Instructional Trends in Science Education  
(SIED 6310 [16782]/TED 5319[16783], 2016 Fall)  
Revised on Aug 20, 2016

Department of Teacher Education  
College of Education  
University of Texas at El Paso

Class meeting time: Wednesdays, 5:30 pm –8:20 pm  
Class meeting place: Room 405, UTEP Education Building  
Instructor: Dr. Pei-Ling Hsu  
Office: Room 606, UTEP Education Building  
Phone: (915) 747-6446  
E-mail: phsu3@utep.edu  
Office Hours: 2:30pm-5:30pm on Wednesdays; by appointments

Course Description  
This course introduces and discusses various science teaching methods, instructions, pedagogical practices in science classrooms and various aspects of student learning in science. Learning to use research-based instructions to design an innovative science curriculum that can address real issues in order to improve current practice is at the core of this course. As a result, students will be able to learn, evaluate, and design research-based science curriculum and practices for students.

Student Learning Outcomes:  
The course is designed to help students to become competent science educators who can design research-based curriculum and instructions for their students. At the end of the course, successful students will be able to:

1) Explain and appreciate various research-based pedagogical practices of science teaching  
2) Understand and apply research-based knowledge and skills  
3) Identify and evaluate various resources to support effective science teaching  
4) Understand and apply standards for teaching science (TEKS, Next Generation Science Standards)  
5) Design a quality science education curriculum  
6) Develop the ability to engage students in science activities  
7) Collaborate with other educators to create the best learning opportunities for their students  
8) Enact critical thinking on curriculum and science teaching activities

* Assessment of course objectives will be accomplished by assessing the student’s course assignments and participation.

Readings and Reflections


* Additional readings will be made available in classes. These documents play key roles in guiding your assignments and projects. Changes may be made in classes. Please make sure you read these documents in time.

Resources
- Blogger: http://www.blogger.com
- National Academies Press: http://www.nap.edu/
- Informal Science: http://informalscience.org/
- CAISE (Center for Advancement of Informal Science Education): http://caise.insci.org/
- Informal Science Education Evidence Wiki: http://iseevidencewiki.org/index.php/Main_Page
- Texas Education Agency (TEA): http://www.tea.state.tx.us/index.aspx?id=6148
- Texas Essential Knowledge and Skills (TEKS): http://www.tea.state.tx.us/index2.aspx?id=6148

Assignments
1. Knowledge Enrichment (68%)
   In this course, each student will read NGSS, about 16 articles on science teaching instructions, analyze cases, and create a public blog (e.g., Blogger [http:// www.blogger.com], WordPress [http:// wordpress.org]) to record his or her learning journey in this course. Each student can also produce and collect all kinds of relevant information in their blogs.

   (1) Blogging Reading Reflection 1-6 (18%, each reflection is worth 3%)
   Each student will post six reflections of corresponding reading (Reading 1, 2, 3, 4, 5, and 6) in his/her blog according to the schedule. Reflection 1 includes a minimum of 500 words to discuss the following two questions: (1) Why new science standards? Why now? (2) What are some unique features of NGSS that are different from previous standards? For the reflection 2-6 (minimum 500 words for each reflection), each reflection should include (1) summary of the reading, (2) ideas for possible proposals, (3) concerns and questions for the readings or proposals. Each reflection should cite at least one reference and post the reference at the end of each reflection. The titles for the reflection posts should be “Course assignment - Reflection 1,” “Course assignment - Reflection 2,” etc.

   (2) Responses to Other Classmates’ Blogs on the Six reflections (18%, each response is worth 1%)
   The instructor will post students’ blog address in Blackboard. Each student will respond to at least 3 other classmates’ reflections bi-weekly. Each response should: (1) identify merits, (2)
suggest ideas for improvements, and (3) end the response with a question. Each week (for reflection 1, 2, 3, 4, 5, & 6), each student will choose 3 different classmates’ blogs to respond each time. The due time for responses each week is every other Monday at 8:00am and the minimum of a response is 100 words. A record of these responses will be posted and updated in Blackboard. Students should check the record regularly and let the instructor know immediately if there is any question about the updated record.

(3) **Case paper strength or critique presentations (32%)**

Each student will have 4 presentations (2 strength presentations and 2 critique presentations) in total in the semester. The most updated presentation schedule can be found in Blackboard.

a. **Case strength presentation (10%)**

i. **Case paper (1%)**

Each student will select one case paper that demonstrates an “exemplary” case for that week’s topic (i.e., conceptual change, 5E model, science inquiry, problem-based learning, service learning) and submit the case paper to the corresponding assignment section in Blackboard one week before his/her case strength presentation. The instructor will follow the schedule and post these case papers in Blackboard no later than one week before the strength and critique presentations. If the scheduled student does not submit his/her case paper on time, the instructor will select and post the instructor’s case paper in Blackboard. Students’ strength analysis and critique analysis for that week will analyze the instructor’s case paper (instead of case papers selected by students). The case paper should contain “empirical evidence” to these instructional methods (i.e., conceptual change, 5E model, science inquiry, problem-based learning, service learning). An exemplary case paper usually includes topic related curriculum, topic related applications, explanations of topic use, evidence/data to show the effectiveness of the project, reflections and discussions to improve the use of the topic.

ii. **Case strength analysis (2%)**

Each student will analyze the case paper selected and identify its “merits” using “Template01-Case Strength Analysis”. The case strength analysis should include a summary of the case paper, at least 10 points/insights for the case paper’s strengths, and at least 5 references cited. The “case strength analysis” (minimum 500 words) should be submitted to the corresponding assignment section in Blackboard.

iii. **Case strength presentation and discussion about the instructional method (7%)**

Each student will present and lead the class to discuss topic-relevant conversations for case papers in classes. The presentation and discussion (40-50 minutes) should be able to address three questions: (1) “what is this particular instructional method (i.e., conceptual change, 5E model, science inquiry, problem-based learning, service learning)?” (2) “how did the project in the case paper implement this instructional method?” (3) “what are the 5 ‘strengths’ of this instructional method used by the project presented in the case paper?” The student may use various forms (e.g., videos, group activities, discussions, mock teaching) to lead the class to discuss these 3 key questions. A powerpoint file should be submitted to the corresponding assignment section through the Blackboard system and a paper-copy (3 slides per page) of this powerpoint file should be handed in to the instructor before the class on their presentation day.

b. **Case critique presentation (6%)**

i. **Case critique analysis (2%)**

Each student will analyze the case paper selected and identify its “weaknesses” using “Template02-Case Critique Analysis”. The case critique analysis should include a summary of the case paper, at least 10 topic related points/insights for the case paper’s weaknesses, ways for improving the case’s use of this particular instructional method, and at least 5 references cited. Each of the 10 points/insights should be supported by at least one quote from scholarly work about this particular instructional method. The
“case critique analysis” (minimum 500 words) should be submitted to the corresponding assignment section in Blackboard.

ii. Case Critique Presentation (4%)

Each student will present his/her critique analysis for case papers in classes. The critique presentation (20-30 minutes) should include at least 10 points/insights for the case paper’s weaknesses on the use of this particular instruction method and ways for improving these weaknesses. Each of the 10 points/insights should be supported by at least one quote from scholarly work about this particular instructional method. A presentation powerpoint file should be submitted to the corresponding assignment section through the Blackboard system and a paper-copy (3 slides per page) of this powerpoint file should be handed in to the instructor before the class on their presentation day.

2. Research-Based Proposal (26%)

In this course, each student will propose a research-based proposal that applies the knowledge learned in the course and addresses at least one of the problems identified at the beginning of the semester.

(1) Project Proposal Draft (8%)

Each student will write a project proposal that corresponds to TEKS and Next Generation Science Standards. Students are encouraged to apply the knowledge learned in readings to propose a research-based project proposal. Each student will apply at least one concept/intervention (i.e., conceptual change, 5E model, science inquiry, problem-based learning, service learning) discussed in the course to design the project proposal. An additional concept/intervention learned from self study should also be incorporated in the proposal. Each student will propose a research-based project that at least has one collaborator (e.g., teacher, staff, zoo, museum) and serves at least 10 participants (e.g., students, families) for 40-60 hours to be implemented in 2017 Spring Semester. A project proposal is written to show the rationale and plan for implementing the project. Students are provided with “Template03-Project Proposal Draft” to fill out. The project proposal draft (minimum 2000 words) should be submitted to the corresponding assignment section in Blackboard AND B-email the proposal to all at least one week before the week of “proposal written review”.

(2) Proposal Written Review (6%)

Each student will review two other classmates’ project proposal drafts and will provide feedback (minimum 500 words for each review) for improvements. Students are provided with “Template04-Proposal Written review” to fill out. Each written review may include but not limit to (1) praise for merits, (2) identifications of weakness, and (3) ideas and suggestions for improvements. The project written review should be submitted to the corresponding assignment section through the Blackboard system and AND B-email the written review to all at least one week before the week of “project proposal presentation”.

(3) Project Proposal Presentation (6%)

Each student will present his/her project proposal in classes (20-30 minutes presentation maximum). A presentation powerpoint file should be submitted to the corresponding assignment section through the Blackboard system and a paper-copy (3 slides per page) of this powerpoint file should be handed in to the instructor before the class on their presentation day. The most updated presentation schedule can be found in Blackboard.

(4) Project Proposal: 6%

Students will revise and improve their proposal report drafts according to the feedback they receive from the instructor and the class. Students are provided with “Template05-Proejc Proposal” to fill out. The project proposal (minimum 3000 words) should be submitted to the corresponding assignment section through the Blackboard system in time.
3. **Class Attendance and Participation (6%)**
   Each week, we have different readings and topics for discussions. Students should be prepared and are expected to participate in the classes actively. Students are expected to attend classes on time, finish assignments, and participate in the course professionally. One attendance form will be available to be signed by individual students during the course. **Students who have more than one absence may be dropped with an “F” (Fail).** Students missing a class are responsible for finding help to catch up with the course, complete any exercises, readings, activities, etc.

**Course Requirements:**

1. Besides blogging, all electronic reports should be submitted through the Blackboard system and use WORD files. File names should start with “your name” and end with “the assignment name”. There should be no space in between. Taking the name of “Isaac Newton” for example. Students who do not follow the rules to name files will get a 10% grade reduction.
   1. IsaacNewton-CasePaper
   2. IsaacNewton-CaseStrengthAnalysis.doc
   3. IsaacNewton-CritiqueAnalysis.doc
   4. IsaacNewton-CaseStrengthPresentation.ppt
   5. IsaacNewton-CaseCritiquePresentation.ppt
   6. IsaacNewton-ProjectProposalDraft.doc
   7. IsaacNewton-ProposalWrittenReview.doc
   8. IsaacNewton-ProjectProposalPresentation.ppt
   9. IsaacNewton-ProjectProposal.doc

2. Due time is **8:00AM, Wednesdays** for ALL electronic submissions except responses to other classmates’ blogs (due time: 8:00am, Mondays). Delayed submissions of any assignments will cause grade reductions. One delay day causes 10% reduction of a deserved grade, two delay days causes 20% of a deserved grade, and so on. **All (delayed) assignments have to be submitted before Nov 30.** Grading Evaluations: A (90% - 100%), B (80% - 89%), C (70% - 79%), D (60% - 69%) F (<60%)

3. Each electronic file of assignments should no exceed 10 MB.

4. Students are encouraged to take notes during the course for creating one’s own learning resources.

**Accommodation**

If you have a disability and need classroom accommodations, please communicate your needs to the instructor and contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

**Standards of Academic Integrity**

Students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are not attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures (HOP) and available in the Office of the Dean of Students, may result in sanctions ranging from disciplinary probation, to failing grades on the work in question, to failing grades in the course, to suspension or dismissal among others. You may learn what count as plagiarism in this website: [http://www.plagiarism.org/](http://www.plagiarism.org/)
**Course Schedule:** Changes may be made during the classes. Students should follow the latest changes.

<table>
<thead>
<tr>
<th>No</th>
<th>Date</th>
<th>Topic</th>
<th>Activities</th>
<th>Assignments Due (8:00AM)</th>
</tr>
</thead>
</table>
| 01 | Aug 24  | Syllabus review                | Course Introduction & Review Syllabus                | E: B-email the instructor your Blog address  
E: Post 3 or more teaching practice problems, a picture, a link, a YouTube video on our Blog  
E: Reflection 1 (Blog)  
E: Response 1 (Blog, Due: Sep 05)                                              |
| 02 | Aug 31  | Syllabus test, TEKS, NGSS      | Syllabus test, Blog & Reference activities           | E: Reflection 2 (Blog)  
E: Response 2 (Blog, Due: Sep 12)  
O: Case A Paper (Blackboard)  
O: Case B Paper (Blackboard)                                                  |
| 03 | Sep 07  | Conceptual Change              | Blog discussion                                     | E: Reflection 2 (Blog)  
E: Response 2 (Blog, Due: Sep 05)  
O: Case A Paper (Blackboard)  
O: Case B Paper (Blackboard)                                                  |
| 04 | Sep 14  | Conceptual Change              | Case A: Strength presentation + Critique presentation  
Case B: Strength presentation + Critique presentation | O: Case strength analysis (template 1, Blackboard)  
O: Case critique analysis (template 2, Blackboard)  
O: Strength presentation powerpoint (Blackboard)  
O: Critique presentation powerpoint (Blackboard)                              |
| 05 | Sep 21  | 5E Models                      | Blog discussion                                     | E: Reflection 3 (Blog)  
E: Response 3 (Blog, Due: Sep 26)  
O: Case C Paper (Blackboard)  
O: Case D Paper (Blackboard)                                                  |
| 06 | Sep 28  | 5E Models                      | Case C: Strength presentation + Critique presentation  
Case D: Strength presentation + Critique presentation | O: Case strength analysis (template 1, Blackboard)  
O: Case critique analysis (template 2, Blackboard)  
O: Strength presentation powerpoint (Blackboard)  
O: Critique presentation powerpoint (Blackboard)                              |
| 07 | Oct 05  | Science Inquiry                | Blog discussion                                     | E: Reflection 4 (Blog)  
E: Response 4 (Blog, Due: Oct 10)  
O: Case E Paper (Blackboard)  
O: Case F Paper (Blackboard)                                                  |
| 08 | Oct 12  | Science Inquiry                | Case E: Strength & Critique presentations  
Case F: Strength presentation + Critique presentation | O: Case strength analysis (template 1, Blackboard)  
O: Case critique analysis (template 2, Blackboard)  
O: Strength presentation powerpoint (Blackboard)  
O: Critique presentation powerpoint (Blackboard)                              |
| 09 | Oct 19  | Problem Based Learning         | Blog discussion                                     | E: Reflection 5 (Blog)  
E: Response 5 (Blog, Due: Oct 24)  
O: Case G Paper (Blackboard)  
O: Case H Paper (Blackboard)                                                  |
| 10 | Oct 26  | Problem Based Learning         | Case G: Strength presentation + Critique presentation  
Case H: Strength presentation + Critique presentation | O: Case strength analysis (template 1, Blackboard)  
O: Case critique analysis (template 2, Blackboard)  
O: Strength presentation powerpoint (Blackboard)  
O: Critique presentation powerpoint (Blackboard)                              |
| 11 | Nov 02  | Service Learning               | Blog discussion                                     | E: Reflection 6 (Blog)  
E: Response 6 (Blog, Due: Nov 07)  
O: Case I Paper (Blackboard)  
O: Case J Paper (Blackboard)                                                  |
| 12 | Nov 09  | Service Learning               | Case I: Strength presentation + Critique presentation  
Case J: Strength presentation + Critique presentation | O: Case strength analysis (template 1, Blackboard)  
O: Case critique analysis (template 2, Blackboard)  
O: Strength presentation powerpoint (Blackboard)  
O: Critique presentation powerpoint (Blackboard)                              |
| 13 | Nov 16  | Project proposal               |                                                      | Project proposal draft (template 3, Blackboard, B-Email to everyone)                      |
| 14 | Nov 23  | Project proposal               |                                                      | Proposal written review (template 4, Blackboard)                                         |
| 15 | Nov 30  | Proposal Presentation          | Presentations and discussions                       | Proposal presentation powerpoint (Blackboard)  
Project proposal (template 5, Blackboard)                                        |
Appendixes:

Grading Rubric for Presentations

<table>
<thead>
<tr>
<th></th>
<th>76-100%</th>
<th>51-75%</th>
<th>26-50%</th>
<th>0-25% pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity</td>
<td>The presentation is well-structured, clear and easy to follow</td>
<td>The majority of the presentation is easy to follow</td>
<td>The majority of the presentation is unclear and confusing</td>
<td>The presentation has no structure and difficult to follow</td>
</tr>
<tr>
<td>Fruitfulness</td>
<td>The presentation includes 10 or more points/insights</td>
<td>The presentation includes 7-9 points/insights</td>
<td>The presentation includes 4-6 points/insights</td>
<td>The presentation includes 1-3 points</td>
</tr>
<tr>
<td>Validity</td>
<td>These points are well supported with valid arguments and elaborations</td>
<td>The majority of these points are well-articulated</td>
<td>The majority of these points are not well-articulated</td>
<td>These points are not articulated and not convincing</td>
</tr>
</tbody>
</table>

Grading Rubric for “Project Proposal”

<table>
<thead>
<tr>
<th>A.1. Project title</th>
<th>67-100%</th>
<th>34-66%</th>
<th>0-33%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-The title is intriguing, succinct and represents the project</td>
<td>-The title is intriguing and represents the project</td>
<td>-The title is intriguing but does not represent the project</td>
</tr>
<tr>
<td>A.2. Issues to be addressed in the project</td>
<td>-Identify existing issues or problems</td>
<td>-Identify existing issues or problems</td>
<td>-No identification of existing issues or problems</td>
</tr>
<tr>
<td></td>
<td>-Draw on research-based findings to address the importance of the project</td>
<td>-Loosely draw on research-based findings to address the importance of the project</td>
<td>-Do not address the importance of the project</td>
</tr>
<tr>
<td></td>
<td>-Articulate the potential of the project to address the existing issues and problems</td>
<td>-Articulate the potential of the project to address the existing issues and problems</td>
<td>-The link to research is weak</td>
</tr>
<tr>
<td>A.3. Project objectives</td>
<td>-Concise descriptions of what learners are expected and able to do by the end of the project</td>
<td>-Descriptions of what learners are expected to learn are general. -Most action verbs in the objective statements do not address what learners will be able to “do”</td>
<td>-The description of the learning objectives is vague. -Action verbs in the objective statements do not support meaningful learning. -Fail to show connection with the assessment section.</td>
</tr>
<tr>
<td></td>
<td>-Objective statements include a variety of actions verbs that address what learners will be able to “do”</td>
<td>-Objective statements do not support meaningful learning. -Fail to show connection with the assessment section.</td>
<td>-Objective statements do not support meaningful learning. -Fail to show connection with the assessment section.</td>
</tr>
<tr>
<td>A.4. Intervention - learned in the course</td>
<td>-Describe thoroughly what are the knowledge learned in the course</td>
<td>-Describe superficially what are the knowledge learned through self-study</td>
<td>-Describe superficially how the knowledge learned in the course provides guideline to the project</td>
</tr>
<tr>
<td></td>
<td>-Describe thoroughly how these knowledge apply to the project</td>
<td>-Describe superficially how these knowledge apply to the project</td>
<td>-Describe superficially how these knowledge apply to the project</td>
</tr>
<tr>
<td></td>
<td>-Cite the readings assigned in the course</td>
<td>-Cite the readings assigned in the course</td>
<td>-Cite the readings assigned in the course</td>
</tr>
<tr>
<td>A.5. Intervention - learned through self-study</td>
<td>-Describe thoroughly what are the knowledge learned through self-study</td>
<td>-Describe superficially what are the knowledge learned through self-study</td>
<td>-Describe superficially what are the knowledge learned through self-study</td>
</tr>
<tr>
<td></td>
<td>-Describe thoroughly how these knowledge apply to the project</td>
<td>-Describe superficially how these knowledge apply to the project</td>
<td>-Describe superficially how these knowledge apply to the project</td>
</tr>
<tr>
<td></td>
<td>-Cite self-study readings</td>
<td>-Cite self-study readings</td>
<td>-Cite self-study readings</td>
</tr>
<tr>
<td>A.6. Texas</td>
<td>-Listed standards reflect the grade</td>
<td>-Listed standards reflect the grade</td>
<td>-Project is loosely connected to the project</td>
</tr>
</tbody>
</table>

SIED6310 (CRN18073) & TED5319 (CRN18074) Syllabus, 2015 Fall, Dr. Pei-Ling Hsu 7
| Essential Knowledge and Skills alignment | level, concepts and skills learned in the project  
- There is evidence (i.e., in the assessment section) that student’s learning is linked to the components of the listed standards. | level and the concepts  
- Partial evidence (i.e., in the assessment section) that student’s learning is linked to the components of the listed standards. | the standards. |
| A.7. Next Generation Science Standards alignment | - Listed standards reflect the grade level, concepts and skills learned in the project  
- There is evidence (i.e., in the assessment section) that student’s learning is linked to the components of the listed standards. | - Listed standards reflect the grade level and the concepts  
- Partial evidence (i.e., in the assessment section) that student’s learning is linked to the components of the listed standards. | - Project is loosely connected to the standards. |
| B.1. Collaborators | - Identify at least one collaborator for this project  
- Evidence of support from the collaborators | - Identify at least one collaborator for this project  
- No evidence of support from the collaborators | - No identification of collaborators for the project |
| B.2. Age of participants | - Identify the age range of participants  
- The project is suitable for the age identified | - There are some concerns of the use of the project for this grade | - The project is not suitable for the grade identified |
| B.3. Number of participants | - Engage in at least 10 participants in this project  
- The project is suitable for the number of participants | - Engage in 5-9 participants in this project  
- The project is suitable for the number of participants | - Engage in 1-4 participants in this project  
- The project is not suitable for the number of participants |
| B.4. Participant recruitment plan | - Describe timeline and activities of recruiting participants for this project  
- Activities are logically sequenced, so that learning builds progressively; connections between activities are clearly made | - Describe only timeline or activities of recruiting participants for this project | - Activities do not have a logical sequence. |
| B.5. Timeline of activities | - Time is appropriate  
- Timeline of activities is clearly described  
- These activity relates to the project objectives | - Time is somewhat inappropriate  
- Some inappropriate or inappropriate | - Time is not described or inappropriate |
| B.6. Materials and resources required | - Required materials and resources are clearly listed  
- Reference in procedures are clearly defined as to they are to be utilized | - Most of the required resources and materials are listed.  
- Some reference or clear definition in procedures | - Some citing of resources through the lessons; materials listed but not included in the procedures |
| B.7. Plan to obtain materials and resources | - Describe timeline and activities of obtaining materials and resources for this project | - Describe only timeline or activities of obtaining materials and resources | - No plan description of obtaining materials and resources |
| B.8. Safety considerations | - Safety concerns are discussed; suggestions or solutions for addressing these safety concerns are provided | - Safety concerns are discussed | - Safety concerns are not discussed |
| B.9. Scientific Topics involved | - Topics show sequence and progression.  
- The descriptions of these topics are fully introduced  
- Opportunities are provided for students to link daily work to past and upcoming content/skills. | - Topics show somewhat sequence and progression.  
- The descriptions of these topics are provided  
- Opportunities are provided for students to link daily work to past and upcoming content/skills. | - Topics does not consider the proper sequence and progression  
- No descriptions of these topics are provided  
- No relevant connections to students’ daily life |
| C.1. Formative assessments | - Assessments allows an understanding of students’ learning process for necessary adjustments and improvements  
- There are a variety of assessment practices | - Assessments are linked to objectives and standards.  
- There is no variety of assessment practices. | - Assessment provides little or no evidence for student understanding of the new concept/skill. |
## C.2. Summative Assessments
- Assessments allows an overview understanding of the impact of the project
- Assessment tools are designed to address instructional objectives and standards.
- Assessment practices are engaging and relevant.
- Assessments are linked to objectives and standards.
- There is no variety of assessment practices.
- Assessment provides little or no evidence for student understanding of the new concept/skill.

## D. Reference
- More than 10 references are cited for the project proposal
- Reference sources are formatted in APA style and cited clearly
- Six to ten references are cited
- Reference sources are indicated and cited clearly
- One to five references are cited
- Reference sources are indicated and cited vaguely

## E. Appendixes
- Attach all necessary information that help readers understand the project (e.g., instruments, curriculum, working sheets)
- Attach most of the relevant information that help readers understand the project (e.g., instruments, curriculum, working sheets)
- Attach only part of relevant information that help readers understand the project (e.g., instruments, curriculum, working sheets)

## Mechanics of English
- Appropriate expression of concepts, varied and accurate vocabulary, no errors occur with regards to grammar, conventions and spelling.
- Follow APA format
- Clear expression and vocabulary, some mechanical errors exist but not to get in the way of understanding.
- Have some APA format errors
- Some mechanical errors exist but not to get in the way of understanding.
- Many errors with regards to grammar, spelling, and conventions.
- There is no obvious APA formatting structure