

Effectively Communicating Bioimage Analysis
12-17.2.2024

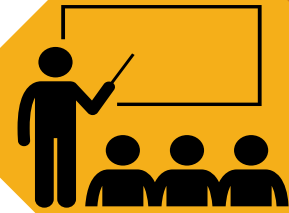
My Journey Through Bioimage Analysis Teaching Methods From Classroom to Cloud

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Introduction: Teaching Basics BIA



Classroom Teaching

- Master's degree courses
- PhD courses
- Small/compact workshops
- One-on-one teaching



Online Teaching

- Guided courses
- Self-study material
- Webinars

Classroom Evolution as a Teacher



1

Lecture-based teaching and practical exercises

- Theories and concepts through lecture material
- Hands-on exercises

2

Active learning and flipped classroom

- Watch videos or complete reading beforehand

3

Project-based learning

- Working towards solving a research scenario

4

Collaborative learning

- Encouraging collaboration and group work between people with different backgrounds

5

Integration of feedback

- Listening to feedback and changing the content
- Encouraging students to learn further by introducing tools/resources

Classroom approaches based on audience

	Master's students	PhD students	Workshops	One-on-one
Audience & Motivation	Part of their curriculum	Own data to analyze	Own data, updating skills or advancing careers	Specific research question
Delivery	Blend of theory and practical	Theme or project-based approach	Intensive hands-on sessions	Tailored specifically to the student's research needs
Student Evaluation	Exams, project work, presentations	Publications, Final presentation	Practical assignments	Informal assessment
Feedback collection	Visual, course evaluation	Feedback forms	Feedback forms	Instant feedback

Online vs in-person teaching



Interaction

In class: Real-time interactive environment, feedback and adjustment

Online: requires interactive tools, polls, breakout rooms, etc.



Flexibility

In class: Less flexible with time and place

Online: Access to material anytime, own pace and environment

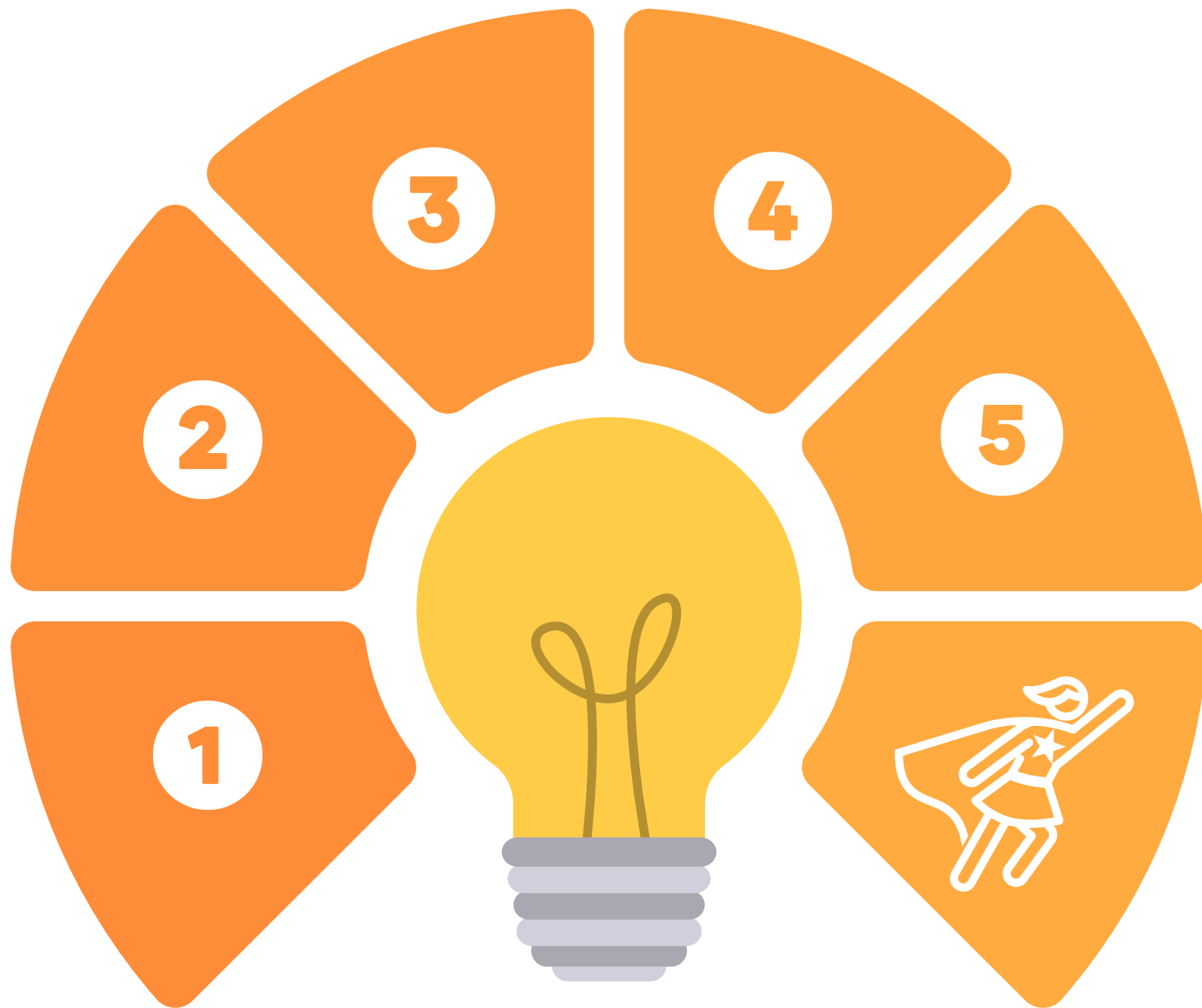


Adaptation

In class: change in teaching strategy based on student reaction

Online: less real-time adaptation but more access to analytics for changing strategies

Online Teaching Evolution



1

Embracing technology

- Zoom
- Moodle

2

Developing online content

- Video lectures
- Quizzes
- Digital assignments

3

Encouraging online engagement

- Interactive material
- Online discussions
- Group projects and breakout rooms

4

Assess and adapt

- Developing forms of online assessment
- More frequent feedback collection

5

Professional development

- Teaming up with university pedagogy or tech staff
- Attending workshops

Online Teaching Approaches

	Guided courses	Self-study	Webinars
Audience & Motivation	Structured learning with instructor guidance.	Flexible learning at their own pace.	Focused learning live or recorded.
Delivery	Live sessions with online material, interactive content, clear objectives and deadlines	Online material: videos, reading	Live or recorded, presentation with Q&A
Engagement Evaluation	Live presence, Assignments, discussions, analytics	Analytics	Attendance, Q&A, chat log, number of views
Feedback collection	Feedback on assignments, surveys	Surveys, self-evaluation checklists	Post-webinar surveys



Online Teaching Approaches

**Demo: Tools to introduce
interactivity**

Other points to think about



Vision

How does a perfect course look like for my audience



Standards

What standards do we need to consider to ensure good quality teaching material



Initiatives

What initiatives are working on the training aspects of bioimage analysis



Resources

What resources are already available



AI

What The future of teaching looks with LLM and other AI tools

Interested in training bioimage analysis?



Training & Education

Christian Tischer, Beth Cimini, Robert Haase, Kota Miura, Christa Walther, Rocco D'Antuono, David Rousseau, Elnaz Fazeli, Tereza Belinova, Hanneke Okkenhaug

Email to: info@globias.org with subject: [GloBIAS training]



Thank You

For your attention!