



## Redefining Pedagogy by Using Technical Scaffolding for Teaching Advanced ESL Learners

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### Abstract

*Online learning has become an integral part of contemporary higher education across the globe. An increasing number of institutions are incorporating online courses and degrees into their curricula. Since web-based learning offers flexibility, accessibility, and increased interaction with instructors and fellow students, it gets a competitive edge as compared to the traditional class room teaching. This perceptible change has also influenced and marked a change in the teaching methods and materials for on campus courses in order to optimize the efforts made by teachers and to increase the learning quantum among learners maintaining their own pace and using their own learning style. The present paper therefore, attempts to discuss the feasibility of integration of online writing tutorials with web-supported language classrooms especially for enhancing the writing skills of the advanced ESL students. The paper also explores how scaffolding can be employed to enable the maximum involvement and improvement to occur in students' writing skills in the set Zone of Proximal Development ZPD.*

### Introduction

In the last three decades, online education has witnessed an exponential growth with high enrollment especially in higher education programmes. Online education has made its inroads in all types of subjects like management, humanities, library science, engineering, social sciences, research and even for teaching sciences where lab experiments are essential. The rapid changes are being experienced in educational systems all over the world. Besides the Online off- campus education, the on- campus education systems today are also trying to integrate the technology embedded online teaching, so that their pedagogy could address the changing learning styles and aptitudes. Teachers also need to learn how the students' learning changes with the use of technology. The present research explores the key issues of integrating online scaffolding with face to face teaching learning and discusses the major dimensions of learning effectiveness with this type of complimentary online scaffolded teaching learning environment. This study focuses on the experience of one instructor in guiding the study oriented projects for enhancing learning effectiveness. Before understanding how this integration was done and its effectiveness, an attempt has been made to understand the key concept scaffolding.

### Scaffolding: a conceptual insight

Scaffolding is an instructional technique, associated with the zone of proximal development, in which a teacher provides individualized support by incrementally improving a learner's ability to build on prior knowledge. O'Day (2006) has worked intensively on scaffolding creative writing[1]. While preparing the Lesson Plan on Scaffolding Methods for Research Paper Writing O'Day (2006) states that research paper scaffolding provides a temporary linguistic tool to assist students as they organize their expository writing. She further advocates that scaffolding assists students in moving to levels of language performance they might be unable to obtain without this support. She has emphasized upon instructional scaffold which is useful for expository writing because of its basis in problem solving, ownership, appropriateness, support, collaboration, and internalization. Scaffolding provides contextual supports for meaning. These supports may include; resources, a compelling task, templates and guides, visuals and graphics, cooperative learning and hands-on learning guidance on the development of cognitive and social skills.

Donato (1994) has said, "Scaffolded performance is a dialogically constituted inter-psychological mechanism that promotes the novice's internalisation of knowledge co- constructed in shared activity" [2]. Biancarosa and Snow (2004) stress upon the fact that students need to take ownership of knowledge and for this they must learn to rework raw information, use details and facts, and write [3].

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Scaffolding can be used in a variety of content areas and across age and grade levels. Scaffolding is a term closely associated with Vygotsky's Zone of Proximal Development [4]. According to Berk and Winsler ESOL teachers in constructivist settings can use scaffolding to support learners and facilitate the construction of meaning and knowledge [5]. Walqui (2006) has also referred to it as not only an expert-learner relationship, but also a relationship of equal knowledge [6]. However, it may or may not be equal knowledge but surely shared knowledge.

In a class room where learner's ability of co constructing knowledge is built up, learner creates zones of proximal development for each other and engage in mutual scaffolding. It means that scaffolding also encompasses collaboration among learners. The collaborative dialogue facilitates cooperation among learners and build an environment to scaffold for English language learning tasks and materials and provide a variety of verbal and academic supports, from both teacher and more proficient peers. Students thus, are able to meaningfully engage in content learning and acquire the necessary language and academic skills necessary for independent learning.

With the advent of technology scaffolding process has become technical in nature. Technical scaffolding thus, is a newer approach in which computers replace the teachers as the experts or guides, and students can be guided with web links, online tutorials, or help pages [7]. Technical scaffolding is a recent terminology but was visualised quite earlier by Kao, Lehman and Cennamo [8] when they proposed that "the processing and integrating capabilities of computers have created an interactive, support-rich, and individualized learning environment. These characteristics might break the limitations of scaffolding and ease the implementation of this instructional technique." (p. 302). Therefore, teachers working at higher education must train themselves in technical cognitive scaffolding.

The present paper focusses on how this scaffolding process can better equip students to learn to do a systematic research and organize information for writing a report. For doing so, the term project report scaffold, as given by O'Day, has been used as the basis of implementation.

## **Implementation of technical scaffolding in study oriented projects at BITS Pilani**

In most of the engineering, management and liberal arts studies programmes students are required to take up some study oriented projects (SOPs) or lab oriented or computer oriented projects. In BITS Pilani all the first degree students are mandatorily supposed to do a couple of SOPs to complete their degree.

A project report scaffold provides students with clear support for writing which includes a problem statement, literature review, analysis, research methodology, results, conclusion, and references. Students examine informational text, use an inquiry-based approach, and practice genre-specific strategies for report writing. Depending on the goals of the assignment, students may work collaboratively or as individuals. An individual student-written report and a co- authored project report provide an authentic model of a scaffold and the corresponding finished report. In case of SOP II Reciprocal scaffolding, ( Holton and Thomas) method was used that involves a group of two or more collaboratively working together. The project report scaffold is designed to be completed during ten sessions over the course of twelve weeks.

### **Writing project report**

In case of both the individual project and the team project the end goal is to draft a report on the research topic in an organized way.

#### **1. Planning**

Brainstorming was used to scaffold the existing understanding of the problem taken up for their study. Students are made to get their thoughts out of mind and onto a canvas of whiteboard. complete this step independently.

At this stage the students were encouraged to collect the relevant study material. In the first week the SOP I and SOP II students were asked to search for a couple of most relevant books on their topic from the library and also collect around ten important and relevant research papers from various quality database from Project Muse, Altavista, Scopus, Project Euclid, JSTOR etc.



## 2. Constructing Knowledge and a better understanding of the key concepts related to the Chosen topic

During next three weeks students were asked to sum up their understanding in the form of response paper on google doc and through skype the discussion were held. A clear guideline was provided for writing the response paper:

- Read the paper and record your thoughts and reflection in notes in your own words. Reflect upon what you agreed on..." or "what you disagreed on...".
- Specify the important and interesting ideas that you gathered from the paper
- summarizing the authors' arguments
- Describe your point of view and Justify why you think that way.
- Be specific. You should not write generalized statements like "One of the authors thinks that the meaning of Emotional intelligence is the ability to identify and manage your own emotions and the emotions of others. It is generally said to include these three skills: " It is better to say " Daniel Goleman, a psychologist, and science journalist has defined Emotional intelligence as the ability to identify and manage your own emotions and the emotions of others. "
- Feel free to include personal experiences, but only if they are relevant to the readings.
- Ask questions in your response paper, even if you don't know the answers. This will lead to a fruitful discussion.
- After you finish enunciating all the points, have a conclusive statement at the end.

Submission by the students was done and written feedback was provided on google doc and discussion happened over the skype.

## 3. Creating an Outline

After reading of the research papers and important chapters from the books, students were directed to create an outline and submit in the fourth week. Now the outline was discussed for the content coverage and finalized for writing purpose.

## 4. Defining the Purpose and Scope Clearly for Writing an Abstract

By using *task scaffolding*, it was by specified how systematically they could draft their purpose of the report. For this a sample for purpose and scope was discussed and students were motivated to build on their experiences and knowledge. Teacher modeled the steps in the task, verbalizing her thought processes for the students.

## 5. Background and Description of Problem

Content- and task-specific questions were given to scaffold the SOP I and SOP II students to ask each other pertinent questions about their specific topic and content area.

## 6. Literature Review

In this area the students were asked to present an overview of the economic, political or social influences and/or the micro factors that enable the reader to put the report issues (see below) into context or perspective. Here *cascade scaffolding* was used for helping the students provide a review of the existing literature in their chosen field of study and for moving from one section to the next, so that the report grows and develops in its contents.

## 7. Chapters describing what you have done, focusing on different aspects of Work

Cognitive Scaffolding was used for the development of conceptual and procedural understandings. **Concept and mind maps** were used to scaffold construct the knowledge Students create their own maps of relationship between and among the different set of information based on their current knowledge of the task or concept.

This is the main body of the report which may be divided into multiple sections as the case may be. They were asked to have different sections which delve into different aspects of the problem.

The organization of the report here was made problem specific. They were guided to have a separate section for statement of design methodology in case of SOP I, and experimental methodology in case of SOP II.

## 8. Conclusions

Based on the discussion and results of the findings the students were asked to draft conclusions of the study.



## 9. References

Students were asked to use APA for and modelling Technique of scaffolding was used to help them in acquiring the skill with much ease.

## 10. Editing and Proof reading

Students proofread for conformity to the conventions of the English language and logical organization of the contents. And also check for spellings, font and formatting for final submission

This study reflects the use of TRAC (Talk, Reasoning and Computers) for guiding the study oriented projects. This concept was pioneered by Mercer and Wegerif (1999) who used as a tool for scaffolding collaborative language learning [9].

## Conclusion

Technical Scaffolding helps students become less dependent on instructional supports as they work on tasks and encourage them to practice the task in different contexts. It coupled with cognitive scaffold promotes learning through dialogue, model, content and task specific questions, concept and mind map, feedback and shared responsibility. Through the supportive and challenging learning experiences gained from cautiously planned scaffolded learning, teachers can help students become lifelong, independent learners. The study highlighted how a graduate student can be trained to become an independent learner.

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