for continuous feedback and updates to ensure the guidebook remains relevant over time.

Phase 4: Launch and distribution (1 month)

- Finalize the guidebook based on testing and feedback.

- Launch the guidebook as an open-source resource for students and faculty.

- Promote the guidebook within the CEM program.

Resources needed to carry out the project

Student participation. Active involvement of students to contribute ideas, review content, and provide feedback throughout the project phases.

Faculty expertise. Collaboration with professors from the CEM program to identify key terminology, provide insights, and validate content.

Translation assistance. Partnership with professors from international universities to ensure accurate and context-appropriate translations of construction terminology.

Design and development tools. Access to software and tools for designing and developing the guidebook, including interactive and user-friendly features.

Funding. Financial support to cover costs associated with software, translation efforts, and potential dissemination of the guidebook.

Methods for assessment

Content accuracy. Regular reviews by faculty and industry experts to ensure the terminology, translations, and examples are accurate and relevant to the CEM program.

Student feedback. Collect feedback from international students during testing phases to assess the usability, comprehension, and overall effectiveness of the guidebook.

Engagement metrics. Track the number of users, contributions, and updates to evaluate the guidebook's adoption and engagement within the program.

Learning outcomes. Conduct surveys or interviews with international students to measure improvements in their understanding of construction terminology.

Sustainability. Monitor the guidebook's continuous usage and updates post-launch to ensure it remains a relevant and evolving resource for future students.

Project benefits for international students

Promoting inclusion. By providing terms in multiple languages and visual aids, the guidebook fosters an inclusive learning environment where students from diverse backgrounds feel valued and supported + by including examples from different countries, the guidebook promotes understanding of diverse construction practices and cultural contexts, fostering appreciation for various perspectives in the field.

Facilitating cultural adjustment. Through contextual examples from both U.S. and international construction practices (generally from the student's home country), students will learn technical language relevant to the U.S. industry while relating it to familiar practices from their home countries. Additionally, construction processes and requirements differ from one country to another in terms of stakeholders, regulations, processes, and laws. By sharing these examples and making comparisons, international students can gain insight into both perspectives, which will help their understanding of the U.S. construction industry.

Enhancing academic success. With definitions, translations, and real-world applications of terminology, students will improve their comprehension and retention of material covered in classes, enabling them to participate confidently in class discussions and assignments. Sometimes, even with previous professional experience in construction from other countries, it can be very hard to understand all the construction terms used here. For students, this difficulty can make it challenging to complete homework or exams when memorizing technical words is complicated. Having an open glossary of terms that can be used during class could significantly impact students' academic success.

Supporting career development. By grounding terms in real-world construction scenarios, the guidebook will equip students with industry-specific language skills, preparing them for internships, networking, and professional interviews.