My Approach to Immersive Learning:

A checklist of things I do, how I start the semester, and how I evaluate the learners

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Introduction

This resource documents my experience of putting together and implementing my CS 341: Computer Science Community & School Outreach (CS4MS+) course each time it is offered. I consider this document a complementary resource to the **Immersive Learning Faculty Handbook** provided by the [Office of Immersive Learning](#) each year. It provides a checklist of what I do when (before, during, and after the semester), a general semester course schedule (showing how I take responsibility at the start of the semester, and then turn it over to the students—moving from being a leader to a mentor), and will describe how I assess the participants, both throughout the semester and at the course level. But first, a bit of background…

History and purpose of the course/project

I initially developed this Immersive Learning CS4MS+ project for the Fall of 2017 to support Northside Middle School as they started to implement the then newly adopted Indiana state academic standards for Computer Science (CS). The focus was to provide resources and help teachers—-most of whom knew very little about CS—to meet these standards, and to expose our community partners' students, particularly underrepresented minorities and females, to CS.

I coined the *CS4MS* initialism to stand for *Computer Science for Middle Schoolers*. Since that initial offering, the program expanded from Northside Middle School to also include Burris Laboratory School, Indiana Academy of Science, Mathematics and Humanities, Inspire Academy, Longfellow Elementary School, Muncie Central High School, Options High School (Noblesville), and Ross Community Center. With the addition of these other community partners, we changed the initialism to *CS4MS+* to represent *Computer Science for Muncie (and surrounding) Schools*. Our community partners serve students from diverse

backgrounds who often do not have the resources available to fully participate in CS activities.

The project aims to research, develop, and curate activities, modules, and other educational resources which better incorporate CS experiences. We deliver these resources directly to students at our community partners' location, or during their field trips to Ball State University. We also make the resources available to our community partners so they can implement them on their own. We developed a website to provide a wider distribution of our curated and developed resources.

A checklist of what I do when

The following lists document items on which I focus before, during, and after a semester during which the course happens. The time line for many items is often a bit flexible, and a given item may happen during an adjoining time period

Before the semester

1. **Community partner(s)**: Contact your community partner(s) before the semester starts to initiate (or continue) a discussion about what their needs are, and how the project might be able to provide solutions. Set expectations with the community partner(s) about what they should expect, and what you anticipate the project can realistically accomplish during the semester. Explain that course participants will contact them after the semester starts to identify their needs. Yes, this is duplicated effort, but it is important to have the course participants identify the community partner's need, rather than me simply telling them—that is part of the learning process. But it is helpful for me to know the needs ahead of time so I can prepare for and guide the course participants in that direction (if they don't go that way). Establish the community partner's preferred communication channel. Do they want all communication to go through you, or do they prefer to communicate with the course participants directly?

2. **Resources**: Identify any possible resources that will be needed or helpful during the project. I use the word resources here very broadly to include funds to buy things, physical items, space, and people. Acquire as many of these resources as possible before the semester starts. Check with your department and the Office of Immersive Learning to see what resources are available through them. Do this early, as it sometimes takes a while to find funding and acquire all the resources.

3. **Working with minors**: Since this project interacts with children under the age of 18, special care must be taken. For more details, review the **Immersive Learning Faculty**

Handbook. Depending on the nature of the interaction, some or all the following may be required.

   a. Register with the BSU [Office of Risk Management](#)
   b. Complete the EduRisk module "Protecting Children: Identifying and Reporting Sexual Misconduct"
   c. Have a criminal background check

I send a detailed message to students registered in the course the week before the semester starts. In this message, I welcome them to the course/project and ask them to complete the training and initiate their background check. This greatly increases the possibility of interacting with minors much sooner in the semester.

During the semester

1. **Shirts and name tags**: In recent years, the Office of Immersive Learning has been offering T-shirts and name tags for all of the participants. Take advantage of this offer. When visiting with your community partner, it's nice to look like you're a group, and everyone wearing the same shirt helps create this appearance. Collect shirt sizes and preferred names for the name tags during the first week of the semester so you can get your "order" submitted as early as possible.

2. **Training and background checks**: Follow up to make sure everyone has completed the required training and initiated their background checks. The Office of Immersive Learning can provide you the status of each for each participant. You'll likely need to follow up quite a few times, as some participants put these tasks off. Remember that completing these tasks are a requirement for interacting with minors, so it is important to complete it early so as to not delay your interaction with your community partner's students.

3. **Keep records**: Accumulate contact hours and the number of community partner students your project interacts with throughout the semester. You'll want to report this data to your department chair at the end of the semester and perhaps include it in your vita.

4. **Scaffold the transition**: The participants in your course will benefit and learn the most the earlier you transition from being the course leader to being the course mentor. However, few participants will be ready to take over. This transition will need to be scaffolded and supported. Consider discussing a variety of topics early in the semester such as leadership, working as a team, interacting and communicating with your community partner, and any domain-specific tasks your course participants may be expected to know how to do. Also consider conducting one or more activities that will provide team bonding experiences. The better prepared your participants are, the better the transition will be. A good transition will mean little loss of forward

momentum and productivity. But if the participants are not ready to "pick up the reigns" when you hand them over, the project is likely to flounder for a while until the participants figure out what is needed and how to work together productively.

5. **Immersive Learning Showcase**: The Office of Immersive Learning conduct the Immersive Learning Showcase each spring. I strongly encourage the team to participate in this event, and a bit of time is devoted to preparing for that towards the end of the semester. See the **Immersive Learning Faculty Handbook** for more details.

After the semester

1. **Thank you letters**: During the last week of the semester, I have the participants draft a collective thank you letter to each of the people we've interacted with throughout the semester. The list includes the teachers and administrators at our community partners, the special guests and presenters who helped during on-campus field trips, and any funders we had that semester. I encourage them to include in the letter how interaction with the letter recipient helped them (the participants) grow and learn. These letters build goodwill with the community partners and provide a record of service for others to include in merit and promotion packages.

2. **Share impact results**: Remember those records I said to accumulate during the semester? Now is the time to share them with your department chair. I've included statistics such as the number of events we participated in, the number of hours the project participants were involved in those events, and the number of students we interacted with at our community partners. My department chair has included this type of data in reports to our college Dean's 0ffice and the university.

3. **Complete course assessment**: The Office of Immersive Learning specifies two student learning outcomes you are to add to your course's student learning outcomes. The current policy of the Office of Immersive Learning is to have project mentors provide assessment data about their immersive learning courses which are held during Spring semesters of even numbered years. You will be asked to provide brief responses to an assessment survey that includes responding about how well each course participant met the specified immersive learning student learning outcomes, along with other related questions. Details may be found on the Office of Immersive Learning's [Faculty Guide to HIPs Assessment](#) webpage.

A (start of) semester schedule

In this section, I briefly describe the flow of the course/project for a typical semester. I serve as a teacher/leader for roughly the first three weeks of the semester, before transitioning to a role of mentor/facilitator, and handing "control" over to the course participants. The first three weeks usually follow the general pattern provided below. Depending on the needs of the group and our community partners, some items may be moved around a bit, some may be added, and some may be eliminated.

Week 1 activities

1. Housekeeping
    a. Collect T-shirt sizes and preferred names for name tags
    b. Confirm training and background checks are started
    c. Take a start of semester team photo
2. Introduction to the course and project
3. Discussion of what immersive learning is/is not
4. Team member introductions
    a. What do they bring to the project?
    b. What do they hope to get out of it?
    c. Why are you a CS major; what draws you to it?
5. Discussion of the *Facing Teaching* reading (part of the Facing Project)
6. Discussion of the course's essential question
7. Discussion of emotions
    a. What excites you about participating in this course?
    b. What are you anxious about?

Week 2 activities

1. Housekeeping
    a. Confirm training and background checks are completed
2. Discuss community partners
    a. Explore possible interactions with each
3. Discussion of Computer Science and inclusive pedagogy articles
4. Discuss the next possible steps
5. Conduct a team building activity

Week 3 activities

1. Housekeeping
    a. Confirm training and background checks are completed

2. Discussion about equity, inclusivity, and implicit bias and how that will impact our efforts this semester
3. Building a schedule for the rest of the semester
4. Discuss how the team will function
   a. How will they hold each other accountable?
   b. How will they communicate between class sessions?
   c. Do they want to operate as a single large team, or split into specialized teams?
5. Identify needed resources (funds, things, people, time)
6. Explain that next week I will become their mentor, not leader, and that they will need to "pick up the reigns" and continue forward.

After week three (sometimes later or earlier, depending on the needs of the group), I let the course participants take the lead and determine what they need to be doing in the short and long term to accomplish the project objectives. This usually results in a week or two of floundering, while they get organized and determine how they are going to productively function as a group. I could step in and force things to go in a given direction, but I'm a firm believer that experience (even a bad experience) is a great teacher. As such, I believe the course participants will learn more about leadership and working as a team if I let them struggle and figure it out on their own. It can be hard for me to watch them make "mistakes," but I know they'll learn from it. Obviously, I do step in and redirect them if they are headed towards disaster.

If a team continues to struggle, I'll might suggest they review and consider adopting [this distributed team methodology](#) developed by a previous student. I may also deliver a short presentation to them about Bruce Tuckman's five stages of group development informed by the work I did for my [master's thesis](#) and later published as [this journal article](#).

Roughly a third of the way through the semester, I ask that we start the first class session of each week with a check-in from every course participant. The prompts are:

1. What have you accomplished since last week?
2. What are you working on now?
3. What do you need to proceed with your work?

This provides a bit of accountability and helps keep everyone informed of what is going on, and how they can help each other be successful.

To provide closure for the project and semester, I provide a meal or /snack (depending on the time of day) during our scheduled final exam time and have the course participants conduct a retrospective of the semester. A description of the process I use is [provided here](#), and includes having the each participant identify events that were good (green in the photos

below), events that were significant or memorable (yellow), and events that were problematic (pink). Each of these three types of events are written on a different color of sticky note. Once the participants have created all their sticky notes, they are asked to place them on a (15-20 foot) long timeline based on when the event occurred. This exercise, due to the color of the stickies placed on the timeline, provides a visual of the ups and downs of the semester, and provides a great conversation starter about how they experienced the semester, and what they learned. The photos below show the two halves of the timeline from the Spring 2025 course.
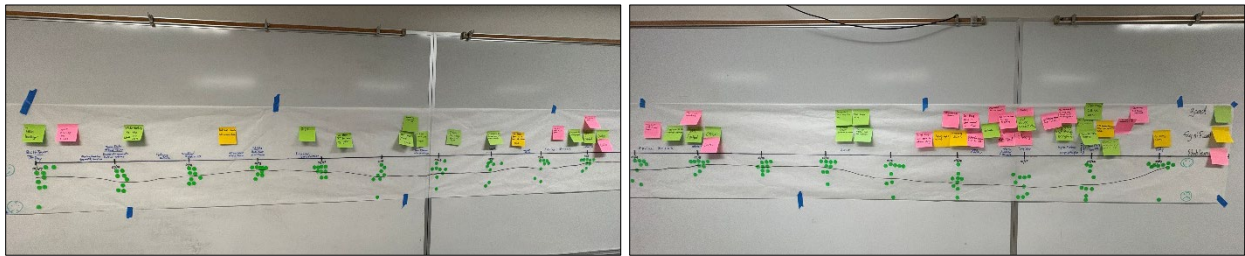
How I assess the participants, both throughout the semester and at the course level

In most of the courses I teach, I utilize specifications grading[1]. However, in this immersive learning course, I use a hybrid of specifications grading and collaborative grading, sometimes referred to as ungrading[2].

The tenets of specification grading are:

- Provide a very clear, detailed description of what is expected
- Evaluate work as complete or incomplete against that specification
- No partial credit, but allow (limited) resubmissions
- Grades are not attached to assignments; the course grade is determined by the number of completes earned

The main premise of collaborative grading is to provide only feedback throughout the semester but not attach a grade to anything. Then, at the end of the semester the learner

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[1] If you want more information about specifications grading, I suggest: Nilson, L. B. (2015). *Specifications grading: Restoring rigor, motivating students, and saving faculty time*. Routledge. (A second edition is due out at the time of this writing.)

[2] If you want more information about ungrading or collaborative grading, I suggest: Blum, S. D. (2020). Introduction: Why ungrade? Why grade? In S. D. Blum (Ed.), *Ungrading: Why rating students undermines learning (and what to do instead)* (pp. 1–22). West Virginia University Press.

presents evidence of their learning (i.e., meeting the established student learning objectives), and suggests what their course grade should be. After a conversation with the learner, they collaboratively establish the learner's course grade.

My hybrid approach includes evaluating assignments with the specifications grading approach, but then I ask the learner to provide evidence and justify their proposed course grade at the end of the semester. I also meet with each learner in the middle of the semester, as well as at the end to discuss their progress.

The assessable items in the course include the following categories. I've provided a brief description of each.

Field visits: You will be asked to interact offsite, onsite, or virtually with our community partners. The field experiences will be determined based on your and the community partner schedules. You are expected to be prepared for all field activities for which you are responsible. I will provide as much prior notice of special events as is practical. Opportunities to "make up" fieldwork will be extremely limited, and you should be aware that any absence will significantly jeopardize your capacity for successful completion of the course.

Essays (3 assigned): A composition that represents an attempt to understand an idea. It should be supported by evidence, with assumptions identified, and claims justified or cited.

Reflective journal entries (7 assigned): You will document and process what you are experiencing and learning. To help with this, you will keep a weekly digital reflective journal wherein you do the following:

- **Document your participation**:
  - What did you do during class to further our goals?
  - What did you do outside of class to further our goals, and how much time (to the nearest hour) did you spend doing that?
- **Course student learning objectives**: Document how your participation in the course relates to satisfying course student learning objectives. Reflect on your field experiences, course presentations, readings, activities, assignments, and discussions. This is not to be a description of what you have done during the week (you provided that above), but rather a thoughtful examination of what you are learning and how it relates to your future work. It should also articulate how your development is represented by your participation.
- **Workforce Competencies**: Identify Workforce Competencies in which you engaged. Throughout the semester you will gain experience in a variety of

Workforce Competencies (see previous table). Reflect on what you have engaged in during the previous week and how they relate to or support these workforce competencies. Describe what you have done to further master these competencies.

There should be at least one entry per week of the course. I will ask you to share your journal with me, however you will not need to share it with other participants.

Mid-semester self-assessment report: A structured reflection report in which you will evaluate how you are doing in the course and reflect on what you need to do during the remainder of the semester to earn the grade you want.

Project deliverables: This course/project is learner-centered and led; I serve in the role of mentor for the project. Within some wide boundaries, what we do to provide solutions to our community partners is up to you and the other course participants. As such, I cannot say what the product of our efforts will be, or what they will look like. But, by definition, we do need a deliverable(s) by the end of our time together.

Final self-evaluation and reflection essay: Like the essays, this will be a composition that represents an attempt to understand an idea. It should be supported by evidence, with assumptions identified, and claims justified or cited. I will also provide an evaluation rubric for you to use for that portion of the assignment. This will also ask you to reflect on the workforce competencies you have developed during the semester.

Appendix

The hyperlinks used throughout the document are provided here.

- CS4MS+ Website: https://www.cs.bsu.edu/cs4ms/
- Distributed Team Methodology: https://joshbirnbaum.github.io/distributed-methodology/
- Facing Project: https://facingproject.com/communities/facing-teaching-in-delaware-county-indiana/
- Facing Teaching: https://facingproject.com/communities/facing-teaching-in-delaware-county-indiana/
- Faculty Guide to HIPs Assessment: https://www.bsu.edu/about/administrativeoffices/vice-provost/student-services/high-impact-practices/faculty-guide-to-hips-assessment
- Largent Journal Article: https://dl.acm.org/doi/10.1145/2791394
- Largent Master's Thesis: https://cardinalscholar.bsu.edu/items/2cf15c6a-3b3a-4634-bcc2-f50760a68c55
- Office of Immersive Learning: https://www.bsu.edu/about/administrativeoffices/immersive-learning
- Office of Risk Management: https://www.bsu.edu/about/administrativeoffices/riskmanagement
- Retrospective Process: https://trello.com/c/zHeiCpz8/49-timeline-retrospective