

# Marzano's Dimensions of Learning: Observations from a Technical College in Rural Saudi Arabia

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DOI: <https://doi.org/10.5281/zenodo.6821328>

Published Date: 12-July-2022

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**Abstract:** This article is a look at the application of Marzano's Dimensions of Learning in a post-secondary vocational college in rural Saudi Arabia by instructors, who have had no training in the implementation of the Dimensions of Learning, by way of objectively observing and then critically analyzing the lessons, followed by giving evidenced-based recommendations to ensure a more learning and thinking oriented lesson delivery. The lessons observed were vastly different as one lesson was a beginning level English as a Foreign Language lesson which introduced a topic, while the other was a vocational-technical lesson serving as a final review. Briefly noting previous studies and recommendations of research done in the Kingdom of Saudi Arabia, the article will conclude that the Dimensions of Learning model is worth investigating further in vocational education in Saudi Arabia.

**Keywords:** Dimensions of Learning, International Technical College, English as a Foreign Language, Vocational Education, Saudi Arabia.

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## I. INTRODUCTION

The Dimensions of Learning (DOL), first published in 1992, grew from work by a team of researchers lead by Robert Marzano to establish a practical pedagogical framework, for teachers in K-12 education to use regardless of context in any content area. The DOL framework promotes that learning involves five categories of learning which, unlike Bloom's taxonomy, are not hierarchical in structure, but instead interrelated (Curry & Samara, 1990). These five dimensions are: 1) Positive Attitudes and Perceptions About Learning, 2) Thinking Involved in Acquiring and Integrating Knowledge, 3) Thinking Involved in Extending and Refining Knowledge, 4) Thinking Involved in Using Knowledge Meaningfully, and 5) Productive Habits of Mind (Marzano, 1992).

The anecdotal observations and critique of the lesson delivery presented here are of two different lessons, one an English as Second Language (ESL) lesson and the other a vocational lesson involving electrical students, at an all-male International Technical College (ITC) located in a rural town in the Kingdom of Saudi Arabia. Marzano's DOL form the basis of the areas of objective observation and critical analysis. To perform the observations, a small video camera, inconspicuously placed in both the classroom and technical laboratory, allowed for the classes to proceed as normally as possible. Also, note that neither the teachers being observed, nor any of the teachers in the college, received the recommended four-day teacher training for implementing the DOL. Each observation will conclude with recommendations that the teachers could use to make the lesson more learning and thinking oriented.

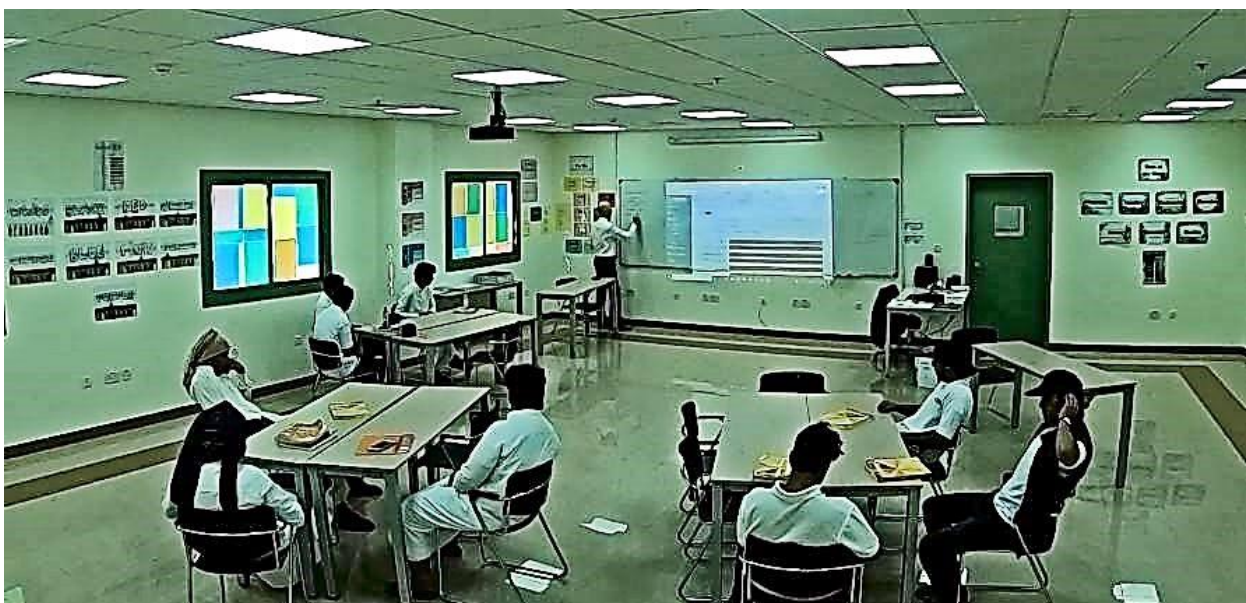
## II. ENGLISH AS A FOREIGN LANGUAGE LESSON

The first observation was of a beginning level English as a Foreign Language (EFL) class. The textbook for this class is Interchange Fifth Edition Intro by Jack C. Richards labeled as A1 by the Common European Language Framework (CEFR). However, many students in the class begin with no real English ability, sometimes unofficially described as

having a CEFR level of A0. This lesson introduced a unit where the terminal objective was for students to be able to discuss and identify different stores and places and items bought or gotten there, as well as for the students to be able ask and give directions to these locations. As previously stated, the DOL are intended to be unit based (Marzano & Pickering, 1997). Consequently, in this introductory lesson all five of the DOL were not observed, but they might occur later in the unit.

### *Dimension 1 – Observation*

The teacher arrives with some students already seated and begins preparing for the lesson. He displays the attendance register in the middle of the whiteboard and writes the objectives along the side of the board. As shown in Figure 1, the classroom is air-conditioned, well-lit, clean, and orderly. Colorful posters with various English words decorate the walls. Windows covered with thin colored paper give a stained-glass effect preventing glare from the early morning sun shining directly into the room. Tables, arranged into three groups, foster and encourage students to easily work in teams and pairs, necessitated by the fact that there were not enough textbooks for each student. The students sit quietly, with their books closed waiting for instructions from the teacher.



**Figure 1: Students waiting for class to begin in Saudi Arabia**

The teacher makes a comment about the King of Saudi Arabia visiting the province, then proceeds to take attendance when suddenly, the lights in the room (and on the entire floor) go out, but the projector remains on. After this, the teacher goes around the room with a box and collects the cell phones of the students. After about nine minutes of classroom administrative work, the lesson finally begins.

He asks the students to open their book and points out the different shops on the Presentation Plus display of the student's textbook on the whiteboard. He gives the British English term "petrol station" for the picture of the gas station. He mentions that they don't have department stores in Saudi Arabia, instead they have shopping malls. He continues, asking the students the name of the big bookstore in Saudi Arabia. The students do not reply so the teacher tells the students, "it's called Jarir". Next, he models doing the matching activity from the textbook and gives the students five minutes to answer the questions, giving pens to the students that do not have them. The teacher monitors some of the students work. He opens the window to let in some light and prompts the students, "Wakey, Wakey boys!" Then he elicits from the students the answers to the activity and writes the answers on the board. He then has the students listen and repeat as he pronounces each location.

The ring from a cell phone in the box interrupts the task; a student goes to the front of the room to collect his phone and leaves the classroom. The teacher plays an audio recording with sentences from matching, repeating the location for the students to say. He closes out the matching task by recapping the items and location matching.

***Dimension 1 – Critical Analysis***

As evidenced in the observation, the teacher did the best that he could do, under the circumstances, to provide a positive classroom environment for learning as the classroom as clean, organized, and safe. The table arrangement allowed for group work and the sharing of the available textbooks. The teacher had pens available for those who needed one and was friendly to the students addressing them by name and giving praise when a student gave the correct answer. The students were shy to give answers unless they knew it was the correct answer.

The other component to this DOL concerns the perceptions of the tasks. The teacher did model tasks somewhat effectively and did checking to ensure that the students understood what to do. Likewise, the teacher did well to ensure that all students had access to the necessary resources, a book and pen, to complete the task. What seemed to be missing was the perception that these tasks were valuable and interesting as at each step, it was the teacher and not the students writing correct answers on the board.

***Dimension 2 – Observation***

The teacher proceeds to the second activity, a phone conversation. He explains that it more difficult to talk on the phone in another language than when you speak face-to-face. He stresses that the students must practice talking on the phone in English, because of how difficult it is. He then reads the directions from the screen saying, “I beg your pardon,” realizing that he made a mistake in setting the context of the conversation. He works the first question with the class to model the activity. He plays the recording and asks the class where the people talking in the recording are going. A student gives the correct answer, and the teacher writes it on the board. Then the teacher does the same for the ‘what they were calling about prompt’, saying, “Excellent!” to the student that gave the correct response. The teacher asks, “What is a magazine in Arabic?” and a student replies, “majla”. The teacher plays the audio again, being interrupted by a student getting a hall pass to go to the bathroom, then starts the recording again. The lights come on, he explains the future tense grammar in the recording and stresses, “the future with ‘going to’ is in the assessment.” He starts the recording again but stops to explain the word ‘terrible’ and following the explanation restarts it. At the point where the recording answers the activity’s ‘Where’ question, he stops the recording and elicits the answer writing it on the board. He does the same for the ‘What’ question and finally recaps the answers at the end of the activity.

***Dimension 2 –Critical Analysis***

Here the teacher started with perhaps a too long introduction, which would have been better served towards a later stage of the lesson. Instead, the focus should have been more with the task presented to the students. While the teacher did try to localize the lesson for the students, a better approach would have been to use flashcards or pictures presented on the screen to show the students. The teacher should have better considered the low level of the students second language ability (L2) and called upon the prior knowledge of the items in their first language (L1) of Arabic to better draw a connection. Indeed, without a strong foundation to this new declarative knowledge the lesson could have no real significance for the learners, as evidenced by the passive participation of the class as a whole as shown in Figure 2.



**Figure 2: An active teacher with passive students in Saudi Arabia.**



The material for Interchange integrates this declarative knowledge effectively by scaffolding the activities layer upon layer. Instead of eliciting the answers directly, the teacher should have followed the teacher's manual by allowing the students to check their own work through listening, only then eliciting answers from the students. Instead of the teacher writing the answers for the students to merely copy, having students come to the board to write the answers, say one student per answer, would have brought meaning to doing the activity, fostering a link between this DOL and DOL 1 signaling to the students the importance of the task.

Unfortunately skipped, the pair work activity for this task was an opportunity for the students to better organize and store the newly declared knowledge by expanding on the task and supplementing it with graphic organizers. An additional activity to develop declarative knowledge would be to use the Vocabulary Tennis game (Richards, 2017) to stimulate the otherwise passive students with a competitive activity to assist them in maintaining their declarative knowledge for this topic.

#### ***Dimension 3 and 4 – Observation and Critical Analysis***

In the span of this observed one-hour lesson, there was little to note regarding the concepts of extending and refining knowledge as highlighted in DOLs 3 and 4. Within the framework of the DOL, this is acceptable, as the DOLs are best implemented over a unit. Later in the unit, there are opportunities for this DOL to occur.

#### ***Dimension 5 – Observation***

During this observation, there was little to note with DOL 5. In the listening task, the student must fill in a table by writing the item in the space for "What..." and in the "Where..." spot, the location. When time comes for the third item, the teacher stops the recording after another 'Where' answer and writes the answer on the board. Yet, on restarting the audio, the audio says that they never go to this place, the supermarket. The teacher explains that this is a distractor saying, "I got distracted." And then he erases the answer and writes in the correct answer.

#### ***Dimension 5 – Critical Analysis***

Critical thinking is one of three components of DOL 5, Habits of Mind, where, among other aspects, students are encouraged to be accurate in their work (Marzano & Pickering, 2009). Indeed, The Economist (n.d.) states being able to distinguish distractors to arrive at accurate answers are what critical thinking questions are all about. When playing a recorded dialog, the students are best served by playing the dialog in its entirety, allowing them the opportunity to hear the distractor alongside the correct answer. Granted this is a very basic example, but one must take into consideration the low level of the lesson and activity being done.

#### ***Recommended Areas for Improvement***

The teacher seemed a bit unprepared for the lesson, as evidenced by issues in the second task. Being told a different context from the one in the lesson caused confusion. Additionally, getting tripped up with the distractor did no favor to the students. The Teachers Edition of Interchange lays out learning objectives for each task. The teacher's familiarity with these objectives would allow the students to be better aware of the value and importance of the task. It also would ensure that the teacher gave correct instructions and allow room for exploring ways to expand the potentials of the task. Indeed, as constructivism is at the foundations of the DOL, students should be encouraged to work together – as their seating arrangement easily allows – to foster personal relationships and teamwork skills to develop a more positive attitude in completing the lesson tasks and activities.

Also, the teacher should look at encouraging students to write an answer, even an incorrect answer that could be used as a teaching opportunity, by changing from pens to pencils in the classroom as a mistake from pencils can be erased, whereas mistakes made with ink are permanent. One additional comment relating to DOL 5 is while there were posters decorating the classroom, as mentioned in the DOL 1 observation section above, adding posters that encourage students to do their best work and have all their materials available would emphasize self-regulated and creative thinking (Brown, 1995).

### **III. VOCATIONAL LESSON**

The second observation was of a vocational class held in the electrical laboratory. This class was a mixed level class consisting of two groups of students. One group of students were in the final stages of study for a Diploma in Electrical Technology, taught by a bilingual Arabic and English-speaking teacher. The second group were preparing for their mid-

term examination in the final stage for an Associate Diploma in Electrical Technology, taught by a bilingual Malay and English-speaking teacher. The students in these classes should have a CEFR at least A2, nevertheless their effective language ability was noticeably lower. In this class, the students were reviewing the knowledge and practical skills required for their upcoming capstone projects. For the purposes of this observation, the focus will be on the DOL observed during the entire class, regardless of group or teacher.

### ***Dimension 1 – Observation***

The class was on Wednesday morning after the students' mid-morning break. Students were somewhat slow arriving due to the more relaxed atmosphere in the lab when compared to a more normal classroom. The teachers prepared the different work areas, called stations, to reflect the different skills and tasks the students needed to accomplish. The lab was very well lit, and the temperature of the room was quite comfortable, with proper safety protocols in place, creating a safe learning place for the students. The teachers greeted each student when they arrived and ensured that they had safety shoes, mandatory for working in the lab.

Each workstation had an outline worksheet that provided a checklist showing what the students needed to accomplish. The students had free access to any materials and tools that might be needed. From time to time, the teachers would visit the workstations to ensure the students were on task and point out areas that could be improved or help clarify the task, especially where the students had issues due to their English ability by speaking to them in Arabic.

### ***Dimension 1 – Critical Analysis***

In focusing on the student's attitude and perceptions in the classroom for this session, one could see that the students were comfortable in the lab environment. The teachers trusted the students to work somewhat autonomously throughout the lesson, which the students seemed to appreciate. The students had a clear understanding of the lesson, realizing its value and importance. Consequently, they had great interest in completing the tasks. The task and work areas were clean, and the teachers gave clear instructions and when needed, clarified any ambiguity for the students. Both teachers here displayed very good awareness of DOL1, as reflected by the students work in the class session.

### ***Dimension 2 – Observation***

For DOL2, there was not much to observe regarding the students' acquisition and integration of declarative and procedural knowledge. The teachers did state the goals of each workstation area, and after giving time for the students to internalize the information, check for their understanding by asking questions of the students. Likewise, the teachers also explained the steps required for successful completion of the tasks. Lastly, a teacher explained, "This is practice for your Capstone Evaluation, you must pass this to get your diploma." After the introduction, the students began working on their projects.

### ***Dimension 2 – Critical Analysis***

As this lesson was a capstone review, it is understandable that DOL 2 was not a feature set of the lesson. Where needed, the teachers adequately outlined the processes required during the lesson. The teachers stressed the importance of the task, and the students were aware of what they should do. The students followed the procedures as presented.

### ***Dimension 3 – Observation and Critical Analysis***

In this lesson, there was nothing to report here for DOL 3. As mentioned, within the framework of the DOL, this is acceptable. Undoubtedly, previous lessons stressed the concepts contained in DOL 3, as the extension and refinement of knowledge is essential to move into DOL 4, which was the focus of this lesson.

### ***Dimension 4 – Observation***

The teachers, for the most part, let the students use the knowledge gained throughout the semester to meaningfully apply that knowledge by working independently in different possible scenarios that the students might encounter during the final capstone tests. The teachers were mostly non-interventionist in their approach to the lesson as shown in Figure 3 below.



**Figure 3: Students working autonomously in pairs in a technology class in Saudi Arabia.**

This lesson challenged the students to work autonomously and apply decision and problem-solving skills to investigate and perform system analyses to determine faults in the electrical circuitry set by the instructors.

#### ***Dimension 4 – Critical Analysis***

The students seemed keenly aware and willing to work together to probe for solutions to the issues they encountered. The teachers did an excellent job of making sure the students were able to work independently, yet stepped in when needed, allowing students to come up with their own solutions to resolve the various scenarios presented. Indeed, this lesson reinforced authenticity in the classroom, a fine example of what Brown (1995) said about DOL 4, “the jewel in the crown of Dimensions of Learning.”

#### ***Dimension 5 – Observation***

The classroom, decorated with many signs and posters, reminded the students of the importance of safety when working with high voltage electrical equipment, as shown in Figure 4. The teacher pointed out the location of the various resources such as tool kits, wires, drill stand, and electrical components needed. Additionally, the teacher monitored the students work from time to time, asking questions such as, “Why did you attach the junction box here?” and “Would the switch be better over there?”



**Figure 4: Safety posters in a technology class in Saudi Arabia.**

***Dimension 5 – Critical Analysis***

Again, the teachers did an outstanding job ensuring DOL 5 was present in their classroom. The safety posters were there to reinforce the mental habits of the students getting ready to work with electricity. The students worked together in a spirit of cooperative learning when needed to assist each other to complete complex tasks. Additionally, the teacher challenging the students work, as well as setting the foundation of practicing for their important capstone, encouraged work to be accurate. Self-regulated thinking was surly stressed as the students worked mostly without teacher intervention.

***Recommended Areas for Improvement***

As a whole, this lesson was well done. The teachers arranged the lab into the various work areas and had the necessary equipment, tools, and safety gear organized and available to the students. Moreover, they had clear well written outlines ready for the students and were available to answer any necessary questions. The only area for improvement related to DOL 5, in that some of the students were late to class, did not wear their uniforms and forgot to wear the proper safety gear. Safety is perhaps the most important concept for electricians to follow as it is one of the top 10 most deadly jobs for men (Ward, 2017). Moreover, being on time and appropriate dress is a sign of professionalism in the workplace and could have “severe consequences” for their chosen career if not observed (McKay, 2018).

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