Career and Technical Education, Architecture/Engineering

Overview
The teacher who wrote this Student Growth Objective teaches an Architecture and Engineering course in a vocational school.
Strengths: *a) By using **multiple project-based assessments**, the author requires his students to apply a **significant proportion of skills and knowledge** they have learned throughout the year**.** b) The projects he uses as assessments require the students to **solve problems** and then describe in writing the thought process they used. c) This approach can be adopted by other CTE teachers who can use a similar assessment tool but teach different content, e.g. woodshop. Used by all teachers in CTE in the same school, this SGO format has the potential to **increase the comparability** of SGOs between educators.*
Suggestions: *The teacher should consider using prior year data and other indicators of predicted performance to differentiate between groups of students and set targets rather relying solely on a pre-assessment score.*

Name	School	Grade	Course/Subject	Number of Students	Interval of Instruction
		9-12	Architecture / Engineering	65	October - May

The teacher states below that he will be collecting information between October and May, thereby indicating his intent to capture a significant portion of the school year in this SGO.
Suggestion: *He may consider stating the specific dates to more clearly communicate his intent , e.g. October 1 – May 15.*

Standards, Rationale, and Assessment Method
Name the content standards covered, state the rationale for how these standards are critical for the next level of the subject, other academic disciplines, and/or life/college/career. Name and briefly describe the format of the assessment method.

This SGO includes all of my students and applies to:
Technology Education standards 8.2.12.B.1, 2, 3 and 8.2.12.F.3; Science standards 5.1.12.B.1,2 and 3; CCSS.ELA-Literacy.RST.11-12.7
Assessment Tool: Independent Problem Solving Rubric (practical and written portions)
Practical: Students are assessed on 2-3 initial design challenges early in the year and 2-3 later in the year. I will observe my students and assesses their problem solving ability based on the rubric. There are five categories that students are evaluated on that align with the technological design loop steps. Each category has a score range of 0 to 4. Students can earn a total of 20 points for each problem solving challenge. The early ones are averaged and then compared to the ones at the end of the year (which are also averaged) and then the growth (or decline) is measured between them. I will provide initial design challenges after I teach the design process in the first few weeks of school.
Written: Students will also submit a written report for each project that documents their thought process following the design process. This will be evaluated in conjunction with the practical portion on a similar 20 point rubric, part of which addresses Common Core State Standards for literacy.

Standards: The teacher clearly states the standards he is teaching. He incorporates Common Core State Standards in his SGO, recognizing how important these standards be taught by all teachers. He may consider including a brief description of the standards for easy reference. He should also justify why he has chosen these standards and how they are critical for his student's future success.
Assessment: The author clearly explains the assessment method he will be using at the end of the SGO period including numbers of points in the rubric. The teacher increases the quality of the assessment by using multiple components (practical and written), both of which can be scored on 20-point rubrics. In addition, he uses multiple projects to evaluate his students, thereby increasing the reliability of the assessment.
Suggestions: a) The teacher may consider stating the specific number of projects his student will do, rather than offering a range, i.e. 3 rather than 2-3. b) The teacher should attach a copy of the assessment rubrics to this form to facilitate the SGO conference with his administrator. c) The teacher should also transfer the information for

determining student starting points to the next section of the form.

Starting Points and Preparedness Groupings

State the type of information being used to determine starting points and summarize scores for each type by group. Add or subtract columns and rows as needed to match number of preparedness groups and types of Information used.

Preparedness Group	Information #1	Information #2
	Average score on practical rubric	Average score on written rubric
Whole Class	13/20	10/20

The teacher has gathered valuable information from his students in the first few weeks of school as explained in the rationale section above. He obtained authentic student scores based on multiple projects in his class. However, he has grouped all students together under a class average. This approach does not recognize the range of student performance and allow the teacher to set appropriate targets across this range.

Suggestions: *a) The teacher should group his students by starting points and set ambitious and achievable targets for each group. For example, groups could be based on the following score profile: Low – 10-19/40, medium – 20-29/40, high – >29/40. b) To further improve this SGO, the teacher should take into account prior year data from related courses, e.g. first year engineering course, science, English, when determining starting groups. This will provide a more accurate picture of starting points and predicted student performance and allow the teacher to set even better targets. c) The teacher should also provide a description of the starting point assessment methods in this section.*

Student Growth Objective

State simply what percentage of students in each preparedness group will meet what target in the space below, e.g. "75% of students in each group will meet the target score." Describe how the targets reflect ambitious and achievable scores for these students. Use the table to provide more detail for each group. Add or delete group rows as needed.

At least 70% of my students will increase their score by 40% or more between October and May of the school year based on the independent problem solving and writing rubrics.

Preparedness Group (e.g. Low, Medium, High)	Number of Students in Each Group	Target Score on SGO Assessment
Whole Class	65	≥40% improvement over pre-assessment score

The teacher clearly states how many students will do what by when. The teacher has decided to use a growth score of 40% for each of his students. However, it is not clear why this number was chosen and may lead to weak targets for many students. For example, if a student started with a 10/40 on the baseline projects, having this student aim for 14/40 by the end of the course is not an ambitious goal in most cases and does demonstrate a level of competence appropriate for the requirements of the course. Similarly, the student with a 30/40 on the first projects may attain 40/40 on the final projects but would not make the 40% growth target.

Suggestion: *a) The teacher should group his students based on their starting points and set targets for each group. These targets may be "growth" targets differentiated by starting points, or achievement targets, such as "students in the low preparedness group will score 30/40 on the summative assessment. The latter approach communicates to students that there is a performance expectation for them that still takes into account their starting points. b) Also, for high performing students, the teacher may consider adding a higher level project or capstone project that would allow these students to demonstrate learning not adequately captured by the performance rubrics.*

Scoring Plan

State the projected scores for each group and what percentage of students will meet this target at each attainment level.

Preparedness Group	Student Target Score	Teacher SGO Score Based on Percent of Students Achieving Target Score			
		Exceptional (4)	Full (3)	Partial (2)	Insufficient (1)
Whole Class	40% increase in each student's score	85% or greater students (56 or more)	70%-84% of students (45-55)	55%-69% of students (36-44)	0-54% of students (35 of fewer)

The scoring plan is clear, logical, and aligns with the SGO statement and other information on this form. The teacher is using percentages of students that will attain a particular target to differentiate levels of success on the SGO. This will simplify calculations for an SGO score if student enter or leave his class throughout the year.
Suggestion*: As mentioned previously, the teacher should set tiered targets based on groupings developed through multiple measures of student preparedness.*

Approval of Student Growth Objective
Administrator approves scoring plan and assessment used to measure student learning.

Teacher _____   Signature_____   Date Submitted_____

Evaluator _____   Signature _____   Date Approved _____

Results of Student Growth Objective
Summarize results using weighted average as appropriate. Delete and add columns and rows as needed.

Preparedness Group	% Students at Target Score	Teacher SGO Score	Weight (based on students per group)	Weighted Score	Total Teacher SGO Score

Notes
Describe any changes made to SGO after initial approval, e.g. because of changes in student population, other unforeseen circumstances, etc.

Review SGO at Annual Conference
Describe successes and challenges, lessons learned from SGO about teaching and student learning, and steps to improve SGOs for next year.

Teacher   _____   Signature _____   Date _____

Evaluator _____   Signature _____   Date _____