



5E Lesson Development

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Introduction:

This *5E Lesson Development* book is the result of several professional learning events involving hundreds of CTE teachers. It outlines the 5E lesson structure that is based on the Constructivist Theory of Learning. This structure leads to conceptual understanding, not simply rote memorization. It empathizes the student's ability to "do something" rather than focus solely on their ability to remember.

This book is a product of the Illinois CTE Innovative Curriculum Resources committee. Lessons that have been produced through the processes outlined here can be found on the ILCTE.org website.

Rationale:

One of the primary goals of education is to prepare young people for their future. When society changes slowly, it is appropriate to develop a list of topics on which an "educated person" should be familiar. Students demonstrate attainment of this knowledge by performing to an acceptable standard on valid and reliable tests.

Throughout history technology has been developed to assist in what society values. This is only logical since doing valuable tasks faster, easier, or of increased quality makes the technology itself valuable, often rewarding the inventor richly. Since knowledge is greatly valued, information technology has flourished in the past 50 years. So much so, in fact, that over 50% of the workforce shifted from manufacturing jobs to information jobs around 1985. Since then, the generation, storage, distribution, access, and use of information continues to expand exponentially.

How does the rapid proliferation of information technology affect the definition of an "educated person?" Since information is now readily available, the memorization of facts is less important. Any class where "getting an A" is based primarily on the ability to memorize and recall facts is preparing students for the world of the past. Being able to find information, assess its quality, and use it appropriately is of critical importance. This requires a shift in pedagogy which is the focus of the professional learning experience and the lessons that it produces.

Lesson Development Process:

All the lessons in this series are a result of a Professional Learning program. Curriculum development is the vehicle for continuous improvement of instructional materials and pedagogy.

The Professional Learning program consists of the following cyclic steps:

1. Teachers are invited to a one-day work session or three, 2-hour on line sessions.
 - a. The teachers are introduced to the 5-Phase Professional Teaching Cycle and the 5E Learning Cycle
 - b. Initially, Phases I: Data Analysis and Phase II: Goal Setting are completed by the ILCTE Team and approved by ISBE to identify topics for new lessons.
 - c. Teachers use the *Practical Lesson Writing Guide* to complete Phase III: New Learning, outlining new lessons in the 5E format.
2. The ILCTE Team, in communication with the original authors, convert the lesson materials into a *Professional Lesson Template*.
3. Each lesson is implemented by the original authors and other teachers (Phase IV).
4. Data are collected and discussed with the authors prompting revisions to the lessons (Phase V) and the writing of the Student and Teacher editions as deemed appropriate.
5. The teachers provide input for Data Analysis (Phase I) and Goals are reviewed (Phase II).
 - a. If/when existing lessons are deemed worthy, they are published. Comments are encouraged and revisions are continuous.
 - b. Topics for new lessons are identified.
6. More teachers are invited to participate. They work with the experienced teachers to learn how the 5-Phase Professional Teaching Cycle and the 5E Learning Cycle enhance instruction. This begins the continuous loop of Professional Learning through Curriculum Development.

These lessons are presented in their various levels of development. Lessons that have completed the 5-Phase process are available in an electronic "Flip Book" format and can be found on the Book Shelf (link). With every lesson, comments are encouraged.

Level 1- The Practical Lesson Writing Guide has been completed resulting in a description of the lesson and its many components.

Level 2- The lesson has been converted to the Professional Lesson Template with some minor revisions and clarifications occurring in the process.

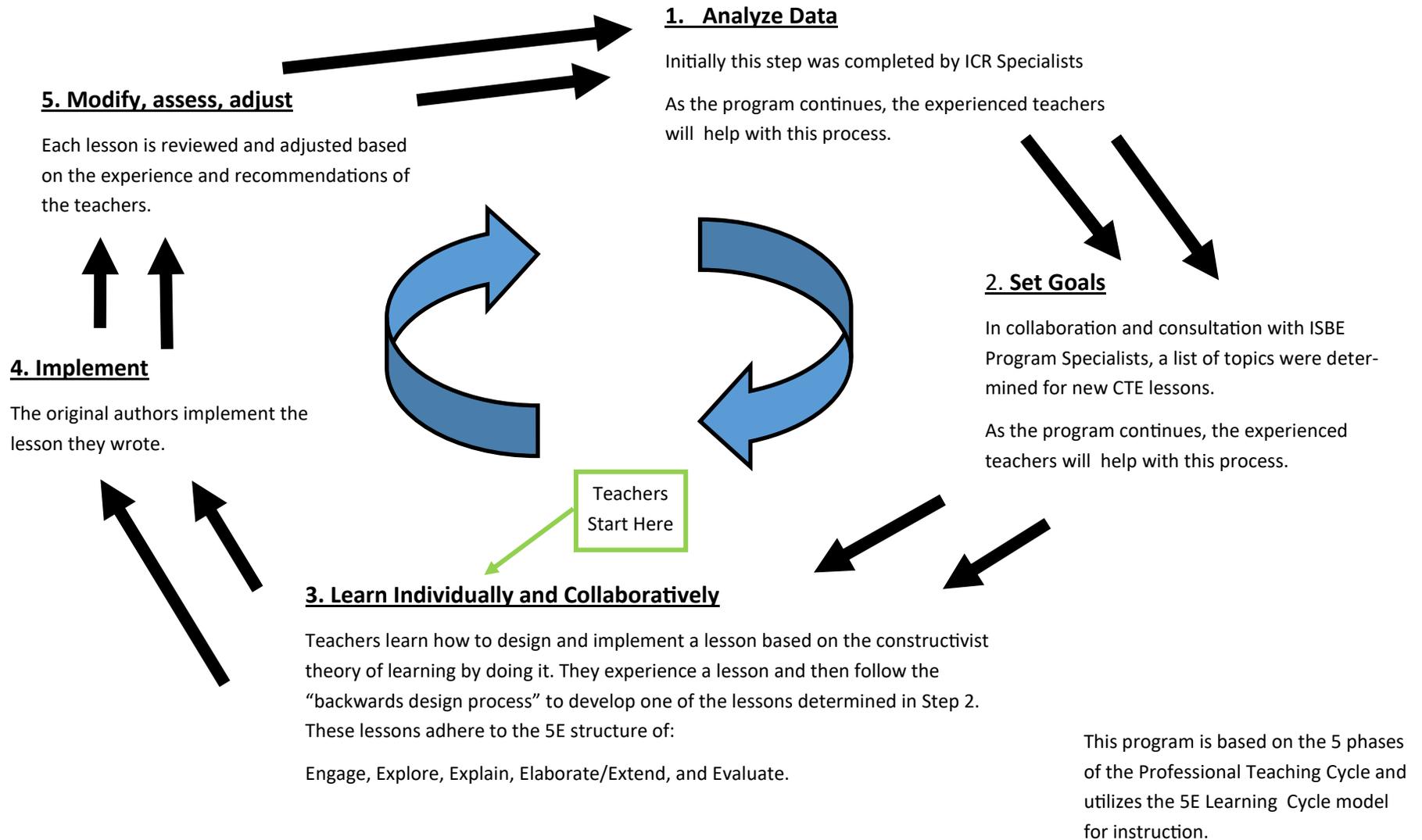
Level 3- the lesson has been prepared for use in the classroom. Resources are available and specific steps/processes have been written.

Level 4- The lesson has been used and revisions made. The Student and Teacher Editions have been written (if appropriate).

Level 5- The lesson has been converted to a final format and is placed on the Book Shelf. Comments are encouraged and revisions are on-going.

Professional Learning through the Development of Innovative Curriculum

All CTE teachers are encouraged to participate in this program that utilizes the process of developing, testing, and modifying useful curricula materials as the vehicle for exploring and implementing effective educational strategies. It begins at Step 3 on this chart with a 1-day work session or three 2-hour sessions on-line. These will be regularly scheduled throughout the year and at various locations across the state of Illinois.



5 E Model:

All Professional Learning and the lessons produced through it incorporate the 5E Learning Cycle structure. This model creates an environment where the student experiences and discovers the content. It is carefully designed and skillfully executed so that students construct an accurate and detailed understanding of the topic being addressed.

Section	Description
1. Engage	An activity is conducted that attracts student attention to the topic and communicates its importance and relevance.
2. Explore	Students do an activity that allows them to experience and discover the content of the lesson.
3. Explain	From their experience, students explain the content. Teachers use their responses as formative assessment. Misconceptions are addressed through additional questioning or other appropriate means.
4. Elaborate/Extend	The content is applied to a “real life” situation or expanded into some related content.
5. Evaluate	Student understanding of the content is assessed through various instruments.

How to Teach a 5E Lesson:

The primary difference between a traditional, teacher-centered pedagogy and that of the 5E Model is in the delivery of content. In the traditional model, the teacher describes, presents, addresses, shows, demonstrates, and/or explains all content. The students sit attentively and listen, taking notes so that they remember it in preparation of the test. If time and materials permit, a project may be conducted after the instruction so that students can see “how it works.” The project is done last, if at all.

In the 5E model, students discover the content by experiencing it. The project or activity is used as the vehicle for instruction, not simply the application of it later. Teachers ask questions to guide student thinking, not answer their questions directly. There is no “front-loading” or “pre-teaching.” Students learn the content by doing it, clarify their understanding through questioning, and demonstrate their mastery through proper use of the concepts. The project is done first.

Consideration of the 5E model always prompts the same question: how can you expect students to know something if you do not teach them? From strictly an educational perspective, that is legitimate. But it is not reality. For example, one of the most complex things modern adults learn is how to operate the cell phone. It has its own set of operating instructions and language (lol). Yet there are no books published, no classes taught, or tests given at the store before the proud new owner carries it out. Modern society changes so quickly that we learn how to learn. We figure it out. Our understanding grows through use, not necessarily through lecture. As students encounter new vocabulary, they will learn to look for clues to its definition. As they run into problems, they will learn to find resources for solving them. As they discover new content, they will figure out how it connects to previous knowledge. None of this, however, diminishes the role or importance of the teacher. The teacher is critical to guide the learning process and adjust for the individual learners. The teacher is the expert in pedagogy but no longer the all-knowing master of the content. With proper instructional strategies, the knowledge level of the student can, and probably should, exceed that of the teacher.

Practical Lesson Writing Guide

Innovative Curriculum Resources Project 2020

Authors _____

Date and
Location _____

<i>Box 1</i>	What is the topic or title of the lesson?
<i>Box 2</i>	What do you want the students to learn about this topic?
<i>Box 3</i>	Why do you think they need to know it (life skills, careers, etc)?
<i>Box 4</i>	What Educational Standards are addressed?
<i>Box 5</i>	Five years after graduation, what should they still know about this topic? How might they be using this knowledge/skill set?
<i>Box 6</i>	5. Evaluate: (___ minutes) What do we need to see to be convinced that they know it? Be sure to assess every objective and/or standard. Refer to Boxes 2, 3, and 4.
<i>Box 7</i>	What class(s) or discipline(s) would be the most likely to do this lesson?
<i>Box 8</i>	What grade level do you feel would be most appropriate?

<i>Box 9</i>	1. Engage: (___ minutes) How will students get interested and excited about learning this material? Refer to <i>Box 3</i> .
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<i>Box 10</i>	2. Explore: (___ minutes) What activities can be completed so that they experience and/or discover the material we want them to learn? Refer to <i>Boxes 2-6</i> .
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Box 11 3. Explain: (___ minutes)

What questions can students answer if they are beginning to understand this material? Refer to *Boxes 2-6 and 10.*

Box 12 4. Elaborate/Extend: (___ minutes)

What situation/activity/process can we set up so that students can build on their new knowledge to learn more or apply this knowledge in the “real world” or in other classes? Refer to *Boxes 3, 5, and 6.*

Box 13 Differentiation:

How might this lesson be adapted to varying abilities? Refer to *Boxes 7 and 8.*

Box 14 Essential Employability Skills:

Indicate the skills demonstrated or necessary to do this lesson. Write a short explanation identifying where and how they are addressed. Refer to *Boxes 9-12.*

Category	Skill	Where and How it is addressed/experienced
Personal Ethic:	Integrity	
	Respect	
	Perseverance	
	Positive attitude	
Work Ethic:	Dependability	
	Professionalism	
Communication:	Active Listening	
	Clear Communication	
Teamwork:	Critical Thinking	

	Effective and Cooperative Work	
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Box 15 Time Required:

Approximately how much class time will be required to complete this lesson? Add up *Boxes 6 and 9-12*.

Box 16 Resources Needed:

What tools, materials, documents, etc. are needed to teach this lesson? Refer to *Boxes 6, 9, 10, and 12*.

Box 17 Lesson Overview:

Look back over the lesson you have written. How would you describe this lesson to teachers and students in 1 short paragraph? Refer to *Boxes 1-16*