Step 4: How Will You Get There?

4.1 Develop & Teach Course

Before you start teaching, you will identify activities and create all needed materials for class. At the end of the class, you can take brief notes on how it all went.

This step in IDI is where you develop your class outlines (lesson plans), then teach and assess the students' progress.

4.1 Results (What)

- List of potential activities for upcoming sessions
- Identification of available & required equipment, materials, & technology
- Finalization of your syllabus
- Finalized class outline for next class session.
- List of all materials needed for class session.
- Handouts, slides, and other materials for each part of class session.
- Completed class session.
- Notes on how it went.

4.1 Overview (Why)

Now we have defined what we want to accomplish, how to approach it, and how to measure success, we can develop the instruction. This includes developing the class outlines/lesson plans (for a single or group of classes), teaching it, and reflecting on how it went.

Some student activities will be significant enough to be the main focus of your entire course and others may fit within 1 or 2 class sessions. Identifying them before you start planning your class sessions can help you align activities with the objectives for the lessons.

You have a limited time with your students. To ensure you make the best of it, complete class outlines to help with planning content, activities, and special needs. Use the outlines for guiding each session and noting future actions.

4.1 Suggestions/Instructions (How & What If)

The following suggestions are grouped into the following:

- Time required for teaching & learning
- General Preparation Before First Class Session
- Create outline
- Prep for next session
- Special sessions
- Content Dissemination
- Activities
- Variety in Activities
- Emotional & Mental Support
- Transformative Concepts
- Diversity & Inclusivity
- Scaffolding
- Discussions (Whole class and grouped)
- Asynchronous Discussions
- Synchronous Discussions
- Syllabus
- Technology
- Group Work

Time Required for Teaching & Learning

1. Ohio State University (OSU University Registrar, n.d.), on semesters, recommends *instructors* plan on 9 hours per week per 3-credit hour course, regardless of course structure.
2. The US Department of Education (Ochoa, 2011) recommends *students* plan on 2 hours of out of class student work time for each hour of instruction time. This is typically referred to as Carnegie guidelines.

General Preparation Before First Class Session

1. Draft appropriate non-threatening statements for correcting student errors during discussions (Chickering & Gamson, 1987; Hattie, 2011, pp. 130–142). (**B2, C9**)
2. Consider how you will react to microaggressions and other inappropriate comments, so you are prepared if needed. (**B2, B3, C9**)
3. Arrange guest speakers, such as content experts, student services, project managers, recruitment professional specializing in your field, etc.
4. Arrange for all equipment needed – butcher paper & markers, software and hardware, etc.

Create outline

1. Review course schedule, assessments, activities, and assignments to determine what needs to be included in this session. (**C2, C7**)
2. Develop an outline of content to identify sequencing (Graesser, 2010, p. 18). (**C6**)

3. Use the class outline form to ensure you have prepared. (**B2**, C2, C7)
4. Use routines, such as class session format, introduction of activities, etc. (Byron, 2020; *Executive Function & Self-Regulation*, n.d.). (**A8**)
5. Include time for students to manage their anxiety and emotions so they can focus on the material (Byron, 2020). (**A8**)
6. "Balance talk time (your own and students')." (Graupmann, n.d., p. 1). (A7)
7. As you are teaching you will sometimes find a technology is not working as anticipated. Move to Plan B and apologize to students if they are confused or redirected. (**C5**)
8. Identify methods for delivering content other than lectures. (Lee et al., n.d.). (**A8**)
9. If you are going to lecture, identify how you will provide content in a lecture, and maintain both student interest and active learning. (**C6**, A3)

Prep for next session

1. Review previous class outline for ideas on what you need to include.
2. Use the readings and homework to develop discussion questions and activities. Send these to students to help them complete homework. (**A8, B6, C7, C8, C9**)
3. Design quiz questions (clicker or backchannel) to use during lectures. (**A8**)
4. "Look for opportunities to discuss and apply metacognition in a variety of lessons" (Wilson & Conyers, 2014). (**A4**)
5. Regularly communicate with every student. This is particularly applicable to asynchronous courses. (**B2**)
6. Use the LMS announcements to notify students of upcoming assignments, assessments, AND outcomes/objectives.
7. Make sure students know where to find video links, grades, modules – provide a video teaching students where you are putting information.

Special sessions

1. Provide students with a list of strategies for studying and links to websites and books on studying (McGuire & McGuire, 2015, provide these in their book.). (**A4**)
2. "Establish high expectations and show students how to meet those expectations" (McGuire & McGuire, 2015, p.171). (**A4, C4**)
3. Plan "a 45-60-minute learning strategies presentation after students receive the results of their first test or quiz" (McGuire & McGuire, 2015, p.171). (**A4, A6, C2**) Check if student support can help with this.
4. Identify a class session after the first exam or quiz to discuss metacognition and study skills (McGuire & McGuire, 2015, p.172). (**A4**)
5. "Discuss attribution theory with students so they recognize if they are unrealistically attributing their successes and failures to causes outside of their control" (McGuire & McGuire, 2015, p.171). (**A4**)
6. "Discuss the importance of adequate rest, proper nutrition, and exercise for academic success" (McGuire & McGuire, 2015, p.173). (**A4**, B1)
7. Teach students about study skills, metacognition, and Bloom's Taxonomies. Ask students to think about how they have been studying (Graupmann, n.d., p.1; Hattie, 2011, p.130-142; McGuire & McGuire, 2015, p.172). (**A4, A7, B2**)
8. Teach "students the skills of gathering and evaluating data" Hofer (2001) (p.375). (A7)

Content Dissemination

1. Ask students to explain why one concept is more plausible than others (Ormrod et al., 2019, p.209). (A2)
2. Use metaphors, illustrations, and real-world examples (Graesser, 2010, p. 22; Worldwide eLearning, n.d.). (A2, A7, A10, B1)
3. Model your thought processes (Saaris, 2017; Wilson & Conyers, 2014). (B2)
4. Model problem solving and testing for correct resolution of problems (Hattie, 2011). (B2)
5. Provide more than just content. Include why, why not, how, and what if. (B1)
6. Ask students to explain new data and information to allow them to do brainstorming or critical thinking (Ormrod et al., 2019, p. 226; Worldwide eLearning, n.d.). (A2, A10) Ask questions that require students to explain their thought processes. (B1)
7. Ask students for examples of content application in their life. (A1)
8. If looking for specific answers (such as math or other facts), consider making it more fun and less threatening by using candy to reward answers – perhaps even incorrect answers. (B3)
9. Stimulate "curiosity by asking questions or presenting problems to solve" (Mi, 2015). (A10)
10. Pay attention to how students are reacting to the lecture and other activities. Switch approaches if needed.)

Activities

1. Provide a variety of activities and methods. (B2)
2. Provide group or paired activity time (Chickering & Gamson, 1987). (B2)
3. Provide active learning experiences (Graesser, 2010, p. 19). (B1, C7)
4. Provide models or hints to help students get started on problems or assignments" (*Information Overload: Executive Function & Cognitive Load*, n.d.). (**A8**)
5. Pay attention to how activities are working to intervene if necessary. (C7)
6. Identify methods for providing flexibility in activities, discussions, etc. (B2)
7. Discuss implicit bias that the activity may introduce and strategies for removing the bias (Sheridan Center for Teaching and Learning, 2020). For example, are students with accents overtalked or ignored or, just the opposite, given special attention (ex.: People with British accents are sometimes assumed to be more intelligent)? (**B4**)

Variety in Activities

1. Use a variety of *media to provide content*—music, role play, games, visual aids, audio presentations, pencil and paper practice, etc. (Davis, 2014; Graesser, 2010, p. 18; McGuire & McGuire, 2015, p.172; Mi, 2015, p.1). (**A2, A10, B1, B3**)
2. Use a variety of presentation methods and approaches (e.g. videos, discussion groups, lectures, collaborate learning, think-pair-share, small group solving, student-as-teacher days, and reflection questions) to sustain interest (McGuire & McGuire, 2015, p. 172; Worldwide eLearning, n.d.). (**A4, A10**)
3. Provide diverse types of assessments and activities such as projects, assignments, and presentations to support learner variability. This is particularly applicable to asynchronous courses. (CAST, 2018; Chickering & Gamson, 1987; Hargis, 2020; Hattie, 2011, p.130-142). (**B1, B2, B3**)
4. Provide multiple participation methods – synchronous and asynchronous – such as such as whole-class discussions, small group discussions, and paired discussions, both in the classroom and online (Sheridan Center for Teaching and Learning, 2020). (**B3, C9**)
5. Use multiple methods for students *to ask questions to ease* asking questions, such as a backchannel chat, anonymous discussion boards, and muddiest point statements. (**B2, B3, C9**)

6. Use different methods for student interaction such as paired and small group discussions, full-class discussions, and in-class chat sessions during lectures. (**B3**)

Emotional & Mental Support

1. Maintain a positive classroom environment to help students feel comfortable and safe. (**A1**)
2. Create cognitive disequilibrium, such as obstacles to goals, contradictions, conflict, and anomalies, to encourage use of HOTS to solve problems (Graesser, 2010, p. 21). (**B1**)
3. "Provide feedback and support on both a cognitive and emotional level" (Hofer, 2001, p. 375) . (**A7**)
4. Discuss stress and self-care and include syllabus links to student support groups (TEAM-UP, 2020, p. 5). (**A3**)
5. Allow students time to manage their anxiety and emotions so they can focus on the material (Byron, 2020). (**A8**)
6. "Help students develop better executive function skills by… creating and maintaining supportive, reliable relationships" (Executive Function & Self-Regulation, n.d.). (**A8**)
7. Remove as much extraneous cognitive load as possible. (**A8**)
8. "Use verbal cues and prompts to assist students" (McLeod, 2019). (**A9**)
9. "Show respect for students' assumptions, regardless of developmental level" (Hofer, 2001, p. 375). (A7)
10. Help students understand that not all problems have a single right answer and that, as we learn more, the right answer may change (Hofer, 2001, p.376). (**A7**)
11. Use positive feedback and rewards to motivate students. (**A10**, C10)
12. "Giving students license to identify confusions within the classroom culture: ask students what they find confusing, acknowledge the difficulties" (From Tanner, 2012, as quoted by Chick, 2013). (**A4**)
13. "Stay connected to each student so he or she does not feel invisible" (McGuire & McGuire, 2015, p.172). (**A4**)

Transformative Concepts

1. Name the threshold concepts (Timmermans & Meyer, 2019). (A2, A3)
2. When presenting TCs or potentially transformative concepts, use Harbecke's (2012) discussion questions. (A3)
3. Bring in a respected guest speaker who may challenge student current schema. (A2, A3)
4. Use metaphors to help explain new information (Timmermans & Meyer, 2019, p. 363). (A2, A3)
5. "Discuss not only 'what we know' but 'how we know what we know'" Hofer (2001, p.376). (A7)
6. "Go against learners' past experiences or provide opposite point of view" (Worldwide eLearning, n.d.). (A10)
7. Ask students to explain why examples work.(Ormrod et al., 2019, p.209). (A2)
8. Rather than outright challenging a student's current beliefs, look for parts that work with the new information and build on them.
9. Have students read two or more written documents or Internet posts that present conflicting information; ask them to analyze and contrast these sources with respect to the quality of the arguments and evidence provided (Ormrod et al., 2019). (A2, A3)
10. Engage "students in the discussion of controversial issues" Hofer (2001) (p.375). (A7)
11. Help students examine "their assumptions about knowledge and how it is gained" Hofer (2001) (p.375). (A7)
12. Provide "opportunities for students to discuss and analyze ill-structured problems" Hofer (2001) (p.375). (A7) Have students conduct experiments to test various hypotheses and predictions (Ormrod et al., 2019, p.209). (A2, A3)

13. “Provide ‘safe’ opportunities to disagree with course material. (For example, students are free to agree or disagree with the text on an exam provided they are able to summarize the author’s viewpoint as well as their own.)” Graupmann (n.d., p.1). (A7)
14. Monitor what students are saying and writing for signs of persistent misconceptions (Ormrod et al., 2019, p.209). (A2)
15. When students appear conflicted, consider discussing the ‘Shimon Peres solution’ (Aronson & Tavris, 2020). (A2, A3, A8)
16. Watch for students having trouble accepting information that conflicts with their values and beliefs. Consider a closing activity that asks students to write to you about their conflicts and concerns. (C9)
17. “Reinforce that it’s always possible to change one’s mind.” Graupmann (n.d., p.1). (A7)
18. “PRACTICE PATIENCE” “Annoying behaviors could create… the extra ‘window’ for considering alternative responses.” Graupmann (n.d., p.1). (**A7**)

Diversity & Inclusivity

1. Include syllabus statements about inclusivity, civil discourse, and interaction expectations. (**C9**, C3)
2. When discussing pioneers in your field, discuss how, historically, international and diverse experts may have been ignored. (**A5**, A3)
3. In activities, use content examples showing a variety of cultures, peoples, and situations (Addy et al., 2020; Reid & Maybee, 2021; Sheridan Center for Teaching and Learning, 2020). (**B3**)
4. Explicitly teach “cultural concepts, such as the liquid qualities of culture, the changing nature of cultural identities, cultural stereotypes and essentialized ideas of cultures, and globalization and its effects on culture (among others)” (Smolcic & Arends, 2017, p. 68). (**A5**)
5. When asking students to do research, also discuss with them the problems with browser algorithms (such as Google) which may provide racist, incorrect and/or slanted results (Noble, 2018). Ask students to report how algorithms have impacted their search results. (**A5, B3**)
6. Tell your class about your interactions with diverse colleagues and how this has benefitted you and/or your field. (**B3**)
7. Discuss a broad range of career options with undergraduates. (**B3**)
8. Talk with students about the importance of multiple viewpoints that link facts, skills, procedures, and deep conceptual principles (Graesser, 2010, p. 21). (**B1**, A5)
9. Show learners role models using readings by diverse authors and speakers (Worldwide eLearning, n.d.). (**A10, B3**)

Scaffolding

1. Consider guest presenters, project observers, and/or project tutors (with knowledge and skills beyond that of the learner) (McLeod, 2019). (**A9**)
2. Maximize “social interactions with a skillful tutor that allow the learner to observe and practice their skills (McLeod, 2019). (**A9**)
3. Watch students carefully as they demonstrate their abilities in the topic to ensure that they are working within the ZPD or ZCD. (**A9**)

Discussions (Whole class and grouped)

1. Talk about why participation in discussions is important. (**C9**)
2. Provide a discussion rubric and provide points for points on comments based on their quality, quantity, or a combination. (**B2, C9**)
3. Quiz students on homework or provide outline of the key points before class session. Use the quizzes to identify discussion starters. (**C9**)

4. Pay attention for microaggressions and 'tokenism'. (**B3, C9**)
5. Discuss the importance of diversity in opinions and respect. (**B3, C9**)
6. Listen carefully to students to ensure they are respecting each other and take action when you think a student might be upset. (**B2**)
7. During discussions, ask students questions about how they arrived at their answers, provide feedback on their approach, and model accurate approaches (Chickering & Gamson, 1987; Hattie, 2011, p.137). (**B2, B5**)
8. Ask open, general questions. (**C9**)
9. Ask students for their own examples and applications. (**C9**)
10. Specifically ask students for different ideas/approaches. (**C9**)
11. Use role modeling to demonstrate appropriate questioning and discussions (Executive Function & Self-Regulation, n.d.). (**C9**)
12. Watch how much you are contributing. (**C9**)
13. "Require students to explain their reasons for rejecting other viewpoints." Graupmann (n.d., p.1). (A7) "Reinforce the idea that alternative points of view may be legitimate." Graupmann (n.d., p.1). (**A7**)
14. "Provide opportunities for reflection & silence. Encourage students to ask questions of one another (ex: "does everyone know what Jill means by that?")" Graupmann (n.d., p.1). (A7)
15. "Reinforce the legitimacy of students' personal experiences." Graupmann (n.d., p.1). (A7)
16. Debrief student discussions and assignments to promote self-reflection. (**B1**)

Asynchronous Discussions

1. Tell the students how discussion forums can help them meet course outcomes. (**C9**)
2. Provide 'netiquette' rules. (**C9**)
3. Set ground rules for frequency and types of participation. (**C9**)
4. Give explicit instructions. (**C9**)
5. Consider grouping students and using a single thread for each group rather than a thread for each student. (**C9**)
6. Participate in the discussion forum just as you would a synchronous discussion. (**C9**)
7. If some students are not participating, check with them individually to see how you can help them. (**C9**)
8. Monitor and adapt as needed. (**C9**)
9. Assign a question to small groups of students and ask them to discuss then post their conclusions and questions on a main thread. Assign dates for the small groups to post by. (**C9**)
10. Discuss forum posts and replies during class sessions/videos. (**C9**)

Synchronous Discussions

1. During discussions, pay attention to who is talking. For students dominating the conversation, ask them to hold their thoughts for 2 minutes or ask them to take the opposite view. (**C9**)
2. Asking students who do not have their hand raised may encourage more participation but may also embarrass the student. (**C9**)
3. Specifically ask students for different ideas/approaches/examples. (**B3**)
4. If not many students are responding to questions or participating in discussions, consider different interaction methods: (**C9**)
    - After asking a question, wait. Often students will take a while to formulate then answer. (C9)
    - Have students think about question for 2 minutes before accepting responses. (C9)

- If some students are dominating the conversation, ask them to hold their thoughts for 2 minutes or ask them to take the opposite view. (C9)
- Specifically ask students for different ideas/approaches. (C9)
- Provide an in-class chat (backchannel) and either monitor it yourself or ask students on a rotating basis to monitor. If you use students to monitor a backchannel, you may want to make it anonymous (let them know that you can check who is making comments). (B3, C9)
- Use think-pair-share to start discussions. Ask "Whose partner had a brilliant insight?" (Howard, 2019, p. 10). (C9)
- Group the students and have them answer your questions on sheets of paper (or white boards), post them around the room then ask students to move around the room and add notes, comments, or additional questions. (You can also pose different questions for each group). (C9)

Syllabus

1. If you completed worksheets for activity details, consider adding information to the syllabus explaining the activity. (**C3**)
2. In your syllabus, indicate required technologies and student expectations for use, such as: Technical and use support, Costs, Equipment (computers, phones, headsets, etc.). (**C5**)
3. Finalize your syllabus. (**C3**)
4. Check your syllabus against the EnACT rubric (EnACT~PTD, n.d.). (**C3**)

Technology

1. For each course activity (including assignments and assessments) determine what type of technologies would be appropriate for you and for your students (you may want to list mandatory and nice-to-have separately). (**C5**, C3)
2. Consider the support of technology before deciding if you will use it. (**C5**)
3. Check into all technology you may use to ensure it works and you know how to use it. (**C5**)

Group Work

C11 includes links to many aspects of student group work.

1. "Provide guidelines for working effectively in groups" (McGuire & McGuire, 2015, p.172). This will also help students develop better executive function skills (Executive Function & Self-Regulation, n.d.). (**A4, A8**, C11)
2. Use group work where students learn from each other and/or knowledgeable others (Chickering & Gamson, 1987; Gagné et al., 2005, pp. 5–6; Kirschner et al., 2018, p. 217). (**A8, B1, B2**)
3. Support collaboration & community. You can help students find a study buddy, create a discussion board for shared resources, use group quizzes, or use group activities. (K. Andrews, personal communication, 2020; McGuire & McGuire, 2015, p.172). (**A4, B3**)
4. Discuss how group work is beneficial to student learning. (**C11**)
5. Observe group progress and intervene as necessary. (**C11**)
6. Provide formative assessment of both the group interaction and the end-product. (**C11**)
7. Provide information on group roles, stages, and project management. (**C11**)
8. For long-term group work, ask groups to develop a group contract. Provide examples or an outline. (**C11**)

4.1 Worksheets

4.1a – Class Outline
Use this to plan your lesson for either a single class session or a group of related sessions, ensuring you have appropriate content and materials.
4.1b – Tips for Class Sessions
Checklist for common tips for leading a class session.
4.1.c – First Day Checklist
A checklist to use as you prepare your first session's class outline.
4.1d – Asynchronous First Session Class Outline
Additional considerations for class outline for first day of asynchronous courses.
4.1e – Synchronous First Session Class Outline
Additional considerations for class outline for first day of synchronous courses.
4.1f –Activity Details
Use this form to identify potential activities for classes for short-term (lasting 1-3 sessions) activities.
4.1g –Long Activity Break-Down
Use this form to help you prepare longer activities such as projects.
4.1h –Slides checklist
Short checklist for slides (such as PowerPoint presentations), including links to shortcut keys.
4.1i – Mayer's Cognitive Load Checklist
Checklist for all multimedia (LMS, .ppt, printed material…) based on Mayer's principles of multimedia design

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