



Critical Thinking In Self-directed Study With EmoEles

LESSON 3
BY CLEDOR EDUCATION



OBJECTIVES

- Demonstrate an understanding of the elements of the PAR.
- Understand the relationship between the PAR and Bloom's taxonomy.



This lesson is based on a short emotive story with few hidden mnemonics that make it easier for you to reach the objectives and learn how to use EmoEles. Enjoy!



Once Upon a Time in ScooVille





In a little town called ScooVille, lived a single mother with her two sons. The older son was Saddy and the other was Kunte. She was about three months pregnant with a third child when her husband left home and did not return. When it was time for her to birth, she went to the town's hospital. She was overjoyed to hear that she had given birth to a healthy, cute, and bouncy baby boy.



After an hour following her birthing, the nurses had still not brought her baby. She became anxious. Just a moment after the second hour, a pediatrician announced to her that her son had survived for only two hours.



She fell to the floor. She slapped the floor several times and wept. Nobody could console her. After school, her two sons went to the hospital upon hearing the news. They wept with her.



Finally, they had to leave for their home without even seeing the body of the lost baby.



Back at home, Kunte made her mother a promise that he would study to be the best pediatric doctor the world had ever seen; and that he would make sure not a single baby will ever die again, be it before birth or after birth.



There, Saddy also promised his mother that he would study well to be a lawyer so that he could defend people who have no one to speak for them.



When they went to school the following day, they told their learning interventionist what had happened. The interventionist tried to console them. During the night, Kunte dreamt and found himself in a large kingdom founded by a king called **High Bicou**.



The kingdom was called **Head Cap**. There, Kunte was elected by the inhabitants as the new king of **High Bicou's Head Cap**. He was glad and accepted to lead them. When Kunte got up in the morning, he told the dream to his mother.



The mother said to him: “Perhaps, in the future, you will be king my son. If not, you will certainly lead many people”. She advised him not to tell anyone about his dream, not even to his brother.



In ScooVille, there was a tributary in which people fished. Kunte, Saddy and their friends went there one day against the wish of their mother to have fun. When they got there, Kunte quickly changed his mind and decided to go back home.



His attempt to bring Saddy and friends back with him failed. While Kunte was returning home, he got to a crossroads where he heard a voice in the bushes saying repeatedly:



“...Promote Quality Reading! All Schools Rise! Recites a robot!”


“...Promote Quality Reading! All Schools Rise! Recites a Robot!”



He wanted to know from where that voice was coming so he went into the bushes and found that it was a device that looked like a doll. It was a robot. He took it and quickly ran back home.




When Kunte went to school the following day, he took it with him. He and his friends wanted to understand what the robot meant by the words that it spoke, so they went to their learning interventionist for help.




The interventionist explained to Kunte and his mates what the robot meant. She said to Kunte: “It appears this robot understands very well who you are and what is dear to your heart.



In the robot's words, it tries to show you what you should do so that your promise to yourself and your mother may be fulfilled.



“You promised that you would study well to be the best pediatric doctor the world has ever produced?” She asked him. “Yes, I did.” Kunte replied.



“Well then, according to your robot, whenever you study, you must do nine (9) activities, just as there are nine words in the robot’s statements...”.




“Each word in the robot’s statements begins with **a letter** that indicates the **activity that you must perform** and the **order of the words** indicates the **order** in which the **activities must be performed**.



The robot's statements: **'Promote Quality Reading! All Schools Rise! Recites A Robot!'** consist of words that begin with the letters **P, Q, R, A, S, R, R, A, and R**, in that order.



This means the first activity that you must do when you study will begin with the letter 'P', the next activity will begin with the letter 'Q', the next, with the letter 'R' and so on.




This process of determining and remembering the activities that you must perform when studying and the order in which you must perform these activities is called the PAR-Drill. The study application that is derived from using the PAR-Drill is the PAR...”

To be continued...



EXPLANATION

- A kingdom founded by a king called **High Bicou**
- Kingdom called **Head Cap**
- Kunte elected as a king of **High Bicou's Head Cap**
- ... voice in the bush saying repeatedly “**Promote Quality Reading! All Schools Rise! Recites A Robot!**”
- Nine activities as there are nine words in the robot's statements

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- **P, Q, R, A, S, R, R, A and R** (activities to be done when studying in that order).
 - PAR-Drill (helps to determine and remember the PAR, which is the study application)
 - PAR (study application derived from the par-drill)



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Promote-Preview: to get a general idea or a bird's eye view of what you are about to study. Do this by studying the **emphasized words** in the passage namely: **high**lighted words, **bold** words, **italicized** words, **colored** words, **underlined** words, **sub-headings**, **headings**, and **captions**. (Refer to the story. Use **High Bicou's Head Cap** as a mnemonic to recall these emphasized words.)



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Quality - Question: Set questions about the emphasized words that you have identified. Ask good questions using question words such as; **when, where, who, what, why, how,** etc. Use **Bloom's taxonomy** to set questions for different levels of cognitive assessment and achievement.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Write down your questions in your EmoEles study notebook. You will learn how to record your questions with the help of a video demonstration later in this course.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Reading - Read: Read carefully to find answers to your questions, starting with the main textbook or learning medium that you are studying.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

All - Analyze: Do a critical examination of the answers you have identified. Do this by checking from other sources such as other textbooks, your dictionary, credible online sources, teachers, etc... to find out what other authors have also contributed to the emphasized concepts.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

You should still do this analysis even if your main textbook does not offer an answer to a question. You will find your answers through your analyses if your question is a good one.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Schools - Synthesize: Put the ideas you found through your analysis in your own words just the way you understood them. Your syntheses should be comparatively unique but true.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Rise - Record: Write the answers to your questions in your EmoEles study notebook. You will learn how to record your syntheses/answers with the help of a video demonstration later in this course.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Recites - **Recall/Remember**: Cover your answers and test your ability to remember your syntheses that you created for your questions. What you recall does not necessarily have to be the exact copy of what you had recorded. It should simply be true.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

You can use mnemonics when necessary to help you do this. You will learn more about mnemonic devices in another course.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

A - Apply: Use or practice what you have studied. Remember, one basic principle of your brain concerning your memory is “**use it or lose it**”. Every healthy brain will eventually forget or discard what it’s owner does not use. It is by consistently applying what we learn that we become skillful at it.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Where it is difficult, unwise, or impossible for you to practice, you may download or find a video on the subject and study what is involved in its application pending the time when you can safely proceed.



NOTES ON THE PAR

Critical Thinking in Self-Directed Learning with EmoEles

The PAR-Drill and the PAR

Robot - **Revise/Review:** Review what you have studied and make sure you have done the right thing. Your review should be continued periodically, using the EmoEles system of spaced repetition.



The PAR

In practice, the 9 activities in the PAR are reduced to a relatable 3 as follows:

1. SET QUESTIONS
2. RECORD ANSWERS
3. REVIEW OR REVISE



In practice, the 9 activities in the PAR are reduced to a relatable 3 as follows:

1. SET QUESTIONS (a preview is required to set questions)
2. RECORD ANSWERS (read, analyze, synthesize and then record your synthesis in your notebook)
3. REVIEW OR REVISE (test your recall by initiating the EmoEles system of spaced repetition and identify opportunities for application of learning as key parts of your review)



NOTES ON THE PAR Cont'd

You will learn about the EmoEles system of spaced repetition later in this course.



Deriving the PAR?

The PAR is derived from a chunking of the 9 activities that operationalize EmoEles:

Preview, Question, Read,

Analyse, Synthesize, Record,

Recall, Apply, Review



Deriving EmoEles?

EmoEles is stylized after M.O.L.S (Em-O-El-Es)

M.O.L.S. is an acronym for *Mensah-Okyere Learning System*.



Bloom's Taxonomy of Educational Objectives

Introduction

The American Psychological Association had a convention back in the year 1948 during which a group of its members, who were educational psychologists, decided that it was important to categorize the **learning objectives** that examiners should set as well as the **types of questions** that should be used to adequately measure student attainment of those objectives.



Bloom's Taxonomy of Educational Objectives (Cont')

In other words, the group decided to classify different levels of attainment/achievements that students should reach in a subject course. The group was led by an American Educational Psychologist called *Dr. Benjamin S. Bloom* who chaired the works of the committee that was set up to look into the design of a taxonomy which came to be known as the *Bloom Taxonomy of Educational Objectives*. Upon detailed research, their work was first published in 1956.



Levels of intellectual or Cognitive Assessment and Attainment in Bloom's Taxonomy.

1. Remember (knowledge)
2. Understand (comprehension)
3. Apply (Application)
4. Analyze (analysis)
5. Synthesize (synthesis)
6. Evaluate (evaluation)



To help you remember the various levels of the taxonomy, you may use the mnemonic: Remy understood Appiah's Aunty since evening -

where Remy refers to Remember, Understood is to Understand, Appiah's to Apply, Aunty is to Analyze, Since is to Synthesize and Evening is to Evaluate



At this point , note the following;

Though Bloom's taxonomy involves similar terms as those used in the PAR, the taxonomy is related to only the “**Questioning**” activity in the PAR and is aimed at helping you to set questions that further challenge you to think critically.




Secondly, note that the meaning of the terms in the PAR may be different when used within the context of Bloom's taxonomy.

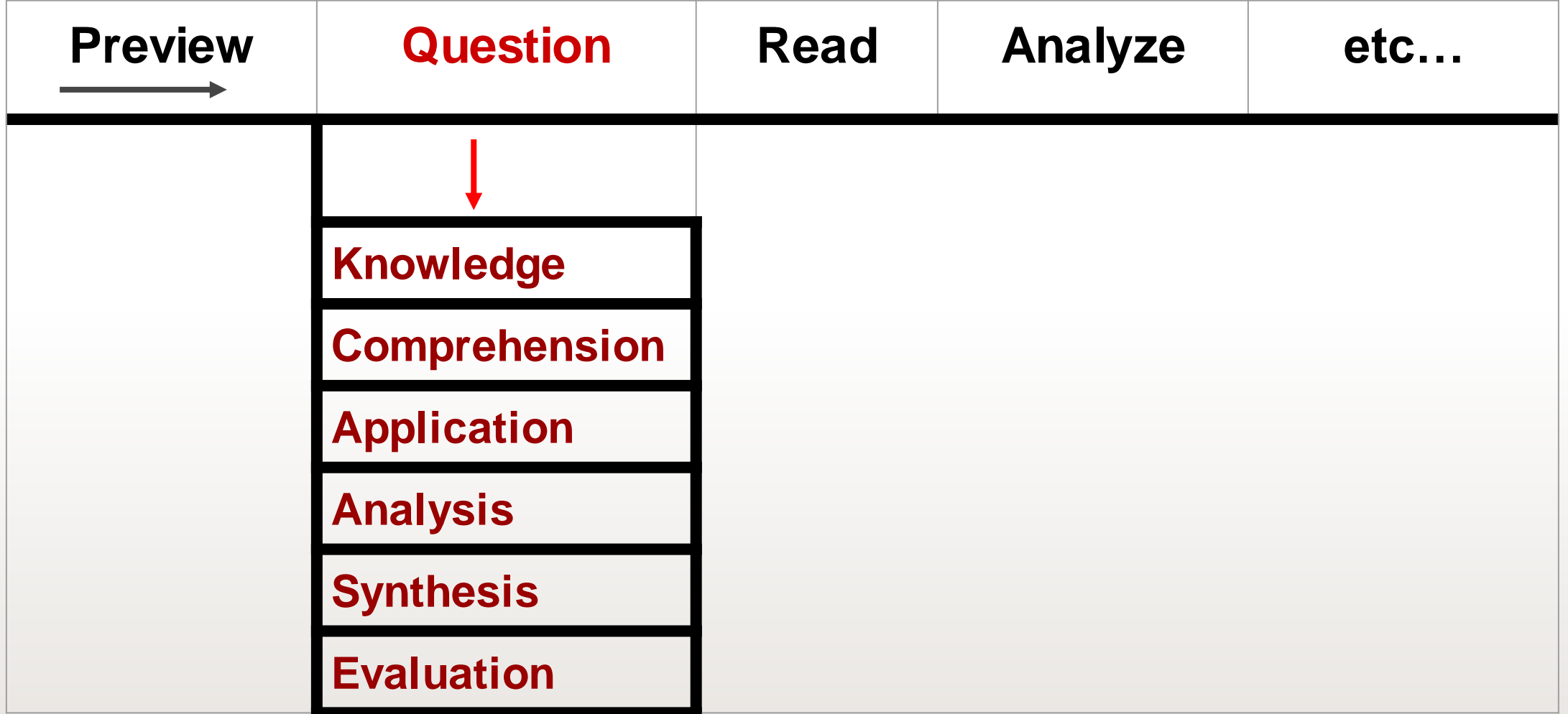
Thirdly, when using the PAR, you do not need to set questions that assess your thinking skills or knowledge at all the six levels described in Bloom's taxonomy, at a go.



Learners are advised to begin with questions at the levels such as **knowledge and comprehension** and study to master the content being learned at these two levels before proceeding to set questions that require higher levels of thinking such as application, analysis, synthesis, and evaluation.



Skills mastered at the knowledge and comprehension levels make it possible and easier for students to study at higher levels of thinking. The relationship between the PAR and Bloom's taxonomy is shown more clearly in the following diagram:



Relationship between the PAR and Bloom's taxonomy



Level

Level Description/ Attributes

Keywords

Examples of Assessment Questions

1. Remember (Knowledge)

requires students
to do rote
memorization,
recognition, or
simple recall of
facts

how, what, where,
who, why, when,
show, select, list,
recall, choose,
find, define, label,
spell, match,
name, relate,
tell, omit

How is ..?
How did .. happen?
What is ...?
where is...?
who was ..?
who were the main ..?
why did ..?
When did ..?
When did.. happen? How
would you show...?
could you select ..? Could
you list three ..? Could you
recall ..?

2. Understand (Comprehension)

requires students
to understand
what the facts
mean

explain, compare,
contrast,
interpret, classify,
rephrase,
summarise,
extend, illustrate,
infer, outline,
translate, relate,
demonstrate

could you explain what is
happening ..?
Could you explain what is
meant ..?
How would you compare
...contrast ..?
Would you state or
interpret in your own
words ..?
How would you classify
the type of ..?
How would you rephrase
the meaning ..?
How would you
summarise ..?
What is the main idea of
..?

3. Apply (Application)

requires
students to
correctly use
the facts, rules,
or ideas

apply, make use
of, construct,
develop,
organize,
experiment with,
plan, select,
solve, calculate,
change, utilize,
model, build,
identify

How would you apply what you
learned to develop ..?
What approach would you use to
..?
How would you use..?
How would you construct..?
Would you develop ..?
How would you organize ... to
show ...?
Would you experiment with ... to
show ..?
What other way would you plan to
..?
What facts would you select to
show ..?
How would you solve.. using what
you have learned ..?
How would you calculate ..? What
elements would you choose to
change ..?

4. Analyze (Analysis)

requires
students to
break down
information or a
concept into
parts

analyze, divide,
relationships,
classify,
categorize,
distinguish,
distinction,
function,
examine, inspect,
simplify, test for,
take part in,
dissect

Could you analyze..?
Would you divide..?
How is ... related to ..?
What is the relationship
between...?
How would you classify..? How
would you categorize...? Could
you make a distinction
between...?
What is the function of ... in...?
Could you examine ..?
Could you simplify ..?
How would you test for...in..?
Could you identify the different
parts ..?

5. Synthesize (Synthesis)

requires
students to
combine facts,
ideas, or
information to
create a new
whole

Create, build,
construct, design,
invent, originate,
original, elaborate,
propose, test,
combine, compile,
change, modify, plan,
improve, happen,
minimize, maximize,
suppose, formulate,
predict,
estimate, compose,
makeup, develop,
adapt, imagine,
solve, solution,
discuss, modify,
delete, theorize


How would you adapt ... to create a
different ..?
Could you construct a model that would
change ..?
Could you construct/build ..?
How would you design ..? Could you invent
..?
Could you think of an original way of/to ..?
Could you propose an alternative..?
How would you test..?
How would you combine..?
What facts can you compile..?
What changes would you make to solve..?
How could you change (modify) the plot
(plan)..?
How would you improve ..?
what would happen if ..?
What Could be done to minimize
(maximize)...?
Suppose you could... what would you do..?
Could you predict the outcome if ..?
How would you estimate the results for ..?

6. Evaluate (Evaluation)

requires
students to
judge or form
an opinion
about the
information or
situation

Judge, justify, award,
choose, choice, criticize,
conclude, evaluate,
decide, recommend,
defend, determine, rate,
select, explain, prioritize,
importance, opinion,
support, agree, prove,
disapprove, give
reasons, better interpret,
assess, influence,
perceive, value, criteria,
compare, mark, deduct,
appraise, rule on,
influence, estimate,
measure, dispute

What judgement would you make about..?
How would you justify ..?
what would you award ..?
Why did they (the characters/author(s))
choose ..?
What choice would you have made...?
Could you criticise...?
What data was used to conclude ...?
How would you evaluate ..?
Could you decide..?
What would you recommend..?
What would you cite to defend the actions ..?
How could you determine ..?
How would you rate the ..?
What would you rate the ..?
What would you select ..?
Based on what you know, how would you
explain..? How would you prioritize..?
Can you assess the value/ importance of ..?
What is your opinion of ..? What information
would you use to support the view ..?



Some Basic Questions for Your Consideration

What

....does this mean?
.... is most/least important about this?
.... works best with this?
..... can be done to make a positive change?

....is another way to do this?
....will get in the way of this?
....works the least with this?
.... is the preferred end result?

Who

.... will benefit most/least?
... will be against this?
.... will be a good influencer?
.... should be contacted?

...have I/you also heard discuss this?
...will help sustain this?
....is responsible for this?
.... should be recognized for this?

When

....is the best time to act on this?
...will this benefit society?
... will this be harmful to society?
...should the public know about this?

....is this expected to change?
... should I/we ask for help?
....has this ever been considered?
..... will people become fed-up with this?

Where

...has this been seen/done before?
.. should this begin/end?
..do I/we go for help with this?
.....do I/we avoid at all cost?

....will this idea take us?
....can we find ideas to improve this?
...can this be harmful to society?
... should this be protected?

How

... is this done?
... do we make this work?
..... is this similar to another?
.....can this be improved?

....can this be done safely?
.....has this been done in the past?
....are people affected by this?
....has this been used/done in the past?

Why

.....is this necessary?
.... is this the way it is?
..... does this harm/benefit society?
.... is this the best way out?

.....is this the worst way out?
.... should this be changed now?
... are people affected by this?
....has this been used/done in the past?



The PAR-Drill & The PAR

- SET QUESTIONS
- The Bloom Influence for Higher Order Thinking

Blooms Taxonomy



Blooms Taxonomy - Revised



WHICH OF THE TWO TAXONOMIES ABOVE APPLIES BEST IN INDUSTRY? NB: CREATING IS THE SAME AS SYNTHESIZING.



Thank You