Cutting Edge Approaches to Assessing Student Learning: Undergraduate Research and the Student Transformative Learning Record (STLR)
Vision 2020 Strategic Themes

• Transformative Learning
• Student Success
• Value
• Place
## Comparing TL and HIP

<table>
<thead>
<tr>
<th>Transformative Learning</th>
<th>High Impact Practices</th>
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<tbody>
<tr>
<td>• Discipline Knowledge</td>
<td>• First-year seminars and experiences</td>
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<td>• Leadership</td>
<td>• Common intellectual experiences</td>
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<tr>
<td>• Research, Creative and Scholarly Activities</td>
<td>• Learning communities</td>
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<tr>
<td>• Service Learning and Civic Engagement</td>
<td>• Writing-intensive courses</td>
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<tr>
<td>• Global and Cultural Competencies</td>
<td>• Collaborative assignments and projects</td>
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<td>• Health and Wellness</td>
<td>• Undergraduate research</td>
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<td>• Diversity/global learning</td>
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<td>• Service learning, community-based learning</td>
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<td>• Internships</td>
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<td>• Capstone courses and projects</td>
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Student Research, Creative, and Scholarly Activities (RCSA) Program at UCO

• Research Assistantship allocations for students began in the early 1990’s

• Evolved from mainly “faculty driven” to “student/faculty collaboration” – institutional culture change

• Student RCSA Grant Program originated in 2007

• Mission Statement for the Student RCSA program: To promote academic transformative learning experiences for students from all disciplines through research, creative, and scholarly activities by supporting productive, collaborative engagement with faculty.
Student RCSA Grant Program

1. Submit grant proposal in February
2. Peer reviewed by faculty on campus
3. Exposure to writing a grant
4. Announcement of grant awards in April
5. Money transferred to deans or departments in July
6. Student/faculty collaboration throughout academic year
## Student RCSA Grant Projects Funded by Academic Year

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<tbody>
<tr>
<td>Fine Arts &amp; Design</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>7</td>
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<td>Business</td>
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<td>Education &amp; Professional Studies</td>
<td>3</td>
<td>18</td>
<td>25</td>
<td>34</td>
<td>35</td>
<td>37</td>
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<tr>
<td>Liberal Arts</td>
<td>2</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>14</td>
<td>11</td>
<td>13</td>
<td>13</td>
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<tr>
<td>Mathematics &amp; Science</td>
<td>7</td>
<td>10</td>
<td>22</td>
<td>24</td>
<td>35</td>
<td>38</td>
<td>46</td>
<td>56</td>
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<tr>
<td>Forensic Science Institute</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>n/a</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>41</td>
<td>67</td>
<td>82</td>
<td>107</td>
<td>113</td>
<td>121</td>
<td>138</td>
</tr>
</tbody>
</table>
Student RCSA Grant Projects Funded by Academic Year

Student RCSA Grant Proposals (Funded)
Total RCSA Projects* Funded by Academic Year

*Student RCSA and Faculty On-campus Grants

97% Retention/Graduation Rate
## Student RA Evaluation Results

**Survey Questions:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aided in personal development</td>
<td>4.37</td>
<td>0.78</td>
</tr>
<tr>
<td>2. Improved critical thinking skills</td>
<td>4.50</td>
<td>0.71</td>
</tr>
<tr>
<td>3. Helped to provide clarity for career goals</td>
<td>4.12</td>
<td>0.89</td>
</tr>
<tr>
<td>4. Aided in career preparation</td>
<td>4.28</td>
<td>0.87</td>
</tr>
<tr>
<td>5. Impacted desire to pursue a career in your discipline</td>
<td>4.34</td>
<td>0.90</td>
</tr>
<tr>
<td>6. Increased sense of belonging to UCO community</td>
<td>4.30</td>
<td>0.91</td>
</tr>
<tr>
<td>7. Improved your communication skills</td>
<td>4.26</td>
<td>0.86</td>
</tr>
<tr>
<td>8. Increased your desire to obtain a graduate degree</td>
<td>4.16</td>
<td>1.12</td>
</tr>
<tr>
<td>9. Provided greater understanding for discipline</td>
<td>4.53</td>
<td>0.71</td>
</tr>
<tr>
<td>10. I learned from this experience</td>
<td>4.86</td>
<td>0.42</td>
</tr>
<tr>
<td>11. Resulted in personal sense of accomplishment</td>
<td>4.74</td>
<td>0.59</td>
</tr>
</tbody>
</table>

$n = 217$; Averages range from 1 (no impact) to 5 (major impact)
Assessment of RCSA Student Learning Outcomes

- What do we want to assess? When do we assess?
- How do we overcome the complex issues when assessing learning outcomes for students from diverse disciplines (standard assessment)?
- How can we capture the transformation of students over time (including “soft skills”) beyond what is reported on a traditional academic transcript?
- How can we connect with future employers, graduate/professional programs?
Student Transformative Learning Record (STLR)

• Tool to track curricular and co-curricular learning outcomes using robust rubrics, including Association of American Colleges and Universities (AAC&U)
• Provide opportunity for students to upload to their ePortfolio their work, e.g., video, publications, presentations, and the assessment of that work.
• Use of a “badge system” to document competencies and allow students to aspire to graduate as a TL Scholar
• $7.8 million Title III grant from US Dept. of Education
  - October 1, 2014 start date
  - $2 million TL endowment fund (sustainability)
Benefits of UG Research

• Key component in academic achievement, retention, and performance

• Participants are more likely to master complex material and pursue graduate studies

• Helps engage and retain underrepresented students

• Students develop sense of self as scholars
Office of High-Impact Practices

- Created Fall 2014
- To liaise with offices and departments promoting high-impact practices (Centre for Global Competency, Volunteer Service Learning Center, etc.)
- Promoting undergraduate research and the RCSA program
- Resource for faculty and students
OHIP Initiatives

- Undergraduate Student Research Advisory Board
- Website with resources for faculty and students
- Faculty/student research abroad grant program
- Faculty mentor training handbook
NCUR
RCSA Central Showcase (debuts Fall 2015)
What does *Transformative Learning* Look Like?

- Think of a moment when the lights came on for you about something in your career or academically, a time that you still remember to this day.

OR

- Think of a time when you saw this happen in a student.

- Someone or something touched your/their life and you/they were changed after.
Transformative Learning

• Wakes students up to their own learning.
• It suddenly becomes relevant and interesting when the lights come on and they “get” the connection for themselves.
• It then drives their own learning from a place of wonder and curiosity.
• It engages them in a way traditional learning might not.
Transformative Learning

- Through STLR and the push toward critical reflection, we are trying to create as many strategic and intentional opportunities for this deeper learning and connection.
- Before any and all “ah-ha” moments were thought to be “transformational.”
- Now we are trying to make sure students have the opportunity and understanding to go deeper than just a surface level transformative experience.
Transformative Learning

- develops beyond-disciplinary skills
- and expands students’ perspectives of their relationships with self, others, community and environment

Central 6

- Discipline Knowledge
- Leadership
- Research, Creative and Scholarly Activities
- Service Learning and Civic Engagement
- Global and Cultural Competencies
- Health and Wellness
TL @ UCO focuses on our Central 6 Tenets:
The Need for STLR for Our Students

Multiple Studies Show Top 5 reasons New Hires Failed (AAC&U, Leadership IQ):

• Coachability
• Emotional Intelligence (EI)
• Leadership Skills & Initiative
• Temperament (self regulation of emotions in workplace)
• Competence in Discipline
STLR is:

- Documenting students’ TL experiences
- Two Sides of the STLR Coin
  - for the student
  - for the University
Benefits for the Student:

• End product into their hands
• ePortfolio
• Allows them to create what looks like a website
  – w/ out knowing any code or html
  – At no extra cost to the student
  – Displays dynamic examples of skills beyond paper
  – Supply it to employers, graduate schools, scholarship committees, & for their own record of learning
  – Can create as many versions as want
  – Have access after they graduate
I am a UCO senior graduating in May 2015. I am majoring in Biology. Because of my major, one of my professors my sophomore year encouraged me to come to the Horticultural Club meeting to meet other Biology students.

There was an event soon after involving volunteering to clean up a local community garden space. I didn’t know too many people on campus so I joined the club and went to the volunteer day. There I met a few students who also liked computer games. We decided to go out to eat lunch afterwards and those people became some of my best friends. My professor was the club advisor.

From hanging out outside the classroom I saw he was a pretty cool guy. Over the rest of my time in school, Dr. Bass became a mentor and I felt like I could actually succeed in college more than I would have thought possible. Some of my best friends, my professor was the club advisor.

From hanging out outside the classroom I saw he was a pretty cool guy. Over the rest of my time in school, Dr. Bass became a mentor and I felt like I could actually succeed in college more than I would have ever thought I could.
When asked to reflect on the experience of the projects, I realized I grew up in a nice, newer area of the metro area. I was not likely to have the lead issues I thought I should be thankful of where I grew up compared to those kids who might not have it as good. I am glad we did these projects as it got me to not just study chemistry for a test and pass the test, but to know how chemistry exists in the world and the bigger picture of how it is connected to what I will need to know in the future.

National Secondary Drinking Water Regulations

STLR Tenets

Discipline Knowledge  Health & Wellness  Research, Creative & Scholarly Activities  Service Learning & Civic Engagement
The Future of STLR-UCO STLR App

Mock Up Courtesy of Bucky Dodd, Ph.D.-Executive Director of UCO eLearning and Innovation
Case Scenario Group Exercise in Training

1. They pick 1 assignment out of 5 assignment examples (1 per college).
2. They work with 1 applicable tenet.
3. They read through the rubric across for just that tenet.
4. They come up with their own criteria, based on the STLR rubric of what it means for a student to move from Exposure to Integration to Transformation in that tenet.
5. Then they do the same for their own real assignment in their class or reflection opportunity with their co-curricular event, student group, internship, project, etc. for each tenet they plan to assess.
<table>
<thead>
<tr>
<th>Transformation</th>
<th>Integration</th>
<th>Exposure</th>
<th>NOT (No Level Achieved)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCSA</td>
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<tr>
<td>Research: The student has gone beyond mere ability to properly define the problem and identify correct methods of investigation: uses proper methodology and tools as the matter-of-course starting point but then critically applies a meta-view of similar research to compare and contrast potential research designs, selecting the best match to discover, specifically, the answer s/he is seeking in the research (use of new research slants, tools, or processes, including qualitative and mixed-methods).</td>
<td>Creative endeavors: The student displays a unique artistic vision, something more than mere competent execution (although competent execution is required). The artistry is made tangible in the work of art. The artistic statement made in the work can be explicatory of the artist in a cogent description of the piece, its theme(s), and the intent in creating the piece.</td>
<td>Research: The student is only at the beginning engagement level with good research. Planning the research is not thorough and the research design may be mismatched to the problem. The student does not thoroughly test the hypothesis and does not seek corroboration of findings or validation of research design and process. The student does not look for potential intervening variables and may jump to conclusions. For qualitative research, the student understands how qualitative research differs from quantitative but cannot design or implement a qualitative research project. The student requires extensive guidance at every, or almost every, stage of the project.</td>
<td>Creative endeavors: The artistic vision is unfulfilled and/or the creative work lacks cohesion and/or the creative process is incompletely executed, lacking depth.</td>
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**RCSA**

**Research:** The student has gone beyond mere ability to properly define the problem and identify correct methods of investigation: uses proper methodology and tools as the matter-of-course starting point but then critically applies a meta-view of similar research to compare and contrast potential research designs, selecting the best match to discover, specifically, the answer s/he is seeking in the research (use of new research slants, tools, or processes, including qualitative and mixed-methods).

**Creative endeavors:** The student begins to contextualize the research project within a disciplinary context and widens the search for relevant information. The student asks more questions to frame both the problem & the hypothesis and considers a broad array of potential intervening variables. For qualitative research, the student can employ a rudimentary coding scheme to categorize responses. The student works independently of instructor on at least some aspects of the research and takes care to ensure data integrity.

**Creative endeavors:** The student demonstrates competency of execution, ensuring an enjoyable experience for the audience, while not necessarily accomplishing the goals or vision that s/he had in mind. The explanation of vision lacks clarity and, most importantly, a crystallized, easily understood description of what was intended with the work of art. The student is still “finding her/his voice” and how to express it uniquely.

**Research:** The student is only at the beginning engagement level with good research. Planning the research is not thorough and the research design may be mismatched to the problem. The student does not thoroughly test the hypothesis and does not seek corroboration of findings or validation of research design and process. The student does not look for potential intervening variables and may jump to conclusions. For qualitative research, the student understands how qualitative research differs from quantitative but cannot design or implement a qualitative research project. The student requires extensive guidance at every, or almost every, stage of the project.

**Creative endeavors:** The artistic vision is unfulfilled and/or the creative work lacks cohesion and/or the creative process is incompletely executed, lacking depth.

**Research:** The student has never done a research project that required the formulation of a hypothesis and the process of proving or disproving that hypothesis.

**Creative endeavors:** The student is a beginner at the college level and does not comprehend the basic elements of the creative process. The student is unable to combine technical skills with tools of composition/creativity in order to fulfill an artistic vision.
<table>
<thead>
<tr>
<th>Leadership</th>
<th>Transformation</th>
<th>Integration</th>
<th>Exposure</th>
<th>NOT (No Level Achieved)</th>
</tr>
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<tbody>
<tr>
<td>The student can identify the leadership styles and philosophies of peers and effectively use this knowledge to create teams and workgroups. The student is cognizant of community needs and aligns her/his efforts to serve and meet those needs.</td>
<td>The student articulates a personal philosophy of leadership. The student acknowledges that individuals may display leadership differently and recognizes that leadership is not a position or title but centers on the ability to influence the community (world).</td>
<td>The student may have never considered her- or himself as a leader but is open to the potential and understands that each person has the ability to serve as a leader. The student may have begun to develop an awareness of her or his own personal values and how they differ from those of others. The student interacts with others who are considered leaders and may adopt the mindset of serving as a leader with a position or title in limited experiences or activities.</td>
<td>The student believes that s/he does not have the potential to serve as a leader and seems unwilling to explore the opportunities presented.</td>
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THE STLR PROCESS FOR INSTRUCTORS

1. Choose an Assignment
   One you have already created or create a new one (your choice) that would be a Transformative Learning Opportunity.

2. Match the Assignment
   to one or more Central 6 Tenet(s) in addition to Discipline Knowledge.

3. Create Criteria
   For what it means for a student to move from Exposure to Integration to Transformation.

4. Assign
   The assignment in class, being able to explain the expectations.

5. Grade the Assignment as you normally would.

6. Assess the Assignment
   Using the STLR rubric and provide Feedback to students.

Select an Assignment
Match to a Central 6 Tenet
Create Criteria for Levels of Transformation
Assign in Class
Grade Assignment as Usual
Also Assess Assignment Using STLR Rubric
THE STLR PROCESS FOR STAFF

**Phase 1: Development**

1. Choose an Event or Group
   One that already exists or create a new one (your choice) that would be a Transformative Learning Opportunity.

**Phase 2: Match**

2. Match the Event or Group to one or more Central 6 Tenet(s) in addition to Discipline Knowledge.

**Phase 3: Criteria for Levels**

3. Create Criteria
   For what it means for a student to move from Exposure to Integration to Transformation.

**Phase 4: Swipe In**

4. Swipe in Students
   At the event or group meeting or function.

**Phase 5: Create a Reflection**

5. Optional: Create a deeper reflection opportunity for students in the D2L shell Dropbox.

**Phase 6: STLR Assess**

6. Assess the Reflection Assignment
   Using the STLR rubric and provide Feedback to students.
THE STLR PROCESS FOR STUDENTS

1. Complete a STLR Assignment
   Complete a STLR assignment in a class.

OR

2. Attend a STLR Event
   Attend a STLR Designated Event and swipe in with your Student ID Card. By doing so, you will automatically receive an Exposure level for the event.

3. Event Reflection
   Many events will have the opportunity to complete a reflection after to possibly receive more than just Exposure.

Submit Assignment or Reflection in D2L Dropbox

4. Submit to Dropbox
   After you’ve completed the assignment or Reflection, submit in the course or event Dropbox in D2L.

5. STLR Feedback and Assessment
   The faculty or staff member over the class or event will complete the STLR rubric, providing an Exposure, Integration, or Transformation Level and often written feedback.

Get STLR Level & Feedback

6. Push to ePortfolio
   Push the STLR assignment or reflection work along with the STLR level & feedback to your ePortfolio in D2L.