What is SCALE-UP?

Student-Centered Active Learning Environment with Upside-down Pedagogies

ABOUT THE METHODOLOGY

SCALE-UP which stands for Student-Centered Active Learning Environment with Upside-down Pedagogies is not a new methodology.

- It was founded in 1995 by Professor Beichner (Pronounced BEEK-NER) - North Carolina State University as Student Centered Activities for Large Enrollment University Physics
- It was so successful that other courses adopted it and so it transformed into Student Centered Activities for Large Enrollment Undergraduate Programs.
- Well then, the scale of use grew even further and more schools and programs adopted it, so it evolved to Student-Centered Active Learning with Upside-down Pedagogies.

Model: Creates an environment that facilitates student engagement through a combination of room design, technology, instructional methods, and curriculum design.

Versions of it are seen in over 100 Universities, including some prestigious institutions. A couple of examples are:

- **YALE & MIT**: Technology Enhanced Active Learning (TEAL)
- **University of Minnesota**: Active Learning Classroom (ALC)
- Even our own **Air University** has their version which they refer to as SCALE

Implemented successfully, SCALE-UP transforms the classroom environment from a traditionally lecture-based curriculum to an active-learning curriculum resulting in a collaborative, interactive, actively-engaged learning experience in which students take responsibility for their learning.

SCALE-UP was originally designed to enhance teaching and student engagement in large groups, it has been found to work equally well with smaller class sizes. It is SCALABLE!

THE METHOD DEFINED
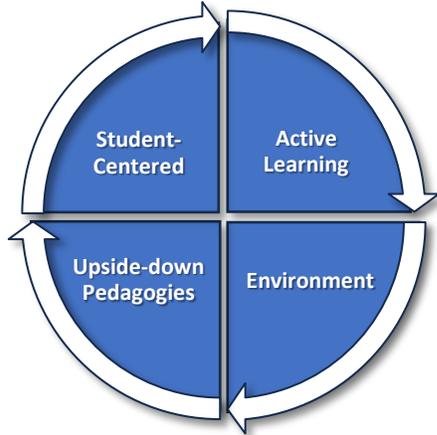
First, let's look at the S-C
Student-centered learning - *philosophy that the* *student...is at the "heart of the learning process."* When a classroom operates with student-centered instruction, students and instructors share the focus. Instead of listening to the teacher exclusively, students and teachers interact equally. Group work is encouraged, and students learn to collaborate and communicate with one another. Student centered learning aims to develop learner independence by putting responsibility for the learning path in the hands of students; thus building 21st century skills. Learning also becomes more personalized to meet each students' unique needs, interests, and aspirations and designed with their ideas and voices at the table. *To* simplify this: *In student-centered learning instead of the Instructor piloting the students through the lesson, they now fill the role of the navigator with the student as the pilot. The student drives the learning path but the instructor ensures that they meet the objectives and goals just as a navigator guides the pilot to the NAVAID checkpoints.*

Now, we'll examine how we integrate a student-centered curriculum through Active Learning.

Learning is not a spectator sport. So, Active learning is a form of learning in which teaching strives to *involve students in the learning process* **more directly than in other methods.** Students participate when they are doing something besides passively listening and the responsibility of learning lies with the students, not with the instructor. *Activities are carefully designed to facilitate student engagement with the material, engagement with other students (collaboration), and engagement with the facilitator (instructor). Engagement is present = student-student, student-content, student-instructor all included.* The idea is to design curriculum with activities that transforms lecture-based courses into small, discussion-based experiences with students at the center of instruction and learning.
So, where does this happen?

The 'Environment' is the instructional space in which student-centered, active-learning takes place through employing upside-down pedagogy in the design and delivery of curriculum. The architecture is designed with the student-centered learning approach in mind ensuring the instructional space is more flexible, with open seating plans and no obvious "front" of the classroom.... [and]...naturally creating a collaborative environment, with students as an active, rather than passive, participant ".

Upside-down pedagogies is the last piece of SCALE – UP. It may seem extremely complicated, but I'm going to make it extremely simple...are you ready?

Pedagogy is the theory of how children learn and focuses on child development. Its teacher centered or the "Sage on the Stage" where the instructor is the pilot. The opposite of that is Andragogy (or the upside-down of pedagogy), which is learner-centered and focused on adults owning their learning. This usually takes place at the collegiate level. Here, the instructor becomes the "Guide on the Side" or the Navigator to the student's pilot.

THE ENVIRONMENT
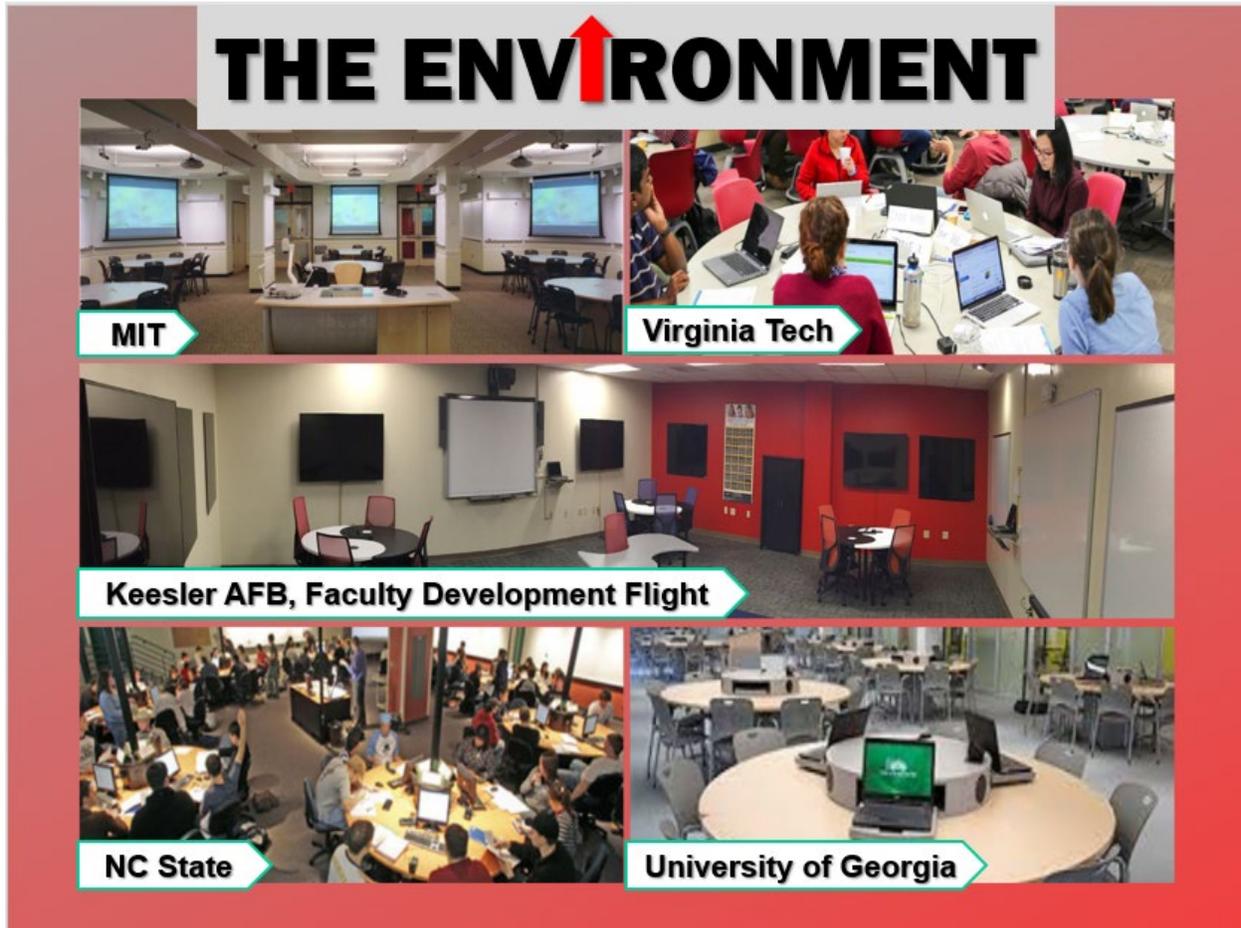
These are examples of SCALE-UP learning spaces. Our new Keesler Faculty Development SCALE-UP room is right there in the middle.

- Learning innovation is not just the integration of technology but the combination of the instructional methodologies and the learning space. The pictures show a common denominator…round tables. Research has shown that the #1 piece of learning innovation is the round tables because they promote collaboration. They force people to look at one another and when have you ever been in a situation where you're looking at someone and conversation isn't sparked?
- The layout needs to incorporate an open space concept for fluid accessibility of the facilitator as he or she moves from Pod to Pod to ensure students are progressing appropriately to meet the lesson objective. It should promote movement and interaction.
- Studies show that subtle use of color stimulates creativity.

However, integrating Student-Centered Active Learning into our classrooms is more than just changing the furniture.

SCALE-UP SOCIALIZATION AND INTEGRATION INTO FACD

All of this a complete culture shift from the training environment that the command has been used to. Traditionally, people just don't do well with change and when there isn't buy-in to something, it makes it difficult to facilitate wide-spread adoption. Since Faculty Development is charged with the force development of technical training individuals, it has put us at the forefront of this movement. In order to better acclimate the training force to this new culture of training, we knew we needed to ease them in, rather than dumping them into the deep end. This process has allowed for the success that we've had.

Here is how we began socializing SCALE-UP to the Training Group:

First, and most important, we had 100% buy-in from leadership that has been conveyed to the faculty and staff. From the Wing/CC, to TRG/CC, to 81 TRSS/CC, we had support at every level of our chain of command. This support sets the tone for learning innovation and is a pivotal step in cultural change.

Second, Faculty Development began conducting Brown Bag workshops on "What is SCALE-UP?" This helped people truly understand what it was and eliminate any misconceptions. It helped to ensure everyone was on the same sheet of music.

Third, Faculty Development also launched a newsletter as a vehicle to share innovation and ideas across the TRG. This is helped to socialize the cultural change and create synergy across the TRG as members saw what other squadrons were doing and helped to spark ideas for possibilities in their own curriculum.

Fourth, Faculty Development incorporated SCALE-UP innovation into the Basic Instructor Course (BIC) on 9 October 2018. As BIC is the Launchpad for new instructors, it was only fitting to integrate these new methodologies where the instructors' journey begins. All BIC students now receive SCALE-UP methodology and are exposed to enhanced technology in the new SCALE-UP classrooms.

The Fifth and final step was to reach the instructors that didn't get the opportunity to learn about all of these awesome tools that new instructors are getting to experience. Well, we are not leaving them out! We are bringing it full circle with our newly launched Faculty Development course: Enhanced Learning & Instructional Techniques Enrichment (ELITE). It refreshes seasoned instructors on methodology and technology in the new SCALE-UP classrooms. We just completed our second small group tryout and are receiving stellar reviews. In fact, based on student feedback, we are now expanding the course to developers so that they can learn about the methodologies as well.

And we're not just modeling SCALE-UP in the traditional classroom.

SCALE-UP ONLINE

Our Online Learning Team is committed to Excellence in guiding the online learning community through formal training, on-demand learning, and support of online learning projects. In fact, our online courses have been modeling SCALE-UP methodologies since 2016 when we brought the IDOL course online.

Following the completion of the AETC Blackboard pilot program where it was discovered that instructor-led online learning was applicable to technical training, it was also recognized that there was a need for in-house training. The 81 TRSS Faculty Development Flight was charged by AETC to develop an online course that specifically targeted this need.

IDOL - The Instructor/Developer of Online Learning (IDOL) is AETC training which builds organic instructor/developer capabilities through an intensive 10-day/80-hour online course presented exclusively by the Keesler Faculty Development Flight. It was recently highlighted by AETC to the SECAF as the first course designed specifically to help instructors and instructional design professionals attain competencies in principles, theories, and teaching strategies for online or blended learning environments. Extremely intensive course. Built on a resident schedule, 8 hrs. of training per day, 10-day course. It would be a semester course on a university schedule. Just as BIC is the Launchpad for in-resident instructors, IDOL serves the same role for both online instructors AND developers. Our customer base has transcended AETC and we are now servicing agencies all across the Air Force. Some of the agencies we have seen include: USAFSAM, AU Barnes Center, AF Academy, Air Force Audit Agency, OSI, and AFPC as well as sister services. We also had Troy state's online ISD department attend and they lauded it as the best course of its kind that they had seen.

AOL - The Analysis of Learning (AOL) course was the next step in expanding the online learning community. Because not all delivery methods are appropriate for all course, AOL prepares decision-makers such as Training Managers, Training Pipeline Managers, Career Field Managers, TDE personnel, and online instructors to analyze training requirements and determine the best delivery modality for their assigned courses. This four week/40-hour fully asynchronous course, is 100% online and designed to be taken in conjunction with the busy needs of the targeted individuals through a university schedule. It walks students through the key elements to consider when determining an appropriate modality for their courses. Additionally, it connects faculty and staff from the training community creating an environment that promotes a "robust sharing of information".

We talked about the importance of the learning space in the SCALE-UP methodology and you can't get much bigger than Cyber Space. Previously, online learning was seen as where networking goes to die. However, what these courses have also showcased is that engagement, interaction, and networking can be expanded even further than the traditional in-resident classroom. They are also changing the mindset toward online learning, even those dead-set against it.

As the 81st Training Group continues to move forward in integrating these initiatives, we are seeing more and more squadrons adopting this methodology into their classroom. As the pandemic blanketed our country, the use of SCALE-UP methodologies in the online classroom continues to spread as well.

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