Folio Thinking Pedagogy

What is folio thinking?

Folio thinking involves collecting, organizing, reflecting on, and drawing connections between learning experiences. The practice help students more effectively articulate learning experiences with clarity and succinctness. It also helps students look back at their learning, show progress, consider the personal meaning of experiences, and look forward to future learning. They can then share their learning story with others.

Why does it matter at Michigan Tech?

The use of ePortfolios (the culmination of folio thinking efforts) is one of 11 high-impact practices recognized by the American Association of Colleges & Universities because they have been proven to improve academic performance and retention, especially for students at high-risk of dropping out of school. Research shows that folio thinking and preparing ePortfolios helps students accomplish the following:

- develop the ability to articulate learning experiences clearly
- show progress over time
- consider the personal meaning of experiences
- look forward to future learning
- effectively communicate one's learning story to others.

As educators, it is our job to ensure our students reach their full potential and help them articulate their Tech experiences, both in and out of the classroom, to future employers, graduate schools, and others. Folio thinking pedagogy can be that catalyst for transformative learning.

Flip this flyer for ways you can incorporate folio thinking pedagogy into your course

Reflection: Folio thinking encourages students to reflect on their learning experiences, growth, and achievements. It promotes metacognition and deeper understanding.

Authentic Assessment: ePortfolios allow students to showcase their work, skills, and progress in an authentic context. Faculty can assess student learning more holistically.

Ownership and Agency: Students take ownership of their learning by curating and organizing their ePortfolios. They actively engage in the learning process.

Transferable Skills: ePortfolios help students develop transferable skills such as critical thinking, communication, and digital literacy.

Want to learn more? Contact Dr. Nancy Barr, nbbarr@mtu.edu

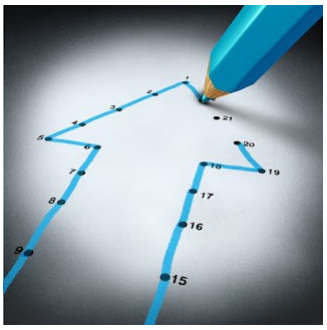
How can I integrate folio thinking into my classes?

1. Digital Portfolios

Example: In a computer science course, students can create a digital portfolio that includes code samples, project reports, debugging processes, and reflections on what they learned from each project. They can also include screenshots or videos of their software in action.

2. Lab Reports & Experiment Documentation

Example: In a chemistry or biology lab course, students can maintain a portfolio of lab reports. Each report can be accompanied by a reflection where students discuss what they learned, the challenges they faced, how they overcame them, and how the experiment relates to broader scientific principles.



3. Project-Based Learning Portfolios

Example: In an engineering course, students can document their design process for a semester-long project. This can include initial sketches, design iterations, prototype development, testing results, and final product. Reflections can focus on problem-solving strategies, teamwork, and application of theoretical knowledge.

4. Mathematical Problem-Solving Logs

Example: In a mathematics course, students can keep a portfolio where they solve complex problems. For each problem, they can document their problem-solving process, including initial thoughts, different approaches tried, and the final solution. Reflections can include insights gained, errors made and corrected, and connections to other mathematical concepts.

5. Research Journals

Example: In a physics course with a research component, students can maintain a research journal within their portfolio. This can include literature reviews, hypotheses, experimental setups, data collected, analysis, and conclusions. Reflections can discuss the research process, unexpected findings, and future research questions.

6. Skill Development Tracking

Example: In a data science course, students can document their progress in learning different tools and techniques (e.g., Python programming, machine learning algorithms, data visualization tools). They can include examples of their work, challenges they encountered, and how they applied feedback to improve.

7. Integration of Interdisciplinary Projects

Example: In an environmental science course, students can create portfolios that integrate knowledge from biology, chemistry, and physics to address environmental issues. Projects could involve fieldwork, data collection, analysis, and policy recommendations, with reflections on the interdisciplinary nature of the work.

8. Peer and Self-Assessment

Example: In any course, part of the portfolio can involve peer and self-assessments. Students can review each other's work and provide constructive feedback, which then becomes part of their own reflective process. Self-assessment can help students identify their strengths and areas for improvement.

9. Showcasing Professional Skills

Example: In a team-based robotics course, students can document not only their technical contributions but also their roles in team dynamics, leadership, communication strategies, and project management. Reflections can include lessons learned about working in a team and how they applied these lessons to improve collaboration.

10. Public Presentations

Example: At the end of the semester, students can present their portfolios to the class or at a departmental symposium. This can include a summary of their projects, key learnings, and future goals. The act of presenting can itself be a valuable learning and reflective experience.