Introduction to the Capstone

The capstone experience is a culminating experience. The experience will allow for the synthesis of skills and knowledge acquired through the completion of core courses and licensure courses complete in the program. Your capstone project may take the form of a curriculum project, literature review, research project or creative project. The four options are described below.

Project Options

Curriculum Project

A curriculum project is an opportunity for you to develop a unit of study that showcases your pedagogical content knowledge for your future teaching. Choosing a curriculum project as your capstone allows you to develop your practical knowledge with regard to your teaching philosophy, instructional interests, and target teaching population for your future teaching. This curriculum project is not bound by the confines of your student teaching and although the practical knowledge developed from your study will influence the development of your teacher work sample it cannot take the place of your teacher work sample. Instead this curriculum project is a unit that distinguishes you as a future educator—both in being able to speak about curriculum design in job interviews and when implementing the unit in your first teaching position. As a unit of study, your curriculum project includes a literature review of 5-7 peer reviewed journal articles as well as various lessons that strategically build towards a larger instructional focus. With input from your faculty sponsor, you identify your instructional focus. Your final product is a cohesive instructional unit with a series of lessons (detailed plans, materials, and a projected implementation timeline) in which you demonstrate your professional knowledge of standards (whether a focus on content and/or learning standards), learning theory (such as universal design of learning), instructional methods (including best practices), and assessment (both formative and summative). The “length” of your unit is shaped by the context you define for its possible implementation as well as the nature of what you want your future students to learn. For example, an interdisciplinary unit might focus more intensely across two weeks with lessons occurring in various content areas, a strategy-based unit might include daily modeling and application that builds over a month, and an inquiry-focused unit (such as in the sciences) might be structured for long-term learning across a semester although with fewer lessons per week.

Literature Review

A literature review is an opportunity for you to refine your understanding of a topic or issue that is of particular interest to you for your future teaching. With input from your faculty sponsor, you will define a “research question.” However, instead of conducting your own research, you are asking: What does current, research-based literature tell me about_________? To answer your question, you will be locating, reading, critiquing, and synthesizing a minimum of 20 research-based articles that are published in peer-reviewed journals that are relevant to your discipline (special education or elementary education). Your literature review begins by introducing your research question and developing a persuasive rationale for why your topic is relevant not only for you but for other educators. Typically, you then define key concepts related
to your research question. Your synthesis of the 20+ articles is organized by themes and patterns that you notice across the studies. You conclude your literature review by discussing the implications and limitations of these studies (in essence, you say answer “so what” does this all mean for teaching and what should be considered next). Your final product for this capstone would be a 10-15 page paper. This capstone project allows you to clarify your knowledge of a particular subject and develop your knowledge of research-based teaching. In an era of research-based educational mandates, this project allows you to refine your knowledge of and ability to critique research. This can serve to distinguish you in how you answer particular questions in your future job interviews and your instructional choices and peer collaborations in your future teaching.

Research Project

In a research project, you situate yourself as an educator who learns from and in a specific educational context with a specific population. Most likely, the context will be related to your student teaching, whether in the classroom where you student teach or perhaps through involvement in some afterschool venue. With input from your faculty sponsor, you define a research question that is focused on some aspect of teaching and/or learning and which can be explored within the timeframe of one semester. You answer this question by systematically collecting appropriate “data” (field notes, interviews, surveys, think aloud protocols, student artifacts, etc.). This capstone project requires that you obtain Institutional Review Board (IRB) approval—a process that you should initiate before you begin your student teaching, as you must await IRB committee approval.* Your IRB proposal is the first of two products that you submit for this capstone. The second is a 10-15 page paper in which you summarize your research. This includes introducing your research question, a persuasive rationale, a literature review in which you highlight 5-7 research-based articles or other scholarly work that informed your study, a summary of your research methods, presentation of your results, and a discussion of your study’s implications and limitations. This capstone project allows you to identify as a critically reflective educator who systematically considers the impact of pedagogical choices. Note: If conducted in your student teaching placement, there may be slight overlap between your research project and your Teacher Work Sample (TWS), most likely as you describe your research population and context. However, the unit that you implement for your TWS will not serve the purpose of this research project.

Creative Project

A creative project includes a literature review of 5-7 peer reviewed articles on the topic of interest, a written summary of the initial conceptualization of the project, and a final project that includes specific elements determined collaboratively by you and your capstone supervisor. The creative project can be a new program that you will implement with students such as an after school chess club or an aesthetic representation of what has been learned such as a book, play, or visual art piece. If implementing a program you would have a summary of your program, a statement of understanding signed by you and your principal, and a parent permission form (to be signed before a student participates). The final project then might be the curriculum designed for the program and a timeline (for example in a chess club what particular moves you would teach and when and how you would run the chess games) and a poster presentation of your
program. If you are creating an aesthetic representation of what you have learned from either a specific activity involving your students or the student teaching experience as a whole then as well as your creative representation you might write a reflective journal on how it was conceptualized and what the process was like or create a power point presentation that could be used to inform others and/or be presented at a conference.

*Students who wish to complete a research project are strongly encouraged to submit the IRB proposal one semester prior to the capstone semester. The review process can be lengthy. Please use the following link to access IRB information for MSU Denver. [http://msudenver.edu/irb/](http://msudenver.edu/irb/)*
Directions and How to Outline

Title: The title should convey the intent of the proposed project. The title can be a working title that can be changed at a later date.

Introduction: The introduction clearly communicates the purpose of the project. It must include details regarding background, significance, and purpose setting. The introduction:

- Clearly states the purpose of the study
- Contains sufficient background information to provide the reader with an understanding of the context and significance of the question/problem you are trying to address
- Provides acknowledgement of the previous work on which you are building
- Delineates major issues related to the problem or need (which will be discussed and analyzed in the literature review)
- Makes it obvious where the old contribution ends and the new contribution begins
- Clearly delineates how the project will enhance student achievement

Rationale: The rationale states the purpose of the project. The rationale should:

- Contain a brief review of the research that led you to the topic of your project.
- Include a discussion of the existing literature to which your project will contribute.
- Identify gaps in existing knowledge as well as outline the importance of your project.

Literature Review: The form, content, or style of a literature review will vary by topics and project types. Most reviews have the following elements:

- Begins with an outline as to what will be considered in the review.
- Justifies criteria for inclusion and exclusion in the review.
- Includes summaries, synthesis and critiques of current, research based, peer-reviewed references that strongly support the statements of the problem or project
- Elaborates on important reviews and synthesizes less important reviews
- Ends with a summary that validates the problem and approach to the study/project
- Clearly distinguishes what has been done from what needs to be done
Methodology: The methodology is clearly presented with a strong narrative that is descriptive and provides specific details about what occurred during implementation. The methodology should:

- Begin with a statement of purpose and clear questions
- Define individuals who were studied and includes co-researchers or collaborators
- Indicate the participants’ setting or the study context
- Explain techniques or tools used to measure, observe, examine, describe, or document results
- Briefly defend instruments used or developed, including validation procedures as appropriate
- Refer the reader to appendices for copies of instruments as appropriate, such as surveys, interviews, tests, etc.
- Describe the methods or process used to accomplish the given tasks
- Provide a timeline or log of major events as appropriate for understanding
- Include informed consent and IRB approval process as appropriate
- Be explicit enough for someone else to replicate the study
- Describe research design and methods used for examining quantitative and/or qualitative data
- Justify the selection of methods used to evaluate results

Results: The results should summarize the data. Results must be accurate and appropriately linked to the problem and methodology. The results should:

- Begin with a lead-in paragraph or two that restates the purpose and/or questions and leads the reader to anticipate the findings that will be addressed in this section
- Report results using narrative that is explanatory but not interpretive
- Utilize tables as described in APA 6 manual
- Utilize figures (charts, graphs, photographs, drawings, or other depictions) according to APA 6 manual
  - These figures should tell the reader what to look for in tables and figures, and provide sufficient explanation to make them readily intelligible
  - Use tables or figures as supplements to the narrative, especially to support complex information
  - Utilize appropriate headings as needed to guide the reader
  - Place supportive data that is valuable but not essential to the results section in appendices, such as baseline or raw scores that are not pertinent to specific analysis.
- End with a summary, conclusion, or transition to the analysis section.
**Analysis:** The analysis conducts a thorough analysis and/or reflection of information and synthesizes it into new knowledge. The analysis should advance a judgment that is interpretive, analytical, evaluative, and connects to the literature review. The analysis should:

- Begin with a lead-in paragraph that previews the discussion to follow
- Detail the importance of the information previously provided
- Be interpretive, focusing on why the results are important
- Point out results, findings, and/or accomplishments that were consistent or inconsistent with the literature review
- Provide a reflective hypothesis or possible explanation supportive of the results
- Make reference to limitations and implications which will be addressed in the discussion section
- Address practical or theoretical significance
- End with a conclusion or summary that recaps or synthesizes answers and findings and the importance of those findings. Conclusions may refer to what should happen next and provide closure for the reader.

**Limitations:** Limitations relate to the ability to draw conclusions from sample data about a larger group. Limitations may include:

- **Sample size:** if the sample size is too small it may be difficult to find relationships from the data
- **Lack of available and/or reliable data:** describe the reasons you believe the data is missing or unreliable
- **Measure used to collect data:** the way in which you gathered data might have prevented you from conducting a thorough analysis of the results
- **Access:** access to people, organizations, or documents may have been denied or limited

**Implications:** Implications should comment on the need for future research and provide a persuasive argument for next steps relative to the purpose of the project. Implications may include questions such as the following:

- What will the results mean to the practicing educator?
- How will the results influence programs, methods, and/or interventions?
- What will be improved or changed as a result of the project?

**Formatting:** Include a table of contents, table of tables, lists of figures, appendix, and references in APA 6 format.
# Capstone Rubric

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Due Date*</th>
<th>Target</th>
<th>Acceptable</th>
<th>Unacceptable</th>
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<tbody>
<tr>
<td>Proposal</td>
<td>Proposal makes strong case for the rationale, literature review, methodology (population, specific plans, proposed timelines), proposed method of analysis, limitations, and value the capstone provides to the discipline, as well as presenting its nature and structure.</td>
<td>Proposal makes a case for the rationale, literature review, methodology (population, specific plans, proposed timelines), proposed method of analysis, limitations, and value the capstone provides to the discipline, as well as presenting its nature and structure but lacks specifics.</td>
<td>Proposal does not make a case for the rationale, literature review, methodology (population, specific plans, proposed timelines), proposed method of analysis, limitations, and value the capstone provides to the discipline, as well as presenting its nature and structure.</td>
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Product contains the following information as applicable:

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<tr>
<td>Introduction</td>
<td>Introduction is clear, concise and effectively communicates the purpose of the project. Presents the specific problem of the study and the proposed strategy.</td>
<td>Introduction is somewhat clear and generally communicates the purpose of the project. Presents the general problem of the study and the proposed strategy.</td>
<td>Introduction is unclear, not concise and vaguely communicates the purpose of the project. Does not present the specific problem of the study and the proposed strategy.</td>
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<tr>
<td>Rationale</td>
<td>Rationale is focused, with clear purpose, strongly grounded in literature and states contribution to the field. Claims are supported by literature.</td>
<td>Rationale is partially focused, shows some purpose, some clarity. Reader is left with questions regarding the contribution. Is partially grounded in literature.</td>
<td>Rationale is not focused, with no clear purpose. Is not strongly grounded in literature and does not state contribution to the field. Claims are not supported by literature.</td>
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<td>Literature review</td>
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<td>Review includes summaries, synthesis and critiques of current research based, peer-reviewed references that strongly support the statement of the problem or project and all the components of the proposed methodology.</td>
<td>Review includes some summaries, synthesis and critiques of current research based, peer-reviewed references that support the statement of the problem or project and all the components of the proposed methodology. Reader is left with questions regarding literature review.</td>
<td>Review includes limited summaries, synthesis and critiques of current research based, peer-reviewed references that minimally support the statement of the problem or project and all the components of the proposed methodology.</td>
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<tr>
<td>Methodology</td>
<td></td>
<td>Methodology is clearly presented with a strong narrative that is descriptive and provides specific details about what occurred during implementation. Includes conceptual and operational definitions.</td>
<td>Methodology is presented with a narrative that is descriptive and provides some details about what occurred during implementation. Includes some conceptual and operational definitions.</td>
<td>Methodology is not clearly presented with a narrative that is descriptive and provides no specific details about what occurred during implementation. Does not include conceptual and operational definitions.</td>
</tr>
<tr>
<td>Results</td>
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<td>Results summarize the data. All relevant results are mentioned and supported with specific examples provided as appropriate. General trends are noted. Results are accurate, appropriately linked to the problem and methodology.</td>
<td>Results summarize some of the data. Most relevant results are mentioned and supported with specific examples provided as appropriate. Some general trends are noted. Most results are accurate, appropriately linked to the problem and methodology.</td>
<td>Results do not summarize the data. Relevant results are not mentioned and supported with specific examples provided as appropriate. General trends are not noted. Results are not accurate, nor appropriately linked to the problem and methodology.</td>
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<td>Analysis</td>
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<td>Conducts a thorough analysis and/or reflection of information and synthesizes it into new knowledge. Advances a judgment that is interpretive, analytical, evaluative, and connects to the literature review. Is linked to examples from the results. Suggests why the results are important.</td>
<td>Conducts an analysis and/or reflection of information and synthesizes it into new knowledge. Generally advances a judgment that is interpretive, analytical, evaluative, and connects to the literature review. Is somewhat linked to examples from the results. Makes some suggestions as to why the results are important.</td>
<td>Does not conduct a thorough analysis and/or reflection of information or synthesize it into new knowledge. Does not advance a judgment that is interpretive, analytical, or evaluative, and does not connect to the literature review. Has not linked examples from the results. Has not suggested why the results are important.</td>
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<td>Discussion of limitations and implications</td>
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<td>Stated limitations acknowledge and address alternative explanations of the results. Describes, evaluates and interprets implications for practice and future action (research, pedagogy, etc.). Conclusions add to the knowledge base and are extraordinarily insightful in their implications for further study. Provides a persuasive argument for next steps relative to the purpose of the project.</td>
<td>States some limitations and acknowledges and addresses some alternative explanations of the results. Describes, evaluates and interprets some implications for practice and future action (research, pedagogy, etc.). Conclusions add to the knowledge base and are insightful in their implications for further study. Provides an argument for next steps relative to the purpose of the project.</td>
<td>Stated limitations do not acknowledge and address alternative explanations of the results. Does not describe, evaluate and interpret implications for practice and future action (research, pedagogy, etc.). Conclusions do not add to the knowledge base and are not insightful in their implications for further study. Does not provide a persuasive argument for next steps relative to the purpose of the project.</td>
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<td>Quality of writing and APA</td>
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<td>Writing adheres to all guidelines of the APA (latest edition). Writing is organized and coherent. Demonstrates strong control of academic language and grammar.</td>
<td>Writing adheres to almost all guidelines of the APA (latest edition). Writing is somewhat organized and coherent. Demonstrates control of academic language and grammar.</td>
<td>Writing adheres to some guidelines of the APA (latest edition). Writing is not organized and coherent. Does not demonstrate strong control of academic language and grammar.</td>
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<tr>
<td>Poster Session Presentation</td>
<td></td>
<td>Clearly presents ideas and information. Answers questions coherently and completely.</td>
<td>Clearly presents ideas and information. Answers most questions coherently and completely.</td>
<td>Does not clearly present ideas and information. Answers some questions coherently and completely.</td>
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