

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Summary of the Literature

Higher education is a place of constant change, and our educational practice demands continuous growth and pedagogical development by faculty and staff in hopes of better supporting student learning. Pedagogical and professional development begins with a regular practice of reflection on the efficacy of our teaching practices and to develop greater awareness of how our experiences, identities, emotions, biases, and institutional context shape our pedagogical approaches and interactions with students. Regularly soliciting feedback from students and colleagues, employing rigorous assessments of student learning (e.g., validated pre-/post-testing, focus groups, etc.), utilizing published pedagogical self-assessments and rubrics, and reading pedagogical literature can guide reflection and identify areas of improvement.

Individual efforts are enhanced by engagement with robust communities of practice in which individuals regularly share insights, strategies, and resources with faculty peers. Pedagogical communities of practice come in many forms (intra-disciplinary vs. cross-disciplinary, formally vs. loosely structured) and can address any number of pedagogical topics. In order to be effective, communities of practice should foster trust and collegiality among members.

Finally, institutional support is critical to effective pedagogical and professional development. Such support can come by providing incentives (e.g., release time, stipends) and validation of faculty and staff time and effort, opportunities for professional development (e.g., programing through the Center for Leadership in Teaching and Learning) and mentoring, training on and support for pedagogical scholarship, and aligning pedagogical and professional development with the institutional mission and strategic goals. Additionally, the institution can develop and support a culture that values and rewards ongoing faculty and staff development and pedagogical risk-taking and innovation.

Annotated Bibliography

Reshaping Teaching and Learning: The Transformation of Faculty Pedagogical Content Knowledge

Major, Claire H. and Betsy Palmer. 2006. Reshaping Teaching and Learning: The Transformation of Faculty Pedagogical Content Knowledge. *Higher Education* 51(4): 619-647.

Keywords

- faculty knowledge
- higher education
- instructional change
- instructional intervention
- organizational change
- pedagogical content knowledge

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- pedagogical reasoning
- problem-based learning
- scholarship of teaching

Summary

The study "Reshaping Teaching and Learning: The Transformation of Faculty Pedagogical Content Knowledge" by Claire H. Major and Betsy Palmer explores how a campus-wide problem-based learning (PBL) initiative influences faculty pedagogical content knowledge. The qualitative study revealed that faculty's existing knowledge and institutional interventions significantly shaped their new understanding of faculty roles, student roles, disciplinary structures, and pedagogy. This transformation was solidified through the communication of new knowledge. The study highlights the importance of professional development in teaching and suggests that structured institutional support can foster significant pedagogical changes among faculty.

Practical Actions Recommended

- 1. Institutional Support for Pedagogical Change**
 - **Example:** Provide release time, summer salaries, and resources for faculty development.
 - **Action:** Allocate funding and time for faculty to attend workshops, conferences, and training sessions on new teaching methods.
- 2. Collaborative Course Redesign**
 - **Example:** Form teams of faculty to redesign courses using PBL.
 - **Action:** Establish interdisciplinary teams to collaboratively develop and implement problem-based learning modules.
- 3. Faculty Development Workshops**
 - **Example:** Conduct workshops on PBL problem design, facilitation skills, and assessment.
 - **Action:** Offer regular faculty development sessions focusing on specific pedagogical skills and strategies for effective PBL implementation.
- 4. Ongoing Feedback and Reflection**
 - **Example:** Use course portfolios and regular feedback from students, staff, and external experts.
 - **Action:** Implement a system of continuous feedback and reflection for faculty to evaluate and improve their teaching practices.
- 5. Creating a Supportive Community**
 - **Example:** Promote peer discussions and collaborations on teaching practices.
 - **Action:** Foster a culture of collegiality and support where faculty regularly share insights and strategies for improving teaching and learning.
- 6. Encouraging Scholarly Teaching**
 - **Example:** Encourage faculty to present and publish their teaching innovations.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- **Action:** Support faculty in documenting and disseminating their pedagogical research through presentations, publications, and course portfolios.

Faculty Professional Development and Student Learning: What is the Relationship?

Rutz, Carol, William Condon, Ellen R. Iverson, Cathryn A. Manduca, and Gudrun Willett. "Faculty Professional Development and Student Learning: What is the Relationship?" *Change: The Magazine of Higher Learning*, vol. 44, no. 3, 2012, pp. 40-47. DOI: [10.1080/00091383.2012.672915](https://doi.org/10.1080/00091383.2012.672915).

Keywords

- Faculty Development
- Student Learning
- Pedagogical Improvement
- Writing Across the Curriculum (WAC)
- Critical Thinking
- Quantitative Reasoning
- Assessment

Summary

This study investigates the impact of faculty professional development on teaching practices and student learning outcomes at Carleton College and Washington State University (WSU). The research, supported by the Spencer Foundation, tracked the effects of various faculty development programs, including workshops and assessment activities, on faculty and their teaching strategies. Findings suggest that professional development leads to improved teaching practices, which subsequently enhance student learning. The study emphasizes the importance of creating a culture that values ongoing learning about teaching, supported by institutional commitment to faculty development.

Practical Actions Recommended

1. **Implement Comprehensive Faculty Development Programs:**
 - **Offer a Variety of Development Opportunities:**
 - Provide workshops, reading groups, informal discussions, and formal training on pedagogy, assessment, and subject-specific content.
 - Example: Organize multi-day workshops on integrating quantitative reasoning and writing across the curriculum.
2. **Promote Reflective Teaching Practices:**
 - **Encourage Faculty to Reflect on Their Teaching:**
 - Facilitate opportunities for faculty to assess and reflect on their teaching practices and student learning outcomes.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Example: Conduct regular teaching observations and peer reviews to provide constructive feedback and promote continuous improvement.
- 3. **Foster a Culture of Continuous Learning:**
 - **Create an Environment that Supports Lifelong Learning:**
 - Develop a campus culture that values and supports ongoing professional development for faculty.
 - Example: Establish a center for teaching and learning that offers resources, support, and incentives for faculty participation in professional development activities.
- 4. **Integrate Cross-Curricular Faculty Development:**
 - **Encourage Collaboration Across Disciplines:**
 - Promote interdisciplinary collaboration through faculty development programs that address common pedagogical challenges.
 - Example: Host cross-curricular workshops on critical thinking and writing that bring together faculty from different departments.
- 5. **Utilize Data to Drive Improvement:**
 - **Assess the Impact of Faculty Development:**
 - Implement rigorous assessment methods to evaluate the effectiveness of faculty development programs and their impact on student learning.
 - Example: Use rubrics to assess changes in teaching practices and student work over time, and adjust faculty development programs based on these findings.
- 6. **Support Adjunct and Temporary Faculty:**
 - **Provide Development Opportunities for All Faculty:**
 - Ensure that adjunct and temporary faculty have access to the same professional development opportunities as tenured faculty.
 - Example: Offer stipends or other incentives to encourage participation in faculty development programs among adjunct and temporary instructors.
- 7. **Encourage Experimentation and Innovation:**
 - **Create a Safe Space for Pedagogical Experimentation:**
 - Allow faculty the freedom to experiment with new teaching strategies without fear of negative evaluations.
 - Example: Develop pilot programs that support innovative teaching practices and provide a framework for assessing their effectiveness.
- 8. **Align Faculty Development with Institutional Goals:**
 - **Ensure Institutional Commitment to Faculty Development:**
 - Align professional development efforts with the institution's strategic goals and mission to maximize their impact.
 - Example: Integrate faculty development initiatives into the institution's broader goals for improving student learning and success.

By implementing these practical actions, institutions can enhance the effectiveness of their faculty development programs, leading to improved teaching practices and better student learning outcomes.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

On Faculty Development of STEM Inclusive Teaching Practices

Dewsbury, Bryan M. 2017. On Faculty Development of STEM Inclusive Teaching Practices. FEMS Microbiology Letters 364. DOI: 10.1093/femsle/fnx179

Keywords

- Inclusive teaching
- Faculty development
- STEM education
- Underrepresented students
- Professional development

Summary

The article by Bryan M. Dewsbury explores the need for a comprehensive approach to faculty development in STEM inclusive teaching practices. It addresses the persistent retention gaps of underrepresented minorities (URMs) in STEM fields and critiques traditional deficit-focused approaches. The author advocates for shifting the focus to changing campus culture and instructors' mindsets through deep engagement with social contexts and histories of both faculty and students. The article emphasizes the importance of professional development for current faculty and calls for a transformation in pedagogical training at the graduate and postdoctoral levels to ensure sustainable, inclusive teaching practices. By integrating cultural competence and inclusive pedagogy deeply into faculty development, Dewsbury argues for a systemic overhaul of how STEM education is approached.

Practical Actions Recommended

- 1. Commitment to Ongoing Cultural Understanding**
 - **Example:** Faculty should continuously engage with the social histories of their students and themselves.
 - **Action:** Incorporate reflective practices and discussions on social contexts into regular faculty development sessions.
- 2. Shift from Deficit Models to Campus Culture Change**
 - **Example:** Move away from focusing solely on student deficiencies.
 - **Action:** Develop and promote inclusive campus policies that address systemic inequities and support all students.
- 3. Early Integration of Pedagogy Training**
 - **Example:** Include pedagogy and cultural competency training in graduate and postdoctoral programs.
 - **Action:** Design graduate curricula that emphasize teaching skills and cultural awareness alongside research training.
- 4. Promoting Intercultural Knowledge**

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- **Example:** Use diverse examples and multicultural content in STEM courses.
 - **Action:** Develop course materials that reflect a variety of cultural perspectives and engage students in intercultural learning activities.
5. **Creating Inclusive Classroom Environments**
- **Example:** Foster a sense of belonging for all students.
 - **Action:** Implement classroom strategies that encourage collaboration, respect, and the inclusion of diverse voices.
6. **Understanding and Addressing Implicit Bias**
- **Example:** Educate faculty about implicit biases and their impact on teaching and learning.
 - **Action:** Provide workshops and resources on recognizing and mitigating implicit biases in the classroom.
7. **Developing Long-Term Faculty Development Programs**
- **Example:** Offer sustained professional development opportunities.
 - **Action:** Create a series of workshops, seminars, and mentorship programs that support ongoing faculty growth in inclusive teaching practices.

The Development of the Personal Self and Professional Identity in Learning to Teach

Rodgers, Carol R., and Katherine H. Scott. "The development of the personal self and professional identity in learning to teach." *Handbook of research on teacher education*. Routledge, 2008. 732-755.

Keywords

- Teacher Identity
- Professional Development
- Constructive-Developmental Theory
- Reflective Practice
- Emotional Labor
- Narrative Identity

Summary

The article by Rodgers and Scott explores the complex relationship between the personal self and professional identity in the context of learning to teach. It emphasises that teacher identity is formed and continually reshaped through interactions with social, cultural, political, and historical contexts. The authors argue that teacher education should address the development of the self by encouraging teachers to become aware of these contextual forces and to author their own professional identities. The paper highlights the role of emotions, relationships, and narratives in shaping identity and underscores the importance of reflection and self-awareness in teacher education. Constructive-developmental theory is proposed as a framework for understanding the varying capacities of teachers to navigate and integrate these influences into their professional identities.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Practical Actions Recommended

1. Encourage Reflection:

- Teachers should engage in regular reflective practices to understand their experiences and the contextual forces shaping their identities.
- Example: Maintain reflective journals documenting interactions, feelings, and professional growth.

2. Promote Self-Awareness:

- Programs should foster self-awareness among teachers about their own beliefs, values, and biases.
- Example: Use autobiographical writing and storytelling to explore personal and professional histories.

3. Create Supportive Environments:

- Develop "holding environments" that provide both support and challenge to foster growth.
- Example: Establish mentoring systems where experienced teachers guide new teachers through reflective dialogues.

4. Integrate Constructive-Developmental Theory:

- Apply constructive-developmental principles to understand and support the varying developmental stages of teachers.
- Example: Tailor professional development activities to meet teachers at their current stage and help them progress.

5. Facilitate Collaborative Learning:

- Encourage collaboration and dialogue among teachers to share experiences and insights.
- Example: Organize teacher study groups and reflective practice communities.

6. Acknowledge Emotions:

- Recognize and address the emotional aspects of teaching and identity formation.
- Example: Discuss emotional challenges openly in professional development sessions and provide strategies for managing them.

7. Focus on Context:

- Help teachers understand the impact of social, cultural, and political contexts on their professional identity.
- Example: Conduct workshops on the politics of identity and the role of teachers in society.

Faculty Learning Communities: Addressing the Professional Development Needs of Faculty and the Learning Needs of Students

Daly, Cheryl J. "Faculty Learning Communities: Addressing the Professional Development Needs of Faculty and the Learning Needs of Students." *Currents in Teaching and Learning*, vol. 4, no. 1, Fall 2011, Worcester.edu/Currents.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Keywords

- Faculty Development
- Faculty Learning Communities
- Self-Determination Theory
- Teaching Improvement
- Organizational Change in Higher Education

Summary

This study explores the impact of faculty learning communities (FLCs) on faculty development and student success at seven higher education institutions. Daly highlights that FLCs, by design, involve high levels of faculty involvement and ownership, promoting autonomous, self-directed learning and relationship-building across departments. The study finds that FLCs enhance faculty growth through autonomous activities, opportunities to build competencies, and venues for cross-disciplinary interactions. These elements lead to pedagogical improvements that support student learning and institutional change, particularly in addressing diversity-related issues.

Practical Actions Recommended

1. Autonomous Self-Directed Learning:

- Faculty should be given the autonomy to design and direct their learning activities within FLCs, allowing for personalized and relevant professional development.
 - Example: Faculty members at a university designed their own campus needs assessment surveys and developed initiatives to improve teaching and learning based on the survey results.

2. Building Areas of Competence:

- FLCs should provide opportunities for faculty to identify and develop new areas of expertise, particularly in teaching practices.
 - Example: Faculty members engaged in research projects to measure the effectiveness of inclusive teaching practices in their classrooms.

3. Cross-Disciplinary Relationship-Building:

- FLCs should facilitate relationship-building across different academic units, promoting collaboration and shared learning experiences.
 - Example: A liberal arts college's FLC worked with student affairs staff to establish an organization for LGBT students, enhancing campus inclusivity.

4. Institutional Support and Resources:

- Institutions should support FLCs by providing necessary resources such as release time for faculty, funding for activities, and administrative backing.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Example: A community college established a center for pedagogical innovation to support faculty adopting new teaching practices and conducting research on teaching and learning.

5. Focus on Diversity and Inclusion:

- FLCs should address diversity-related issues to improve the learning environment for all students.
 - Example: A public university's FLC organized an annual student-faculty research conference on race, ethnicity, and cultural differences.

6. Encouraging Reflection and Trust:

- FLCs should promote a climate of trust and reflection where faculty can openly discuss successes and failures in teaching.
 - Example: Faculty participants shared their educational autobiographies, fostering deeper connections and mutual understanding of diverse experiences.

By implementing these practical actions, FLCs can effectively support faculty development, enhance teaching practices, and foster an inclusive and supportive learning environment for students.

Orientation, Mentoring and Ongoing Support: A Three-Tiered Approach to Online Faculty Development

Vaill, Amber L., and Peter A. Testori. "Orientation, Mentoring and Ongoing Support: A Three-Tiered Approach to Online Faculty Development." *Journal of Asynchronous Learning Networks*, vol. 16, no. 2, 2012, pp. 111-119.

Keywords

- Faculty development
- Online learning
- Mentoring
- Support
- Online faculty
- Orientation

Summary

This article describes a three-tiered faculty development program at Bay Path College aimed at facilitating the transition to online teaching. The program includes initial orientation, peer mentoring, and ongoing support to equip faculty with the necessary skills and confidence for effective online instruction. The orientation combines pedagogical and technical training,

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

mentoring pairs new instructors with experienced online educators, and ongoing support ensures continuous improvement and adherence to best practices. The approach has resulted in increased faculty preparedness and satisfaction, contributing to the overall success of online learning programs at the institution.

Practical Actions Recommended

1. Initial Orientation:

- **Combination of Pedagogical and Technical Training:**
 - Equip faculty with both teaching strategies and technical skills for online education.
 - Example: Conduct workshops on using the learning management system (LMS), designing online courses, and creating engaging content.
- **Backward Design and Student-Centered Learning:**
 - Encourage faculty to design courses that start with learning outcomes and incorporate student-centered approaches.
 - Example: Use backward design to structure course modules and create activities that foster active learning.

2. Mentoring:

- **Pairing with Experienced Online Instructors:**
 - Assign new faculty mentors who are experienced in online teaching to provide guidance and support.
 - Example: Mentors share their course design, discuss best practices, and offer feedback on the new instructor's course.
- **Observation and Interaction:**
 - Allow new instructors to observe their mentor's online course to understand effective practices.
 - Example: New faculty members review their mentor's syllabus, discussions, and course structure.

3. Ongoing Support:

- **Regular Check-ins and Feedback:**
 - Continuously monitor and support faculty through regular course check-ins and constructive feedback.
 - Example: The instructional designer reviews courses periodically, ensuring adherence to quality standards and providing feedback for improvements.
- **Professional Development Opportunities:**
 - Offer ongoing workshops and training sessions to keep faculty updated on new tools and methodologies.
 - Example: Conduct monthly webinars on topics such as using multimedia in online courses, creating interactive assessments, and fostering online community building.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

By implementing these practical actions, the three-tiered approach ensures that faculty are well-prepared for online teaching, leading to improved student learning experiences and higher satisfaction rates among both faculty and students.

Getting Started in Pedagogic Research within the STEM Disciplines

Lawson, Duncan. "Getting Started in Pedagogic Research within the STEM Disciplines." *Newman University*, 2023.

Keywords

- Pedagogic Research
- STEM Education
- Scholarship
- Teaching Methods
- Quantitative Methods
- Qualitative Methods
- Educational Improvement

Summary

This guide by Duncan Lawson outlines the foundational concepts and approaches for engaging in pedagogic research within STEM disciplines. The article defines pedagogy and pedagogic research, emphasizing its importance in enhancing teaching practices and student learning experiences. It distinguishes between scholarly approaches, scholarship, and research, highlighting the need for rigorous methodologies and connections with existing literature. The article provides practical advice on quantitative and qualitative research methods, including the design of experiments, surveys, and diagnostic tests. It also addresses the importance of publishing pedagogic research to contribute to the broader educational community.

Practical Actions Recommended

- 1. Engage in Pedagogic Research:**
 - Understand the Different Levels of Pedagogic Enquiry:**
 - Reflect on teaching practices to inform personal knowledge (scholarly approach).
 - Collaborate within groups to share and verify findings (scholarship).
 - Conduct research aimed at informing a wider audience (research).
 - Example: Develop a small-scale study on the impact of active learning strategies in a physics course, starting with personal reflections and expanding to group discussions and wider dissemination.
- 2. Connect with Existing Literature:**
 - Investigate Previous Work:**

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Thoroughly explore relevant published research before starting a new project.
 - Example: Review literature on peer-assisted learning to identify gaps and avoid redundancy in your study.
3. **Design Robust Research Methods:**
- **Quantitative Methods:**
 - Use methods such as questionnaires, structured interviews, and psychometric tests to gather data.
 - Example: Design a questionnaire to measure students' attitudes towards collaborative learning and analyze the results using statistical tests.
 - **Qualitative Methods:**
 - Employ interviews, focus groups, and observations to gain deeper insights.
 - Example: Conduct focus groups with students to explore their experiences and perceptions of online learning environments.
4. **Use Diagnostic Tests:**
- **Implement Pre- and Post-Tests:**
 - Use standardized diagnostic tests to measure student understanding before and after instruction.
 - Example: Administer a diagnostic test on basic mathematical concepts at the beginning and end of a calculus course to assess learning gains.
5. **Publish Research Findings:**
- **Choose Appropriate Publication Venues:**
 - Consider magazines, grey publications, and peer-reviewed journals based on the scope and rigor of your research.
 - Example: Submit preliminary findings to a grey publication like *New Directions in Physical Sciences Teaching*, and a more comprehensive study to a journal like *Chemistry Education Research and Practice*.
6. **Ethical Considerations:**
- **Ensure Ethical Research Practices:**
 - Follow ethical guidelines, especially when conducting research involving human participants.
 - Example: Obtain informed consent from students participating in your study and ensure their data is anonymized and securely stored.

By following these practical actions, educators in STEM disciplines can engage in meaningful pedagogic research that enhances their teaching practices and contributes to the broader educational community.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Scaling Up: Lessons for Persuading Science Faculty to Adopt an Evidence-Based Intervention

Smith, Jessi L., and Dustin B. Thoman. "Scaling Up: Lessons for Persuading Science Faculty to Adopt an Evidence-Based Intervention." *Journal of College Science Teaching*, vol. 53, no. 2, 2024, pp. 147-153. doi:10.1080/0047231X.2024.2316388.

Keywords

- Science Education
- Faculty Development
- Evidence-Based Intervention
- Utility Value Intervention
- Pedagogical Change
- Motivation

Summary

The article by Smith and Thoman discusses strategies for persuading science faculty to adopt evidence-based pedagogical interventions, focusing on the Utility Value Intervention (UVI) as an exemplar. The UVI, which involves students writing essays to connect course content to their personal lives, has been shown to improve motivation and performance in science courses. However, scaling such interventions beyond their initial study contexts remains challenging. The authors present a proactive strategy informed by social psychological theories to engage faculty and encourage adoption. Their approach, involving asynchronous virtual sessions and targeted communication, successfully led to the adoption of the UVI by over 40% of participating faculty, impacting thousands of students.

Practical Actions Recommended

1. **Identify and Engage Faculty:**
 - **Target Faculty Teaching Relevant Courses:**
 - Focus on faculty teaching introductory courses where interventions can have the most impact.
 - Example: Use databases to identify and contact faculty teaching introductory biology courses.
2. **Initial Invitation and Communication:**
 - **Personal Appeal from a Credible Source:**
 - Send personalized emails from a credible researcher to introduce the intervention and invite participation.
 - Example: A postdoctoral researcher sends an email explaining the project and its benefits, offering a small incentive for participation.
 - **Validate Faculty Time and Effort:**
 - Acknowledge faculty's busy schedules and emphasize the value of their expertise.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Example: Mention how their input is crucial for improving science education and offer compensation for their time.
- 3. **Presenting the Intervention:**
 - **Frame the Situation as Urgent and Relevant:**
 - Highlight the importance of preparing the next generation of scientists and the role of effective teaching.
 - Example: Explain the need for innovative teaching strategies to engage and retain students in science fields.
 - **Ensure Faculty Feel Responsible:**
 - Emphasize faculty's critical role in student success and the potential impact of the intervention.
 - Example: Discuss how faculty can directly influence student motivation and learning outcomes through the UVI.
 - **Provide Tools and Templates:**
 - Offer ready-to-use resources and step-by-step guides to facilitate implementation.
 - Example: Share templates for assignment prompts, grading rubrics, and sample student essays to simplify adoption.
- 4. **Follow-Up and Support:**
 - **Regular Check-Ins and Reflection:**
 - Maintain ongoing communication and provide opportunities for faculty to reflect on their experiences with the intervention.
 - Example: Send follow-up emails with links to resources, and ask faculty to share their feedback and any implementation challenges.
 - **Encourage Sharing and Collaboration:**
 - Foster a community of practice among faculty to share insights and strategies for successful implementation.
 - Example: Create an online platform for faculty to discuss their experiences, exchange ideas, and support each other.

By implementing these practical actions, educators can effectively persuade faculty to adopt evidence-based interventions, ultimately enhancing student learning and fostering a culture of continuous improvement in science education.

The Teaching Practices Inventory: A New Tool for Characterizing College and University Teaching in Mathematics and Science

Wieman, Carl, and Sarah Gilbert. "The Teaching Practices Inventory: A New Tool for Characterizing College and University Teaching in Mathematics and Science." *CBE—Life Sciences Education*, vol. 13, no. 3, 2014, pp. 552-569. doi:10.1187/cbe.14-02-0023.

Keywords

- Teaching Practices

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- STEM Education
- Faculty Development
- Research-Based Practices
- Pedagogical Change
- Teaching Inventory

Summary

This article presents the Teaching Practices Inventory (TPI), developed by Carl Wieman and Sarah Gilbert, as a tool to characterize the teaching practices used in STEM courses at colleges and universities. The TPI aims to help instructors and departments reflect on and improve their teaching by providing a comprehensive overview of the practices employed in various courses. The inventory includes 72 items across eight categories, ranging from course information and supporting materials to in-class activities and assessments. By using the TPI, institutions can gauge the extent of research-based practices in their teaching, identify areas for improvement, and track progress over time. The article demonstrates the effectiveness of the TPI through its application in several departments, showing how it can lead to significant improvements in teaching practices.

Practical Actions Recommended

- 1. Utilize the Teaching Practices Inventory (TPI):**
 - **Comprehensive Assessment:**
 - Implement the TPI to evaluate and document the range of teaching practices used in STEM courses.
 - Example: Faculty members complete the TPI for their courses, providing a detailed snapshot of their teaching methods.
- 2. Reflect on Teaching Practices:**
 - **Self-Evaluation:**
 - Encourage faculty to use the TPI results to reflect on their teaching and identify areas for enhancement.
 - Example: Instructors review their TPI scores and compare them with departmental averages to pinpoint specific practices to improve.
- 3. Adopt Research-Based Practices:**
 - **Evidence-Based Teaching Methods:**
 - Promote the use of practices supported by educational research to enhance student learning outcomes.
 - Example: Incorporate active learning techniques such as peer discussions and formative assessments in lectures.
- 4. Provide Detailed Course Information:**
 - **Clear Learning Goals and Materials:**
 - Ensure that syllabi include detailed learning goals, topic lists, and competency expectations.
 - Example: Faculty provide students with a comprehensive syllabus outlining course objectives, required skills, and weekly topics.
- 5. Enhance In-Class Activities:**

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- **Active Learning and Engagement:**
 - Increase the use of interactive and collaborative activities during class sessions.
 - Example: Integrate group problem-solving exercises and use clicker questions to foster student engagement.
- 6. **Improve Feedback Mechanisms:**
 - **Timely and Constructive Feedback:**
 - Implement frequent, low-stakes assessments with opportunities for students to receive feedback and improve.
 - Example: Provide marked assignments with detailed feedback and allow students to resubmit revised work for better grades.
- 7. **Support Teaching Assistants (TAs):**
 - **Training and Coordination:**
 - Offer comprehensive training and regular meetings for TAs to align their teaching methods with course goals.
 - Example: Conduct a half-day TA training workshop before the semester starts and hold weekly coordination meetings.
- 8. **Foster Collaboration and Sharing:**
 - **Community of Practice:**
 - Encourage faculty to collaborate and share effective teaching practices within and across departments.
 - Example: Organize regular teaching workshops and seminars where instructors can discuss and exchange pedagogical strategies.

By implementing these practical actions, faculty can improve their teaching practices, leading to better student outcomes and a more inclusive and effective learning environment.

Multimodal Communication in the University: Surveying Faculty Across Disciplines

Reid, Gwendolynne, Robin Snead, Keon Pettitway, and Brent Simoneaux. "Multimodal Communication in the University: Surveying Faculty Across Disciplines." *Across the Disciplines*, vol. 13, no. 1, 2016. DOI: [10.37514/ATD-J.2016.13.1.02](https://doi.org/10.37514/ATD-J.2016.13.1.02).

Keywords

- Multimodal communication
- Faculty development
- Writing Across the Curriculum (WAC)
- Writing in the Disciplines (WID)
- Digital media
- Academic writing

Summary

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

This study explores the use of multimodal communication across disciplines at a research-intensive public university. Through a survey of faculty, the research provides a snapshot of how multiple modes of communication are integrated into professional, scholarly, and pedagogical practices. Results indicate widespread use of multimodal assignments and a diversity of conceptualizations regarding the relationship between different modes. The study highlights the need for professional development in multimodality within WAC/WID and CxC programs, given the challenges of communicating these concepts across disciplines with varied terminologies and practices.

Practical Actions Recommended

1. Integrate Multimodal Assignments:

○ Coursework Incorporation:

- Encourage faculty to design assignments that combine text, visuals, audio, and other modes to reflect real-world communication practices.
- Example: In a biology course, include assignments that require students to create video presentations of their research findings, integrating both visual data and verbal explanations.

2. Professional Development:

○ Workshops and Training:

- Organize professional development workshops focused on multimodal communication and its implementation in various disciplines.
- Example: Conduct a workshop for faculty on how to use video editing software to create instructional videos, emphasizing the pedagogical benefits of multimodal assignments.

3. Support and Resources:

○ Technical and Pedagogical Support:

- Provide faculty with the necessary tools, resources, and support to implement and assess multimodal assignments.
- Example: Establish a support center that offers technical assistance and resources for creating and assessing multimodal projects, such as digital storytelling and infographic design.

4. Reflective Teaching Practices:

○ Faculty Reflection:

- Encourage faculty to reflect on their teaching practices and the role of multimodality in their disciplines, fostering a culture of continuous improvement.
- Example: Create a faculty learning community where instructors regularly meet to discuss and share experiences related to multimodal assignments, learning from each other's successes and challenges.

5. Cross-Disciplinary Collaboration:

○ Interdisciplinary Projects:

- Promote collaboration among faculty from different disciplines to design interdisciplinary multimodal projects.
- Example: Develop a collaborative project between the engineering and communication departments where students design technical

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

reports and present their findings through a combination of written documents, presentations, and digital media.

6. Student Engagement and Learning:

○ Active Learning Strategies:

- Use multimodal assignments to engage students actively and enhance their learning experiences.
- Example: In a literature course, ask students to create multimedia projects that analyze a novel through a combination of text, images, and sound, encouraging deeper engagement with the material.

7. Assessment Strategies:

○ Develop Rubrics:

- Create clear rubrics and assessment criteria for evaluating multimodal assignments to ensure fair and consistent grading.
- Example: Develop a rubric that assesses not only the content and accuracy of a student's video presentation but also the creativity, technical quality, and integration of different modes of communication.

By implementing these practical actions, faculty can enhance their teaching practices and create a more inclusive and effective learning environment that aligns with the evolving landscape of academic and professional communication.

Writing in Action: Scholarly Writing Groups as Faculty Development

Schick, Kurt, Cindy Hunter, Lincoln Gray, Nancy Poe, and Karen Santos. "Writing in Action: Scholarly Writing Groups as Faculty Development." *Journal on Centers for Teaching and Learning*, vol. 3, 2011, pp. 43-63.

Keywords

- Scholarly Writing Groups
- Faculty Development
- Interdisciplinary Collaboration
- Writing Across the Curriculum (WAC)
- Faculty Scholarship
- Academic Culture

Summary

This article traces the five-year development and implementation of scholarly writing groups at a public, teaching-oriented university. It highlights how these groups support faculty in their scholarly writing endeavors while enhancing the overall academic culture. Through the personal accounts of three faculty participants, the authors illustrate the benefits of these writing groups, which include increased productivity, interdisciplinary collaboration, and improved empathy with student writers. The writing groups, facilitated by the Center for

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Faculty Innovation (CFI) and the University Writing Center, provide structured support, accountability, and a sense of community, significantly contributing to faculty scholarship and teaching practices.

Practical Actions Recommended

1. **Establish Scholarly Writing Groups:**
 - **Create Interdisciplinary and Discipline-Specific Groups:**
 - Form both interdisciplinary and discipline-specific writing groups to cater to different faculty needs.
 - Example: Organize small groups of faculty members from various disciplines to provide diverse perspectives and support.
2. **Provide Structured Support:**
 - **Schedule Regular Meetings:**
 - Hold regular, scheduled meetings to maintain momentum and provide accountability.
 - Example: Groups meet weekly for 90-minute sessions over a six-week period to review and discuss writing projects.
 - **Facilitate with Writing Experts:**
 - Use writing center staff or experienced faculty to facilitate the groups and provide guidance.
 - Example: Writing center professionals lead the groups, offering strategies and feedback on scholarly writing.
3. **Promote Mutual Accountability:**
 - **Set Clear Goals and Deadlines:**
 - Encourage participants to set specific writing goals and adhere to deadlines.
 - Example: Faculty members commit to submitting drafts for peer review and providing feedback within set timeframes.
4. **Encourage Peer Review and Feedback:**
 - **Implement Structured Peer Review Processes:**
 - Establish a systematic approach for providing and receiving feedback.
 - Example: Writers post drafts with specific areas for feedback, and peers focus their reviews on these areas.
5. **Foster a Supportive Community:**
 - **Build a Collaborative Environment:**
 - Create a space where faculty feel comfortable sharing their work and supporting each other.
 - Example: Regularly check in with participants and encourage open discussions about writing challenges and successes.
6. **Enhance Empathy with Student Writers:**
 - **Reflect on Writing Experiences:**
 - Use participation in writing groups to better understand the writing process and empathize with students.
 - Example: Faculty share their experiences and challenges with students, modeling effective writing practices.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

7. Offer Intensive Writing Retreats:

○ Organize Boot Camps and Lock-Downs:

- Provide intensive writing sessions during breaks or at the start of semesters.
- Example: Host a four-day writing boot camp in the library, offering a dedicated space and support for uninterrupted writing time.

8. Measure and Celebrate Success:

○ Track Progress and Outcomes:

- Collect data on publication rates and participant feedback to assess the impact of writing groups.
- Example: Survey participants on their writing productivity and the influence of writing groups on their teaching practices.

By implementing these practical actions, scholarly writing groups can effectively support faculty development, enhance teaching practices, and foster a more inclusive and productive academic environment.

Race Pedagogy: Faculty Preparation Matters

Williams, Stacy A. S., and Addrain Conyers. "Race Pedagogy: Faculty Preparation Matters." *Administrative Theory & Praxis*, vol. 38, no. 4, 2016, pp. 234-250. DOI: [10.1080/10841806.2016.1239396](https://doi.org/10.1080/10841806.2016.1239396).

Keywords

- Race Pedagogy
- Faculty Preparation
- Emotional Management
- Safe Classroom Spaces
- Diversity Training
- Public Administration

Summary

The article by Stacy Williams and Addrain Conyers addresses the challenges of facilitating discussions on race in the classroom, particularly within predominantly White institutions (PWIs). It emphasizes the importance of ongoing, flexible, and adaptable faculty preparation to manage these discussions effectively. The authors argue that successful race pedagogy hinges on instructors' self-awareness, emotional management, and understanding of student values. By creating safe spaces for difficult conversations and employing student-centered strategies, faculty can mitigate classroom tension and promote inclusive dialogues on race and racism. The article provides practical strategies for faculty to enhance their pedagogical skills and manage the emotional climate of their classrooms.

Practical Actions Recommended

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

1. **Develop Self-Awareness and Emotional Management:**
 - **Reflect on Personal Biases and Identity:**
 - Faculty should examine their own biases and how these shape their interactions with students and teaching practices.
 - Example: Instructors use self-reflection questions to assess their understanding of race, class, and gender biases.
 - **Manage Emotions During Race Discussions:**
 - Implement strategies to handle both student and faculty emotions during sensitive discussions.
 - Example: Faculty read "Presumed Incompetent" and "Teaching What You Don't Know" for insights into managing classroom emotions.
2. **Create Safe and Inclusive Classroom Spaces:**
 - **Establish Ground Rules for Discussions:**
 - Set clear guidelines to ensure respectful and productive dialogues on race.
 - Example: Use Singleton and Hays' "courageous conversations" framework: stay engaged, expect discomfort, speak your truth, and accept lack of closure.
 - **Encourage Open and Honest Dialogue:**
 - Facilitate discussions that allow students to express their views and experiences without fear of judgment.
 - Example: Incorporate activities where students write about their silence or discomfort in race discussions and share with the class.
3. **Understand Student Perspectives and Backgrounds:**
 - **Learn About Students' Racial Socialization:**
 - Gain insight into how students' backgrounds and experiences influence their views on race.
 - Example: Use narratives like Irving's "Waking Up White" to understand diverse student experiences.
 - **Respond to Developmental Reactions:**
 - Recognize and appropriately address students' developmental responses to race conversations.
 - Example: Be prepared for and address microaggressions, understanding them as part of students' learning processes.
4. **Engage in Ongoing Professional Development:**
 - **Participate in Faculty Support Groups:**
 - Join or form groups to discuss challenges and share resources for teaching about race.
 - Example: Monthly meetings with faculty peers to vent, share strategies, and gain support in managing difficult dialogues.
 - **Utilize Available Resources:**
 - Access books, articles, and online content that provide strategies and examples for effective race pedagogy.
 - Example: Subscribe to "Teaching Tolerance" and "Upworthy" for relevant content and classroom activities.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

By adopting these practical actions, faculty can enhance their ability to facilitate discussions on race, create inclusive learning environments, and support student engagement with critical social issues.

Developing a Faculty Learning Community for Non-Tenure Track Professors

Bond, Nathan. "Developing a Faculty Learning Community for Non-Tenure Track Professors." *International Journal of Higher Education*, vol. 4, no. 4, 2015, pp. 1-12. DOI: [10.5430/ijhe.v4n4p1](https://doi.org/10.5430/ijhe.v4n4p1).

Keywords

- Faculty Learning Community (FLC)
- Non-Tenure Track Faculty
- Professional Development
- Teaching Improvement
- Higher Education

Summary

This case study examines an emerging research university's efforts to establish a Faculty Learning Community (FLC) for non-tenure track (NTT) faculty. It addresses the unique professional development needs of NTT professors who vary in ranks, teaching abilities, and motivations. Data were collected from interviews, evaluations, and curricular materials. The study finds that the FLC helped participants learn new instructional strategies, feel more connected to colleagues, and gain confidence in their teaching abilities. The findings suggest that FLCs are an effective method of professional development for NTT faculty, contributing to enhanced teaching quality and a stronger sense of community.

Practical Actions Recommended

1. **Establish and Support FLCs:**
 - **Create Cross-Disciplinary Groups:**
 - Form FLCs that include NTT faculty from various disciplines to foster a broader exchange of ideas.
 - Example: Organize small groups of NTT faculty to meet regularly and discuss teaching strategies and challenges.
2. **Provide Structured Support and Curriculum:**
 - **Offer Regular Meetings and Relevant Topics:**
 - Schedule consistent meetings with structured agendas and topics that address foundational teaching skills.
 - Example: Topics such as effective lecturing, facilitating discussions, designing assessments, and engaging students should be included.
 - **Facilitator Guidance and Participant Involvement:**

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Utilize experienced faculty or external experts to facilitate meetings and encourage active participation from all members.
- Example: Rotate facilitation duties among participants to build leadership skills and promote ownership of the FLC.
- 3. **Enhance Collegiality and Professional Relationships:**
 - **Foster a Sense of Community:**
 - Allocate time for socializing and networking during meetings to build connections among faculty.
 - Example: Include informal ice-breaker activities and refreshments to create a welcoming and collegial atmosphere.
 - **Develop Ground Rules for Interaction:**
 - Establish a respectful and supportive environment where faculty feel safe to share and discuss their teaching experiences.
 - Example: Set clear ground rules that emphasize trust, openness, and respect during discussions.
- 4. **Encourage Reflective Practice:**
 - **Promote Self-Reflection:**
 - Encourage faculty to reflect on their teaching practices and identify areas for improvement.
 - Example: Use pre- and post-assessment activities to help faculty evaluate their teaching methods and track progress.
- 5. **Provide Recognition and Rewards:**
 - **Acknowledge Participation and Achievements:**
 - Recognize and reward faculty for their involvement and contributions to the FLC.
 - Example: Award certificates of completion, publicize achievements, and provide letters of recognition from the university's administration.
- 6. **Utilize Feedback for Continuous Improvement:**
 - **Collect and Act on Participant Feedback:**
 - Regularly gather feedback from participants to improve the FLC and address any issues or suggestions.
 - Example: Use anonymous surveys and informal feedback sessions to gather input on the effectiveness of meetings and topics covered.

By implementing these practical actions, institutions can effectively support the professional development of NTT faculty, leading to improved teaching practices, greater faculty satisfaction, and enhanced student learning outcomes.

Faculty Development for Transparent Learning & Teaching: Perspectives from Teacher-Scholars

Carpenter, R., O'Brien, S., Martin, T., Fox, H., Pinion, C., Skees Hermes, S., Skubik-Peplaski, C., & Humphrey, C. (2021). Faculty Development for Transparent Learning & Teaching: Perspectives from Teacher-Scholars. *The Journal of Faculty Development*, 35(2), 58-64.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Keywords

- Transparent assignment design
- higher education
- student engagement
- faculty development
- COVID-19
- learning outcomes
- Metacognition
- TILT framework.

Summary

This article discusses the implementation and benefits of transparent assignment design in higher education, highlighting various initiatives undertaken by faculty developers to enhance student engagement and learning outcomes. The authors draw on the Transparent Learning and Teaching (TILT) framework by Winkelmes, emphasizing the importance of clearly communicating the purpose, tasks, and criteria of assignments to students. The article includes reflections from teacher-scholars at Eastern Kentucky University, detailing how they have applied transparent teaching methods in their courses. The insights provided show that transparency in teaching not only fosters student motivation and performance but also reduces inequities and supports metacognitive learning.

Practical Actions Recommended

- 1. Purpose, Task, Criteria Design:**
 - Clearly articulate the purpose of each assignment, explaining why it is important and how it contributes to the course's learning objectives.
 - Break down assignments into specific tasks with detailed instructions.
 - Provide criteria for success, including rubrics and examples of high-quality work.
- 2. Flexible and Consistent Communication:**
 - Use technology to offer flexible instruction alternatives, especially in virtual learning environments.
 - Ensure consistent communication and provide clear, organized course content to promote depth in learning.
- 3. Student-Centered Learning:**
 - Design assignments that allow students to direct their own learning and connect tasks to their personal motivations and goals.
 - Include reflective activities that help students understand their learning processes and achievements.
- 4. Faculty Development Initiatives:**
 - Participate in professional learning communities (PLCs) focused on transparent teaching methods.
 - Engage in workshops and institutes that provide training on transparent assignment design.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

5. Feedback and Revision:

- Collect and act on student feedback to continually improve course design and instructional methods.
- Implement strategies such as the "Grade Proposal" system to encourage student self-assessment and metacognition.

Pedagogic Research and Scholarship within the STEM Disciplines

Lawson, D. (2021). Pedagogic Research and Scholarship within the STEM Disciplines. *Getting Started in Pedagogic Research within the STEM Disciplines*. Newman University.

Keywords

- Pedagogic research
- STEM education
- Faculty development
- Scholarly practice
- Teaching methods
- Educational scholarship
- Research methods

Summary

The article by Duncan Lawson provides an in-depth overview of pedagogic research and scholarship within STEM disciplines, emphasizing the importance of adopting a scholarly approach to teaching. It distinguishes between individual reflective practice, group-level scholarship, and broader pedagogic research. Lawson argues that pedagogic research should be firmly situated within relevant literature and make substantial contributions to the field. The article highlights the need for STEM academics to engage in pedagogic research, often requiring them to expand their skill sets to include qualitative and social science research methods. It underscores the importance of improving teaching practices to enhance student learning experiences, particularly in the context of increasing tuition fees and the emphasis on quality education.

Practical Actions Recommended

1. **Adopt a Scholarly Approach to Teaching:**
 - **Reflective Practice:** Regularly reflect on teaching methods and seek continuous improvement based on personal insights.
 - Example: Keep a teaching journal to document and analyze teaching experiences and student feedback.
2. **Engage in Group-Level Scholarship:**
 - **Collaborative Inquiry:** Work with colleagues within the same discipline to verify and share knowledge gained from teaching practices.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Example: Form a faculty learning community to discuss and implement innovative teaching strategies.
- 3. **Conduct Pedagogic Research:**
 - **Situate Research in Literature:** Ensure that research is connected to existing literature and aims to contribute new knowledge to the field.
 - Example: Review relevant studies before starting a research project to build on existing findings and avoid redundancy.
- 4. **Expand Research Skills:**
 - **Learn New Methods:** Develop skills in qualitative and quantitative research methods relevant to pedagogic research.
 - Example: Attend workshops on designing questionnaires, conducting interviews, and analyzing qualitative data.
- 5. **Institutional Support:**
 - **Provide Resources:** Institutions should offer resources such as funding, training, and time for faculty to engage in pedagogic research.
 - Example: Establish a dedicated office for teaching and learning that supports faculty research in pedagogy.
- 6. **Promote Ethical Research:**
 - **Ethical Considerations:** Ensure that pedagogic research adheres to ethical guidelines, particularly when involving student participants.
 - Example: Obtain ethical approval for research projects involving classroom interventions and student assessments.
- 7. **Share Findings Publicly:**
 - **Disseminate Research:** Publish research findings in peer-reviewed journals and present at conferences to reach a wider audience.
 - Example: Submit articles to journals such as *Journal of Research in Science Teaching* and *CBE—Life Sciences Education*.
- 8. **Interdisciplinary Collaboration:**
 - **Cross-Disciplinary Research:** Collaborate with researchers from other disciplines to bring diverse perspectives to pedagogic research.
 - Example: Partner with colleagues from education, psychology, or sociology departments for comprehensive research projects.

The (Ongoing) Plan for Student Success

Bazemore-Walker, Carthene R. "The (ongoing) plan for student success." *Peer Review* 18.1-2 (2016): 21-24.

Keywords

- Student Success
- Higher Education
- Curriculum Redesign
- Faculty Development

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Active Learning
- High-Impact Practices
- Transparency
- Problem-Centered Learning
- Underserved Students

Summary

The article details the strategic efforts of Winston-Salem State University (WSSU), a historically black university, to enhance student success through a comprehensive redesign of their general education program and student support services. Under their strategic plan "Achieving Academic Distinction: The Plan for Student Success 2010-2015," WSSU focused on creating a coherent curriculum that integrates diverse disciplines and twenty-first-century skills, coupled with robust educational guidance. These efforts led to increased student retention, persistence, and graduation rates. The plan also emphasized faculty development, encouraging the adoption of active learning techniques and high-impact practices. Additionally, WSSU's participation in AAC&U projects facilitated the integration of transparency and problem-centered learning into their teaching methods, benefiting underserved minority students. The article highlights the ongoing challenges and the need for continuous improvement in fostering a comprehensive learning culture.

Practical Actions Recommended

- 1. Curriculum Coherence and Skill Integration:**
 - Design curricula that expose students to diverse disciplines while cultivating essential twenty-first-century skills.
 - Implement educational guidance and support systems to enhance student learning experiences.
- 2. Faculty Development and Active Learning:**
 - Encourage faculty to adopt active learning techniques and high-impact practices.
 - Provide professional development opportunities that focus on novel pedagogical approaches.
- 3. Transparent Teaching Practices:**
 - Clearly communicate the learning goals and structure of assignments.
 - Provide detailed criteria for success in advance and use annotated rubrics for clarity.
 - Incorporate peer grading to enhance understanding and application of concepts.
- 4. Problem-Centered Learning (PCL):**
 - Develop assignments that require students to apply conceptual understanding to real-world problems.
 - Facilitate collaborative work through group-based problem-solving activities.
 - Use peer instruction and personal response systems to measure and improve student understanding.
- 5. Continuous Assessment and Feedback:**

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Use frequent and authentic assessments to verify student mastery of learning outcomes.
- Collect and reflect on student feedback to continuously improve teaching practices.

Humanizing STEM Education: An Exploratory Study of Faculty Approaches to Course Redesign

Azizi, Mehri, Mays Imad, Stephanie M. Foote, Joshua Caulkins, and Brad Wuetherick. "Humanizing STEM Education: An Exploratory Study of Faculty Approaches to Course Redesign." *Frontiers in Education*, vol. 8, 2023, article 1181157. doi:10.3389/feduc.2023.1181157.

Keywords

- STEM education
- Faculty development
- Inclusive teaching
- Equity challenges
- Reflection
- Liberatory design
- Humanizing education
- Implementation goals

Summary

This study investigates how faculty in STEM disciplines redesign their courses to incorporate more humanistic and inclusive practices. Using reflections from 26 STEM faculty who participated in an online course offered by the John N. Gardner Institute, the study identifies common equity challenges, goals, and measures of success in course redesign. Key challenges include addressing inequities in student backgrounds and fostering better communication between instructors and students. Faculty goals focus on improving student success, empowering students, and incorporating inclusive materials. Success is measured through student grades, engagement, and feedback. The study emphasizes the importance of liberatory design principles in creating equitable and inclusive learning environments.

Practical Actions Recommended

1. **Addressing Equity Challenges:**
 - **Communication with Students:**
 - Enhance instructor-student communication by relating course content to students' real-life experiences.
 - Example: Redesign assignments to include projects where students choose topics relevant to their personal interests or backgrounds.
 - **Equity in Prior Knowledge:**

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- Develop strategies to support students with varied academic backgrounds.
 - Example: Provide supplementary resources or preparatory modules for students lacking foundational knowledge in key areas.
2. **Setting Goals for Humanizing Courses:**
- **Increasing Student Success:**
 - Aim to improve student grades, attendance, and retention in STEM courses.
 - Example: Set a goal to achieve an 85% success rate in a computer science course by implementing active learning strategies.
 - **Empowering Students:**
 - Focus on building student confidence and promoting a growth mindset.
 - Example: Integrate metacognitive activities that encourage students to reflect on their learning processes and develop problem-solving skills.
 - **Incorporating Inclusive Materials:**
 - Diversify course content to include perspectives from marginalized groups and real-life applications.
 - Example: Include case studies and examples that reflect diverse cultural backgrounds and societal issues.
3. **Measuring Success:**
- **Student Grades:**
 - Use student performance data to assess the effectiveness of redesigned courses.
 - Example: Compare pre- and post-redesign grades to evaluate improvements in student learning outcomes.
 - **Student Feedback:**
 - Collect feedback through surveys, reflective journals, and informal check-ins to gauge student experiences and perceptions.
 - Example: Conduct end-of-semester surveys to gather insights on how students perceive the inclusivity and relevance of course content.
 - **Student Engagement:**
 - Monitor student participation and engagement in class activities and discussions.
 - Example: Track attendance and the frequency of student contributions during class discussions to assess engagement levels.

By implementing these practical actions, faculty can create a more inclusive and supportive learning environment in STEM courses, ultimately enhancing student success and fostering a sense of belonging.

Inclusive Teaching

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

Dewsbury, Bryan and Cynthia J. Brame. 2019. Inclusive Teaching. CBE—Life Sciences Education 18(fe2). DOI: 10.1187/cbe.19-01-0021

Keywords

- Inclusive teaching
- STEM education
- Classroom climate
- Pedagogical choices
- Self-awareness
- Empathy

Summary

The article "Inclusive Teaching" by Bryan Dewsbury and Cynthia J. Brame provides an evidence-based guide to help STEM faculty develop inclusive teaching practices, focusing on race, ethnicity, and gender differences. The guide emphasizes the importance of self-awareness and empathy in understanding students' backgrounds and creating a positive classroom climate. It outlines pedagogical strategies that promote a sense of belonging and self-efficacy among students, highlighting the need for active learning and student engagement. The guide also stresses the role of community and network support in fostering an inclusive learning environment. Overall, the article serves as a resource for faculty at various stages of adopting inclusive practices, providing actionable steps and reflective questions to enhance their teaching.

Practical Actions Recommended

- 1. Developing Self-Awareness**
 - **Example:** Reflect on personal and professional backgrounds and how these influence teaching practices.
 - **Action:** Engage in professional development activities that explore the history of higher education and its impact on diverse student populations.
- 2. Building Empathy**
 - **Example:** Create opportunities for students to share their personal and academic experiences.
 - **Action:** Implement activities that allow students to articulate how their experiences fit into the course context, promoting a dialogue between instructor and students.
- 3. Fostering a Positive Classroom Climate**
 - **Example:** Establish norms of mutual respect and support in the classroom.
 - **Action:** Use inclusive language, highlight diverse scientists, and ensure all student contributions are valued.
- 4. Implementing Inclusive Pedagogical Choices**
 - **Example:** Utilize active learning strategies tailored to the needs of diverse students.

Ongoing Pedagogical And Professional Growth And Development By Faculty And Staff

- **Action:** Choose pedagogical methods that consider the students' backgrounds and promote their sense of belonging and engagement.
- 5. **Leveraging Networks and Community Support**
 - **Example:** Connect classroom activities with campus support services and inclusive practices.
 - **Action:** Integrate visits from campus service providers and incorporate service learning modules into the curriculum.
- 6. **Continuous Reflection and Adaptation**
 - **Example:** Regularly assess the effectiveness of inclusive practices and make necessary adjustments.
 - **Action:** Use student feedback and classroom observations to refine teaching strategies and enhance inclusivity.