



# LOYOLA UNIVERSITY CHICAGO

*Preparing people to lead extraordinary lives*

## **TLSC 235/TLSC 421: Teaching Science & Writing in Elementary & Middle School Classrooms**

*Teaching, Learning, and Leading with Schools and Communities*

School of Education, Loyola University Chicago

Academic Year: Summer Semester 2020

### **Instructor Information**

Name: Sara Ivory  
Email: [sivory@luc.edu](mailto:sivory@luc.edu)  
Office hours: By appointment

### **Module Information**

- Dates: June 29 – August 7, 2020
- Days: Weekly Assignments Updated Each Monday on Sakai
- Time: Asynchronous (No live meetings)
- On Campus Location: None

### **Module Description**

One way to think about teaching science is to understand science as a culture. People who are scientifically literate can talk, think, act, and identify within the community of science. They understand the beliefs, ways of knowing, and central assumptions that constitute science. They understand how scientific knowledge is constructed, how scientific explanations are developed and communicated, and how science is used – including in engineering design.

Given the emphasis on engineering in the *Framework for K-12 Science Education* and the related Next Generation Science Standards (NGSS), we will also consider how science and engineering are mutually supportive, as well as how they are unique.

As part of this course, we will explore what it means to learn and do science and engineering in different in and out of school contexts. We will also reflect upon the possible implications for teaching science and engineering, and for creating opportunities for all students to participate in these fields.

## Module Goals

### Essential Questions:

- How are science, technology and engineering related; how are they distinct?
- How have the *Framework for K-12 Science Education* and the Next Generation Science Standards (NGSS) impacted science and engineering education?
- How and why can teachers meet the needs diverse learners through acknowledging and building upon their prior experiences, beliefs and values?
- How do teachers integrate, support and assess practical and purposeful writing within the context of science?
- How might informal learning resources support and enhance science and engineering curricula, as well as provide relevancy to student's learning?

As a part of this module, candidates will understand that effective educators:

- Maintain and utilize global perspectives and international-mindedness when engaging in teaching, learning and leading, including the awareness and application of the social, cultural, inter-cultural and linguistic facets of student achievement.
- Use research and evidence-based practices to design instruction that includes the alignment of goals, objectives, assessments and instructional strategies to meet the individual needs of students.
- Apply deep understanding of both content and pedagogy to provide developmentally appropriate instruction to all students.
- Explicitly integrate the teaching of reading, writing, communication and technology across content areas.

As a part of this module, candidates will:

- EU3 K1 Identify what constitutes research and evidence-based practices related to designing and implementing instruction. (c1G) (IB)
- EU3 K2 Explain the scope and sequence in relevant standards (NGSS, CCSS). (c1A)
- EU3 K3 Explain how to adjust scope and sequence in standards-based curriculum maps to meet the needs of diverse learners. (c1A) (IB)
- EU3 S1 Consult academic texts or journals to read current research on designing instruction (i1A) (IB)
- EU 3 S2 Incorporate research and evidence-based practices into the design of instruction. (e2K, i1A) (IB)
- EU3 S3 Use standards-based curriculum maps to design units and lessons to meet the needs of diverse learners. (c2J, c2B) (IB)
- EU 3 S8 Select relevant instructional content, materials, resources and strategies for differentiated, universally designed instruction and sheltered instruction. (c2J, e2G) (IB)
- EU6 K1 Describe the important facts and central concepts, principles, and theories associated with their certified content areas. (b1B, b1G)
- EU6 K2 Identify the content standards and the scope and sequence of the subject area of their certified content areas. (b1B)
- EU6 K3 Describe how their subject is related to other disciplines. (b1D) (IB)
- EU6 K7 Describe content-specific instructional strategies.

- EU6 K9 Describe how to conduct and interpret appropriate content specific assessments. (g1A, g1G)
- EU6 S1 Integrate connections between their content area and the other content areas. (b2F, c2E) (IB)
- EU6 S2 Use students' prior knowledge and experience to introduce new subject-area related content. (a2B, b1G, c2D) (IB)
- EU6 S5 Create and select activities that are designed to help students develop as independent learners and complex problem-solvers. (a1B, e2A, e2D) (IB)
- EU6 S6 Evaluate, select, and integrate a variety of research-based strategies such as inquiry, cooperative learning, discussion, discovery, problem-based learning, and direct instruction into a coherent lesson design. (c2], e2A, i1A) (IB)
- EU6 S7 Make developmentally appropriate choices in selecting teaching strategies to assist diverse learners in meeting instructional strategies. (a2C, b1E) (IB)
- EU6 S9 Demonstrate the ability to recognize and value student diversity and the differences in how students learn and provide instruction to accommodate such diversity. (a1A, a2A, b2E, b1E, c2], e2E) (IB)
- EU6 S10 Use questions and questioning to assist all students in developing skills and strategies in critical and high-order thinking, inquiry, and problem solving. (b2C) (IB)
- EU6 S11 Use resources and multiple representations of content effectively, including technology, to enhance student learning. (b2A, b2B, b2D, b2E, b2G) (IB)
- EU6 S12 Reflect and analyze past lessons to improve in the future. (i2C) (IB)
- EU 8 S6 Prepare students to critically and creatively respond to text dependent issues and questions orally and in writing. (f2G, f2])
- EU8 S10 Design curriculum and instruction that guides students to write informative/explanatory texts that analyze complex ideas; to write narratives that present real or imagined events that utilize effective technique, well-chosen details, well-structured event sequences, and standard conventions. (f2G)
- EU8 S11 Engage students in inquiry-based research supported by specific evidence to develop research, writing and argumentation skills (b2H, f2G)
- EU8 S12 Utilize a variety of technological tools and skills to support literacy instruction and personal communication skills, including but not limited to computers, cameras, interactive web sites, blogs, online research. (b1F, b2D, b2G, e2F, e2G, i2K, i2L)
- EU11 S7 Engage in different ways of knowing within or across various disciplines. (b2B) (IB)

### **IDEA Objectives:**

- Gaining factual knowledge (methods)
- Learning how to find and use resources for answering questions or solving problems
- Learning to apply course material in the classroom setting
- Developing specific skills, competencies, and points of view needed by professionals in the field

## Conceptual Framework and Conceptual Framework Standards

The Loyola School of Education Conceptual Framework states that: Our mission is social justice, but our responsibility is social action through education.

As teachers, we recognize our connection to students as individuals and as members of a larger community. We serve others (students as well as families and communities) by creating experiences that encourage creative, moral and intellectual development. Leaders in our classrooms and larger school communities, we must consider how education can be transformational and how we might be agents of change. In this course sequence, we will explore what it means to hold high expectations for all learners that include academically challenging, personally and socially relevant knowledge and complex learning skills. In order to successfully provide opportunities for youth to meet these expectations, we must also be committed to reflecting on our own practice and to continually developing our own knowledge, skills and professional dispositions.

## Dispositions Assessment

*Candidates commit to the following dispositions:*

**Inquiry:** Candidates use discipline-recognized processes for generating new knowledge in order to expand their theoretical understandings, ability to solve problems and analyze programs. They will deepen their personal understandings, improve their practice, and apply their learning about communities, families and students. Candidates will draw upon or collect various forms of data and information including literature, quantitative and qualitative data, formal and informal assessments, information about students, families and communities, and personal reflection when generating new knowledge. Candidates use their inquiry-based generated knowledge using multiple sources to inform their instruction and promote learning for all.

**Social Justice:** Candidates adopt a stance of affirming and welcoming diversity in both local and global communities. They demonstrate respect for and understanding of differences across and within groups through their spoken and written course contributions as well as in the actions they take. Candidates promote social justice by taking ethically guided actions to challenge practices and policies that promote or perpetuate injustices and inequities. Candidates demonstrate their commitment to continuing to develop their understanding around issues of diversity. They further demonstrate their commitment to contribute to the work of preventing and/or undoing injustices by advocating for individuals, populations, or groups who currently are, or have historically been, oppressed and marginalized through covert and overt practices on the part of institutions or individuals.

**Professionalism:** Candidates demonstrate personal responsibility and agency by engaging in proactive problem resolution and conflict management. Candidates promote their own development and the development of others and engage in collaborative relationships that promote mutually beneficial outcomes. Candidates adhere to ethical practices, guidelines, and professional standards of their profession.

Each sequence and module in the *Teaching and Learning with Schools and Communities Program* (TLLSC) focuses on specific professional dispositions and candidates are offered opportunities to receive feedback

on their dispositional growth. The teacher candidate commits to appropriate professional and interpersonal behaviors in this module by:

- o demonstrating professionalism and reflective practice in collaborating with teachers, students, administrators, families, and communities to improve achievement for all students. (9N) (IB) (D4)
- o participating in ongoing professional development, reading, and research in order to deepen their knowledge and expand their repertoire of skills. (9O) (IB) (D5)
- o valuing and utilizing the unique identities and backgrounds of all students, families and communities as essential assets in learning environments. (9L, 9N) (IB) (D7)
- o demonstrating that authentic literacy instruction is the responsibility of all teachers, across all disciplines and grade levels. (2H, 6A) (IB) (D9)
- o valuing and promoting curiosity, creativity, and life-long learning in students. (IB) (D15)

### **Attendance**

- Candidates are expected to attend every module session for the scheduled duration as to maintain consistency for students and school professionals. Ask your professor and cooperating classroom teachers(s) how they wish to be contacted regarding any special circumstances. Make arrangements and notify everyone involved before a scheduled absence.
- Inform your professor and classroom teachers(s) ahead of time by phone message or e-mail if you must be absent. If there is an emergency, contact your professor as soon as reasonably possible afterward.

### **Participation**

Candidates are expected to attend all classes, demonstrate a professional attitude and demeanor, arrive promptly to learning sites, come prepared for class with assignments and required class materials, contribute constructively to the class, integrate readings into class assignments and activities, listen respectfully and incorporate and build from others' ideas. Participation will make up 10% of your final grade and is assessed using the rubric in LiveText.

### **Required Readings/Texts**

- ▣ Settlage, J., Southerland, S. A., Smetana, L.K., & Lottero-Purdue, P. (2017). *Teaching science to every child: Using culture as a starting point, 3<sup>rd</sup> Edition*. Taylor & Francis. (Digital Copy available via Loyola Library)
- Other required readings and resources will be printed and distributed or posted on the Sakai site for the course.

### **LiveText**

All students, except those who are non-degree, must have access to LiveText to complete the benchmark assessments aligned to the Conceptual Framework Standards and all other accreditation, school-wide and/or program-wide related assessments. You can access more information on LiveText here: [LiveText](#)

### Course Evaluation:

All assignments will be graded using the rubrics posted on Sakai and LiveText throughout the semester.

### REQUIREMENTS FOR ALL WRITTEN ASSIGNMENTS

- Unless otherwise instructed, all written assignments completed outside of class must be double spaced, with one inch margins, word-processed in Times New Roman or Arial, 12 point font, and saved electronically.
- Unless otherwise noted, **all assignments should be turned in via Sakai by 5pm on the Sunday evening before the next Monday's weekly learning is posted.** This will allow time for assignments to be viewed before our next week's learning is finalized. If there is any issue submitting through Sakai, email the assignment before the 5pm deadline.
- Shared files must be named using the following format: **LastName\_AssignmentName**
- When quoting or paraphrasing course readings, please use in-text citations, also known as parenthetical citations (Author, Date, Page). You will not need a full reference list, since these are course readings.
- Other references should be cited where applicable, following American Psychological Association style guidelines (APA – 6th edition). Please access the APA style manual through Loyola libraries or online at <http://www.apastyle.org>
- Written assignments will be graded for accurate mechanics and English grammar usage as well as thoughtful, pertinent, and clear content. Please take advantage of the Loyola Writing Center for assistance. <http://www.luc.edu/writing/>

***Assignments must be submitted on time. You will be penalized for any late work. If an emergency situation arises you must email your professor before the assignment is due. Technology issues, however, are not an excuse for late work.***

### Course Summative Assessment

At the conclusion of the semester, candidates will present a portion of their completed storyline projects as a summative assessment with the goal of synthesizing material from TLSC 231/TLSC 421. The summative assessment will count toward the final grade in this course.

### Grading Policy and Scale

The final grade is based upon the completion of course requirements, as weighted below and following this scale:

93% - 100%	A	87% - 89%	B+	77% - 79%	C+	67% - 69%	D+
90% - 92%	A-	83% - 86%	B	73% - 76%	C	63% - 66%	D
		80% - 82%	B-	70% - 72%	C-	62% and Below	F

**Loyola University Chicago**  
**School of Education**  
**Syllabus Addendum**

**Smart Evaluation**

Towards the end of the course, students will receive an email from the Office of Institutional Effectiveness reminding them to provide feedback on the course. They will receive consistent reminders throughout the period when the evaluation is open, and the reminders will stop once they have completed the evaluation.

- The evaluation is completely anonymous. When the results are released, instructors and departments will not be able to tell which student provided the individual feedback.
- Because it is anonymous and the results are not released to faculty or departments until after grades have been submitted, the feedback will not impact a student's grade.

**Dispositions**

All students are assessed on one or more dispositional areas of growth across our programs: ***Professionalism, Inquiry, and Social Justice***. The instructor in your course will identify the dispositions assessed in this course and you can find the rubrics related to these dispositions in LiveText. *For those students in non-degree programs, the rubric for dispositions may be available through Sakai, TaskStream or another platform.* Disposition data is reviewed by program faculty on a regular basis. This allows faculty to work with students to develop throughout their program and address any issues as they arise.

**LiveText**

All students, *except those who are non-degree*, must have access to LiveText to complete the benchmark assessments aligned to the Conceptual Framework Standards and all other accreditation, school-wide and/or program-wide related assessments. You can access more information on LiveText here: [LiveText](#).

**Syllabus Addendum Link**

- [www.luc.edu/education/syllabus-addendum/](http://www.luc.edu/education/syllabus-addendum/)

**Center for Student Access and Assistance (CSAA)**

*Should you encounter an unexpected crisis during the semester (e.g., securing food or housing, addressing mental health concerns, managing a financial crisis, and/or dealing with a family emergency, etc.), I strongly encourage you to contact the Office of the Dean of Students by submitting a CARE Referral for yourself or a peer in need of support: [www.LUC.edu/csaa](http://www.LUC.edu/csaa). If you are uncomfortable doing so on your own, please know that I can submit a referral on your behalf.*

This link directs students to statements on essential policies regarding *academic honesty, accessibility, ethics line reporting* and *electronic communication policies and guidelines*. We ask that you read each policy carefully.

This link will also bring you to the full text of our conceptual framework that guides the work of the

#### Privacy Statement

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.