

Problem Statement

Learners who take TOEFL listening tests want to improve their test performance (measurable standardized test scores) in a short period of time (e.g. ranging from 2 to 6 months).

Improve standardized test results

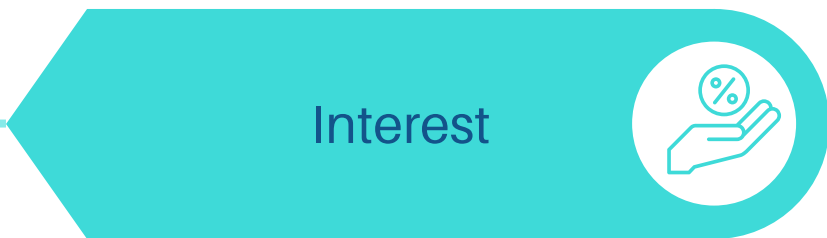
More effort need to be put in.

Improve confidence and motivation to commit to learning.

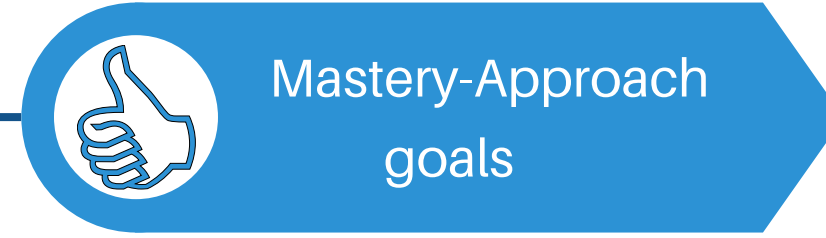
If they meet academic domains that they are not interested in, they tend to think they are not capable of learning it well.

Learner's prior knowledge help them support understanding of the new knowledge.

(Walkington & Bernacki, 2014)



THEORY OF CHANGE



Learners' interest can help them to be more focused, engaged, and process information more effectively. Thus it is more likely to help them perform well. (Harackiewicz et al., 2016)

Interest: Situational interest is important in the development of individual interest (Hidi & Renninger, 2006).

Mastery-Approach goals can improve learners' motivation and performance.

(Elliot & Church, 1997)

When learners feel autonomous, they are more likely to be more engaged in the learning activity

(Evans & Boucher, 2015)

Learners are most motivated by tasks at intermediate level of difficulty.

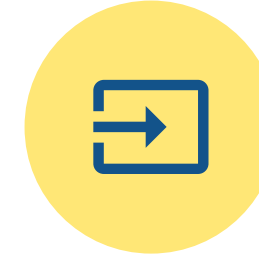
(Deci & Ryan, 1985)



Isolated Elements theory

Instructing individual elements rather than instructing simultaneously is more effective

(Sweller et al., 2019)



Expertise Reversal effect theory

Experts learn best from having little teaching.

(Sweller et al., 2019)



Self-testing

Self-testing improves learning and retention.

(Dunlosky et al., 2015)

THEORY OF CHANGE (continue)

Impact

- Learners earn a better chance of being accepted to a more competitive university.
- Enhanced English listening skills help them have a better adaption to university.

Long Term Outcomes

- Learners' listening skills improved, which is reflected in their scores on the final mock test and the official test, which meet the desired goals.
- Confidence and motivation are enhanced.

Short Term Outcomes

- Learners are able to understand a portion of (50%-70%) intermediate difficult listening conversations and lectures beyond their prior knowledge level.
- The stage test scores are improved to a higher level.

- In the sentence by sentence intensive listening task, learners are able to understand 85% of the 1st time, 90% of the 2nd time and 95% of the 3rd time.
- Vocabulary becomes larger.

Outputs

Standardized teaching syllabus; Materials, assignments and assessment for learners with different characteristics.

Individualized tutoring materials, assignments and assessment for each learner. Vocabulary growth charts. Model stage exam reports.

Activities

- **Teachers** design syllabus and LISTENING METHODOLOGY according to the scoring rubrics for learners with different characteristics.
- They choose instruction method according to learners' characteristics (e.g. instruct little or instruct step by step).
- They choose learning techniques to personalize instruction (e.g. AR & video).
- They provide personalized assignments after each class based on learners' **interest** and **prior knowledge**.

- **TAs** provide personalized tutoring (GRAMMAR, PRONUNCIATION and VOCABULARY) for each learner.
- They use vocabulary and mock test softwares to manage learners' vocabulary and test result.
- They create Growth Charts to visualize learners' process to emphasize their improvement and thus increase their motivation and interest.

Inputs

- **Students taking TOEFL Listening test.**
- **Teachers who know the standardized test well.**
- **MOCK test softwares and vocabulary software.**
- **Research about efficient instructional methods.**

Objectives

Category

By the end of this course, learners will be able to...

1

Vocabulary

1.0 memorize different vocabularies for different levels of learners.

2

Motivation

2.0 be engaged more in the test and more effort is put into learning.

3

Grammar

3.0 translate accurately (correct rate 85%+)
3.1 understand the sentences corresponding to the relative grammar points during listening

4

Intensive listening

4.0 understand more accurately each time in the sentence by sentence intensive listening task

5

Listening ability

5.0 enhance the overall listening skills which are reflected in their scores on the final mock test and the official test, which meet the desired goals.

Materials

Objectives

Materials

1 Vocabulary

1.0 memorize vocabularies.

Use vocabulary software to have learners memorize vocabularies.

2 Motivation

2.0 be engaged more in the test and more effort is put into learning.

Select topics related to the learners' interests as listening materials.
Introduce novel knowledge and use advanced learning technologies to personalize instruction to trigger situational interest.
Draw Growth Chart to emphasize improvement as a basis for evaluation and focus on quality of involvement and a continuing commitment to learning.

3 Grammar

3.0 translate accurately (correct rate 85%+)
3.1 understand the sentences corresponding to the relative grammar points during listening

Lecture notes on grammar knowledge. (3.0; 3.1)
Grammar translation assignments. (3.0)
Intensive listening conversations and lectures from TPO. (3.1)

4

Intensive Listening

4.0 understand more accurately each time in the sentence by sentence intensive listening.

Use listening software to choose articles with different difficulty and different academic domains.

5 Overall Listening Skills

5.0 enhance the overall listening skills & scores achieve the desired goals.

Choose listening passages from test software to lecture and assign practice tasks to learners with different characteristics according to the difficulty of the passages and academic domains.

Assessment

Objectives

Assessment

Vocabulary

1.0 memorize vocabularies.

Have learners conduct self-assessment using vocabulary software, which automatically identifies correct or incorrect words. Incorrect words are classified into the error list for learners to review. Vocabulary growth charts are drawn.

Motivation

2.0 be engaged more in the test and more effort is put into learning.

Questionnaires are administered to learners in the middle of and at the end of the course to collect feedback from learners.

Grammar

3.0 translate accurately (correct rate 85%+)
3.1 understand the sentences corresponding to the relative grammar points during listening

Learners do translation tests. (3.0)
Learners listen to conversations and lectures from TPO sentence by sentence and compare accuracy. (3.1; 4.0)

Intensive Listening

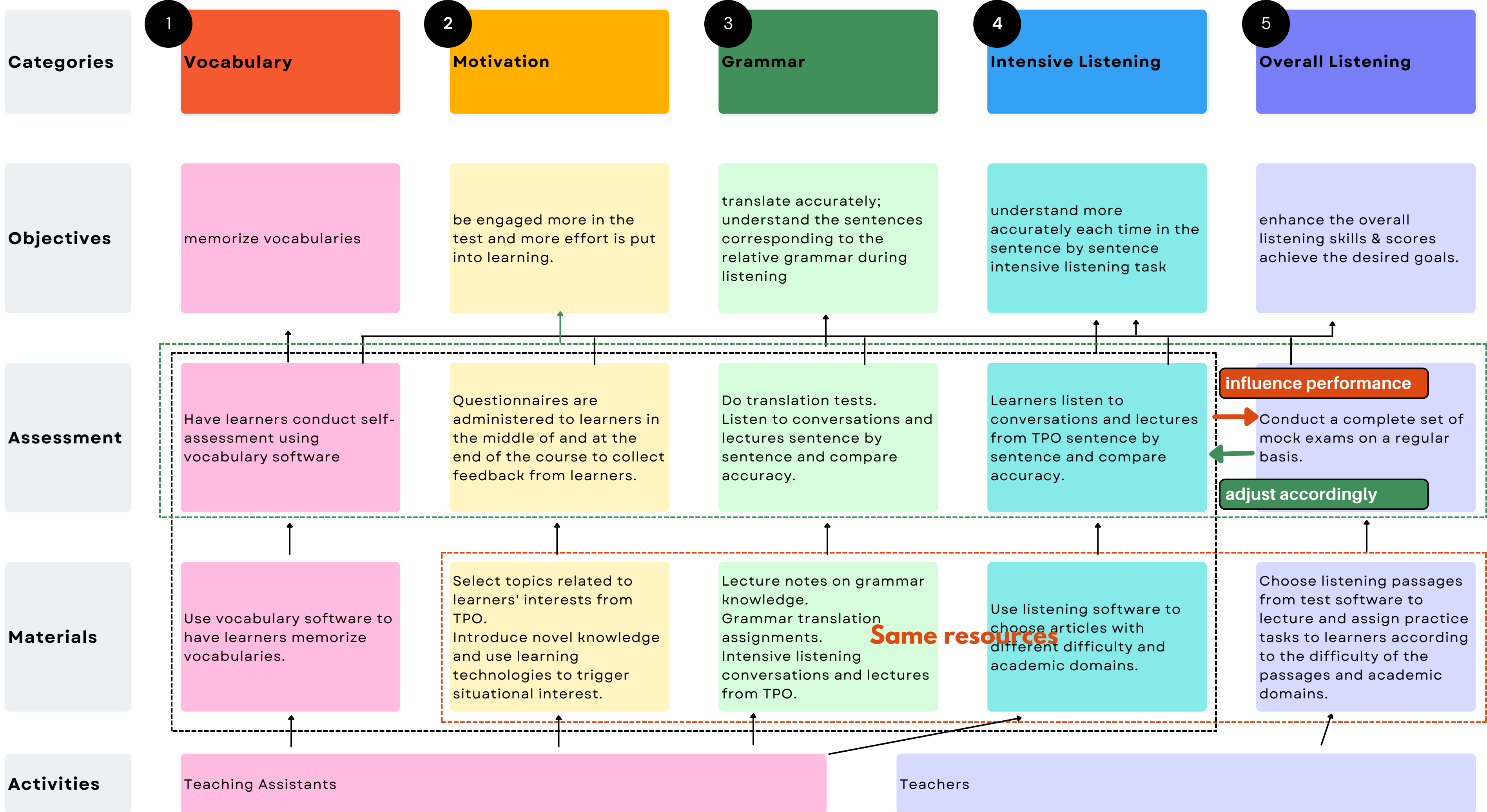
4.0 understand more accurately each time in the sentence by sentence intensive listening.

Learners listen to conversations and lectures from TPO sentence by sentence and compare accuracy. (3.1; 4.0)

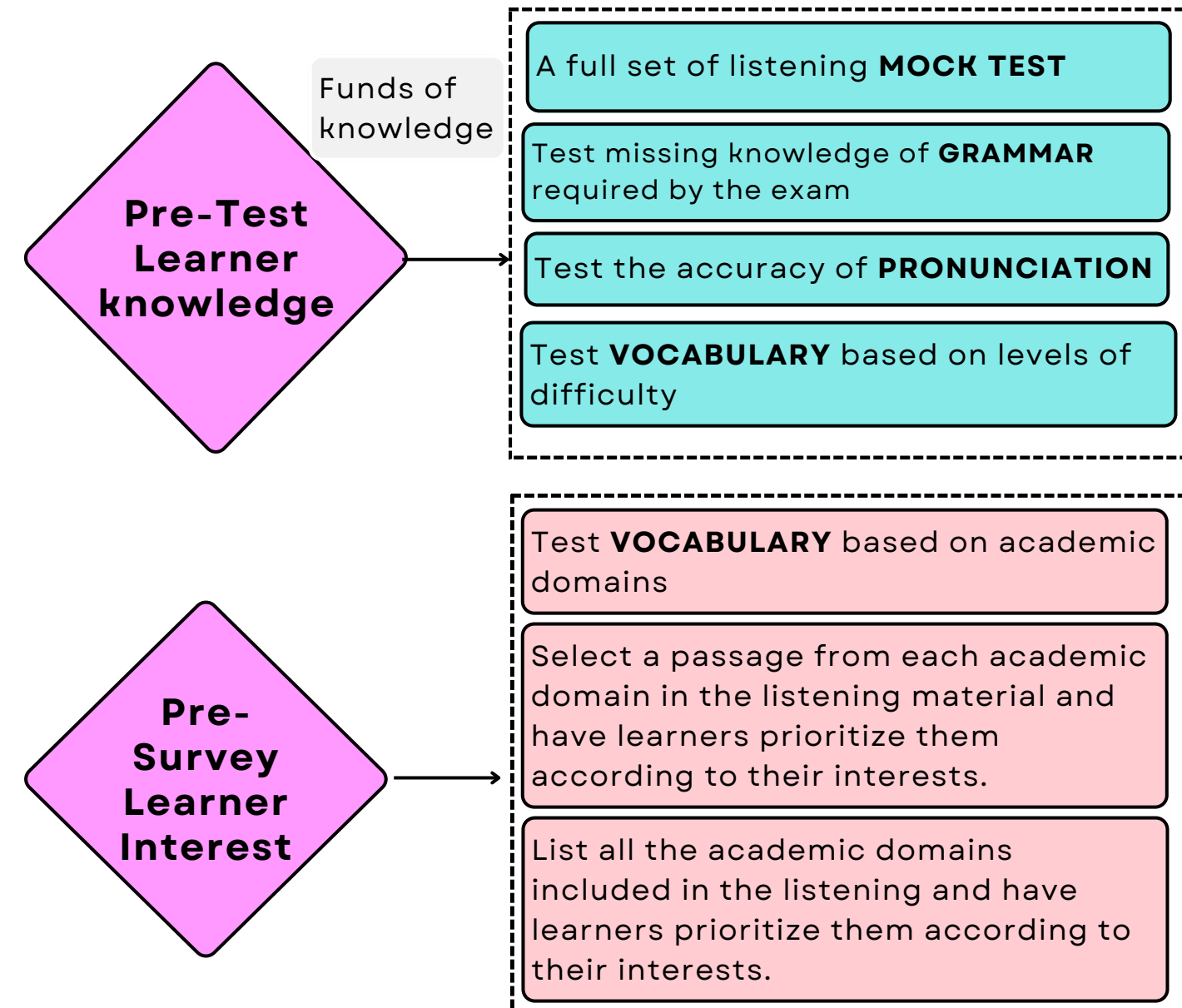
Overall Listening Skills

5.0 enhance the overall listening skills & scores achieve the desired goals.

Conduct a complete set of mock exams on a regular basis, record the changes in performance for each practice exam and conduct a review of the practice exams.



Personalization



Personalization

Lower Level (with limited prior knowledge/certain interest)

Anyone who doesn't meet the criteria of higher level

**Pre-Test
Learner
knowledge**

A full set of listening **MOCK TEST**

Test missing knowledge of **GRAMMAR** required by the exam

Test the accuracy of **PRONUNCIATION**

Test **VOCABULARY** based on levels of difficulty

**Pre-Survey
Learner
Interest**

Test **VOCABULARY** based on academic domains

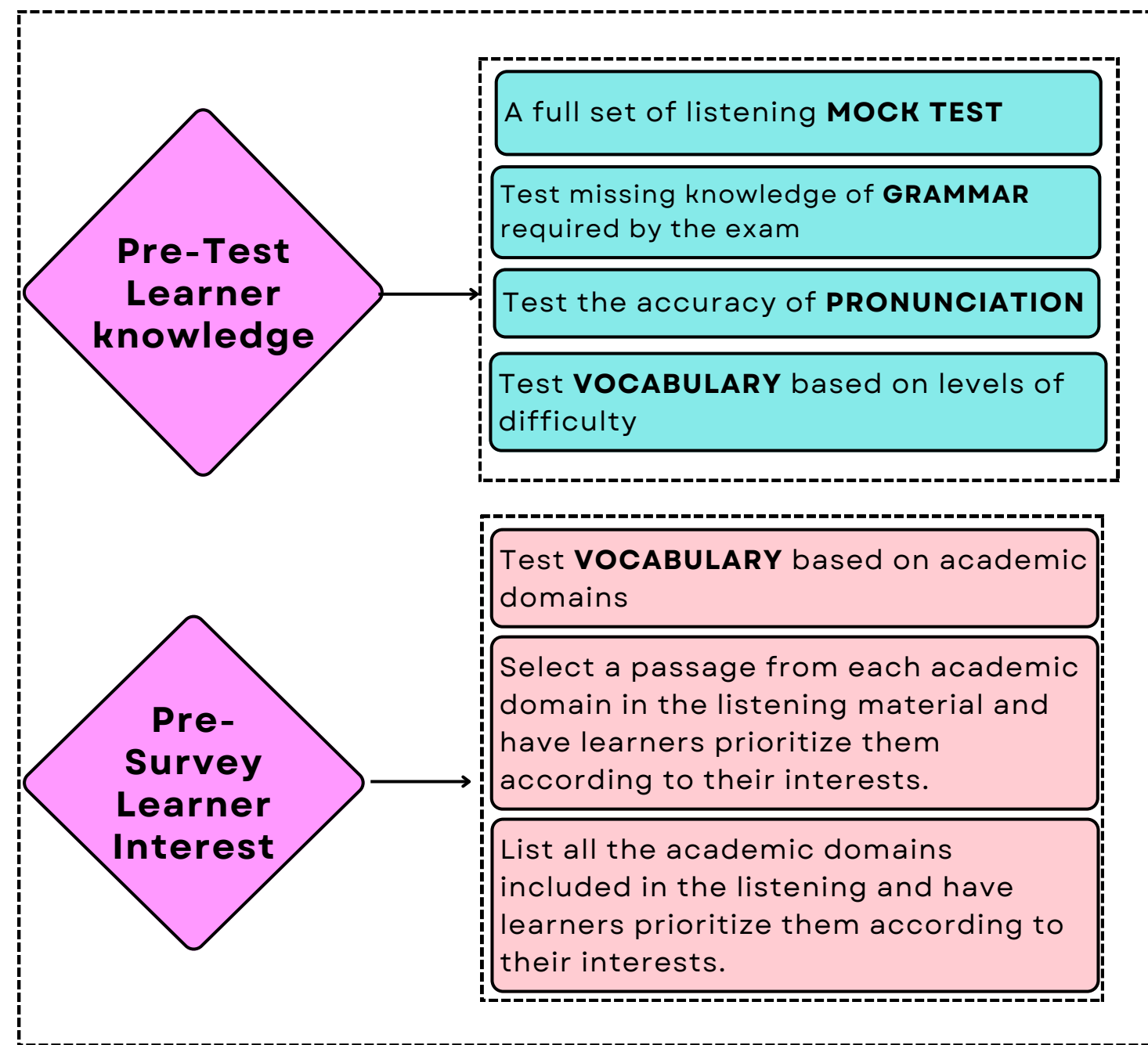
Select a passage from each academic domain in the listening material and have learners prioritize them according to their interests.

List all the academic domains included in the listening and have learners prioritize them according to their interests.

Mock Test score: 21+.
Grammar: sentence translation correct rate: 95%+
Pronunciation: Less than 3 incorrect pronunciations affects listening comprehension.
Vocabulary: correct rate of Brand 4 test: 95%+.

Higher Level (with sufficient prior knowledge)/certain interest

Personalization



Lower Level (with limited prior knowledge)/certain interest

Methodology

Grammar

Pronunciation

Vocab.

Choose **intermediate** difficulty material and lecture methodology **step by step**

Use advanced learning technologies to personalize instruction (e.g. use AR to get learners interested in archaeology and videos in astronomy.)



Introduce novel knowledge related to various domains to trigger learners' situational interest (eg. hypotheses of the construction method of Pyramid of Giza in Egypt)

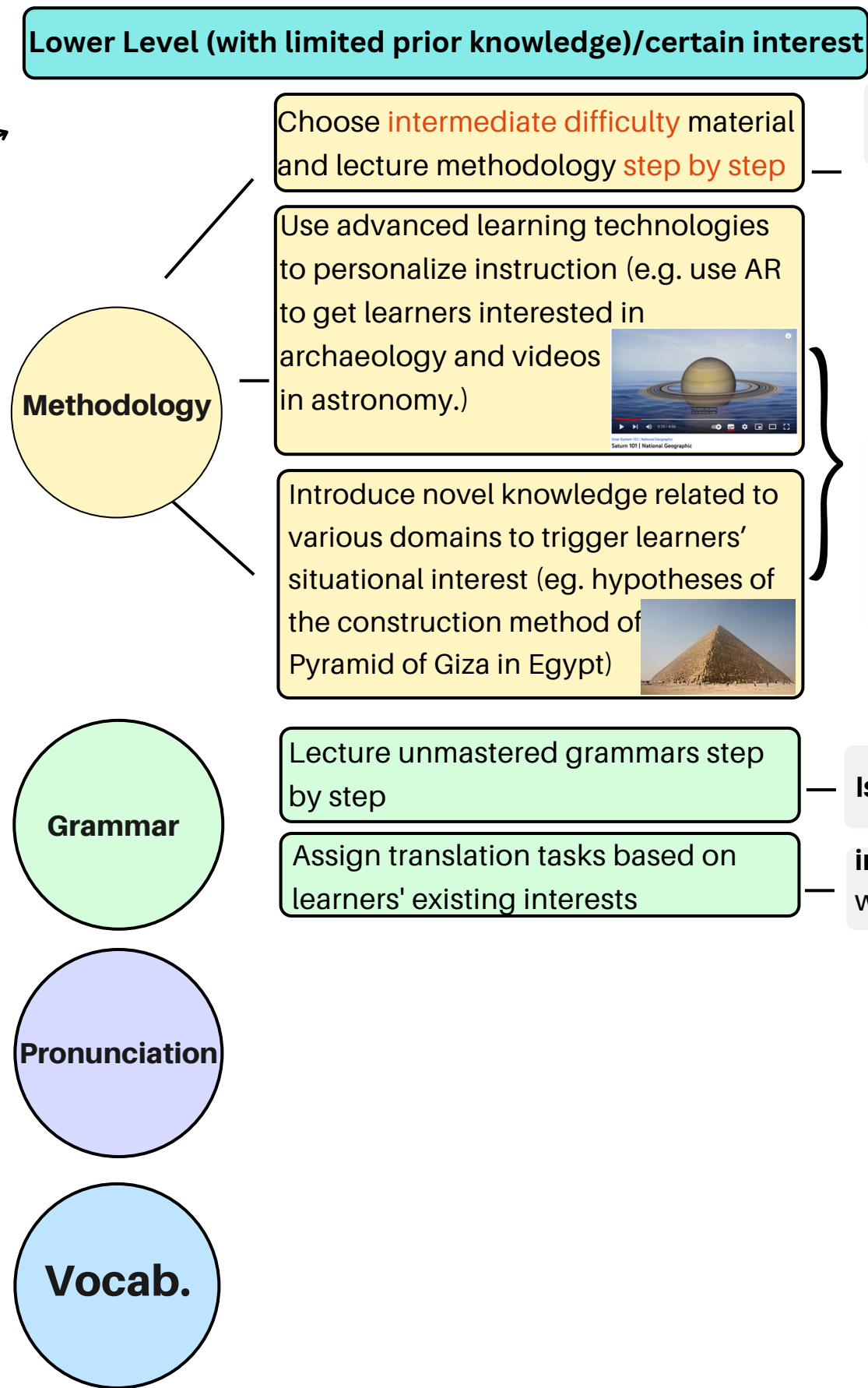
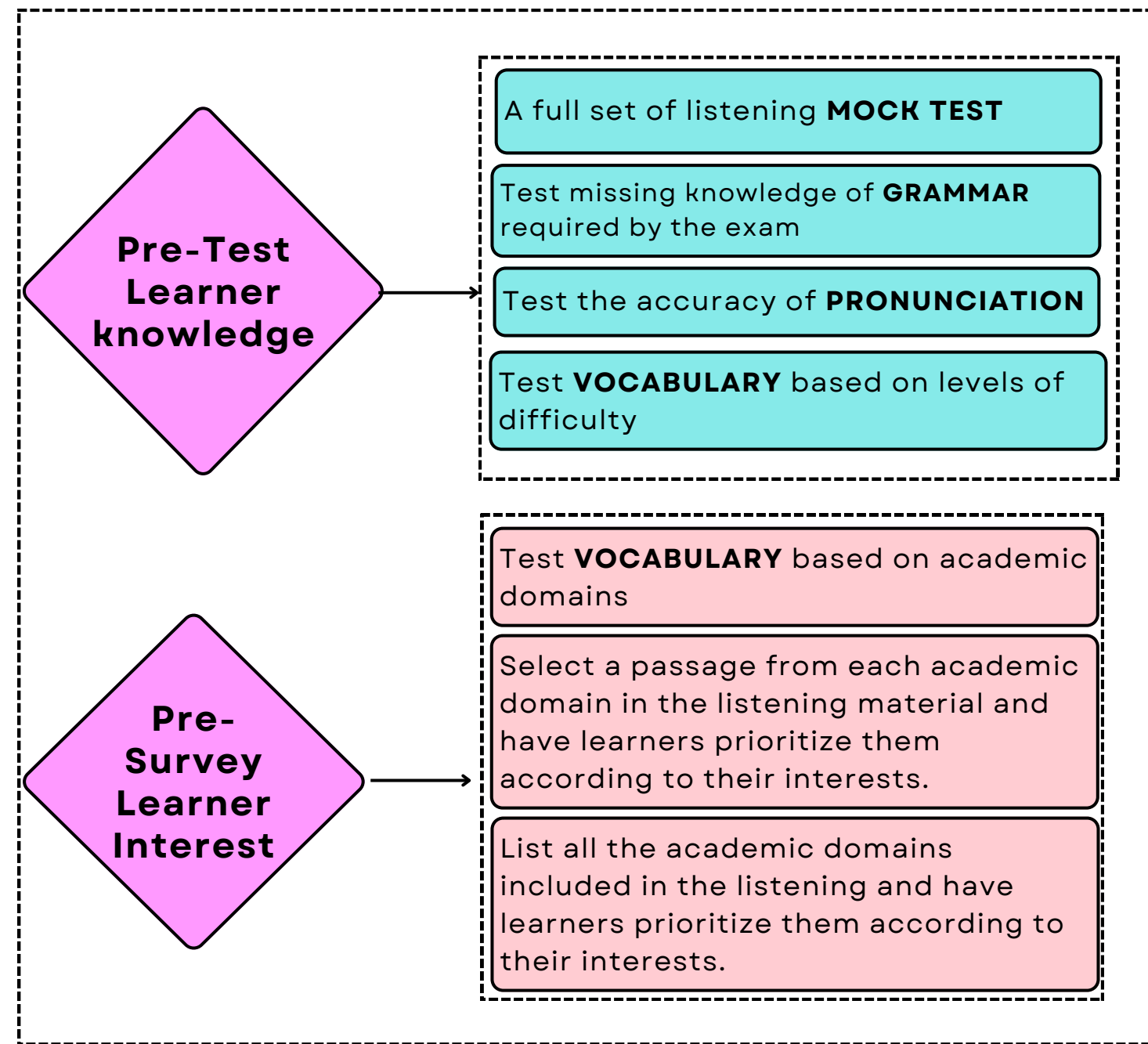


Choice: Learners are most motivated by tasks at intermediate level of difficulty.

Isolated Elements theory

Interest: Trigger situational interest which is important in the development of individual interest (Hidi & Renninger, 2006).

Personalization



Lower Level (with limited prior knowledge)/certain interest

Choose **intermediate difficulty** material and lecture methodology **step by step**

Use advanced learning technologies to personalize instruction (e.g. use AR to get learners interested in archaeology and videos in astronomy.)



Introduce novel knowledge related to various domains to trigger learners' situational interest (eg. hypotheses of the construction method of Pyramid of Giza in Egypt)



Lecture unmastered grammars step by step

Assign translation tasks based on learners' existing interests

Choice: Learners are most motivated by tasks at intermediate level of difficulty.

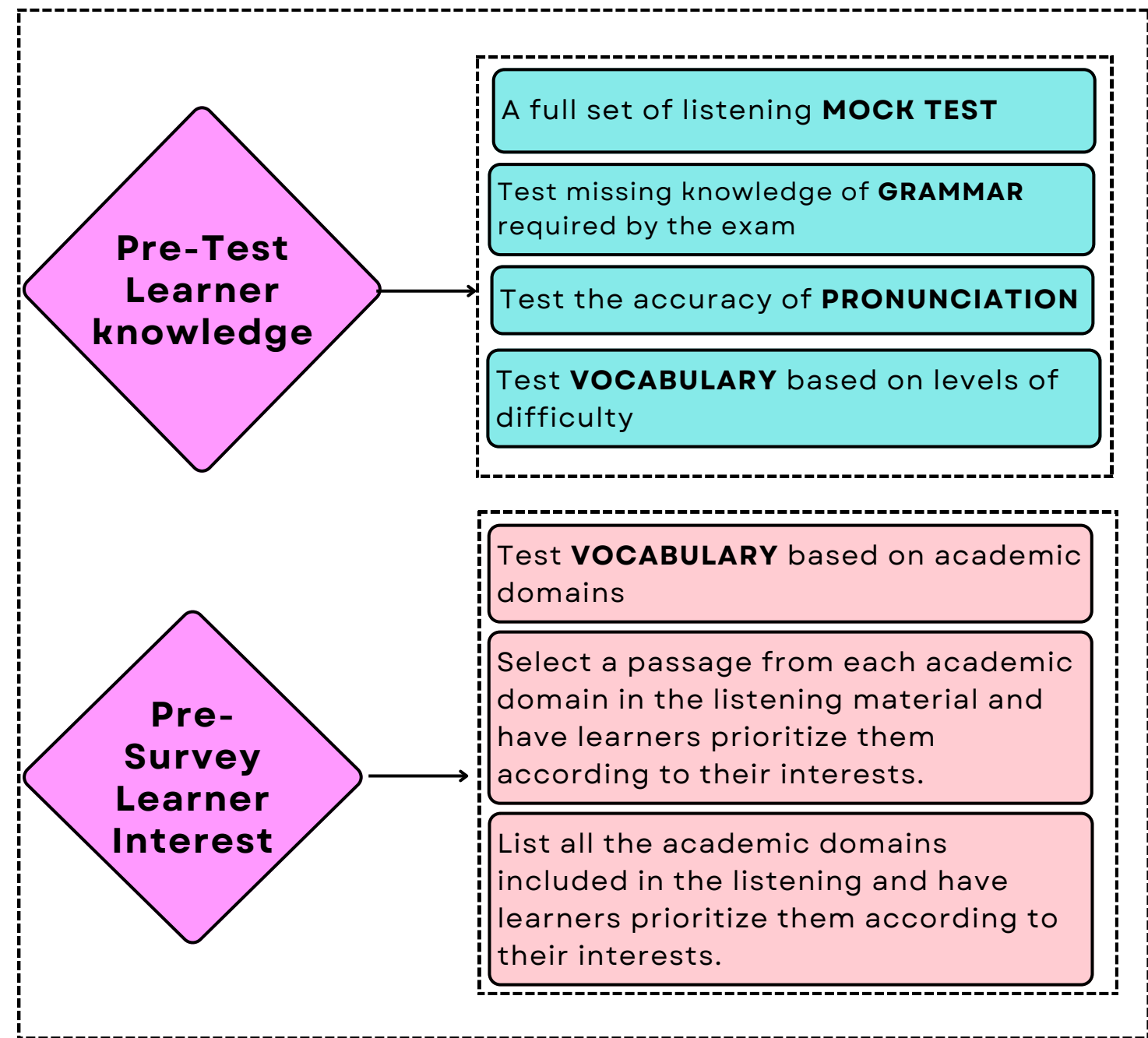
Isolated Elements theory

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Isolated Elements theory

interest can help learners perform well.

Personalization



Lower Level (with limited prior knowledge)/certain interest

Methodology

Choose intermediate difficulty material and lecture methodology step by step

Choice: Learners are most motivated by tasks at intermediate level of difficulty.

Use advanced learning technologies to personalize instruction (e.g. use AR to get learners interested in archaeology and videos in astronomy.)

Isolated Elements theory



Introduce novel knowledge related to various domains to trigger learners' situational interest (eg. hypotheses of the construction method of Pyramid of Giza in Egypt)

Interest: Trigger situational interest which is important in the development of individual interest (Hidi & Renninger, 2006).



Grammar

Lecture unmastered grammars step by step

Isolated Elements theory

Assign translation tasks based on learners' existing interests

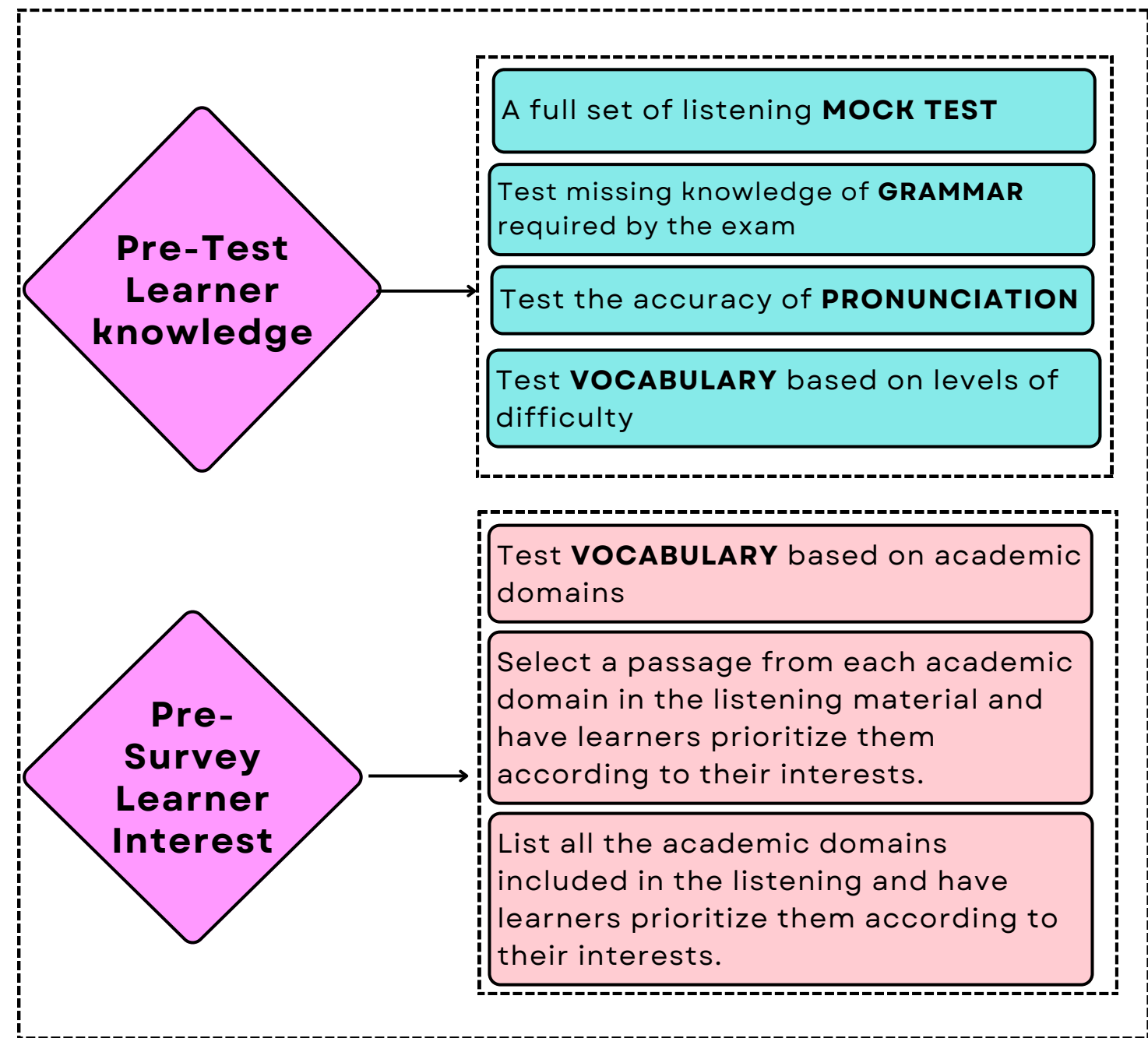
interest can help learners perform well.

Pronunciation

Select material that is of interest to learners and relevant to the test and have them do follow-up reading aloud exercises

Vocab.

Personalization



Lower Level (with limited prior knowledge)/certain interest

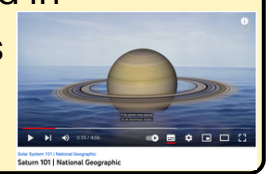
Methodology

Choose intermediate difficulty material and lecture methodology step by step

Choice: Learners are most motivated by tasks at intermediate level of difficulty.

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Introduce novel knowledge related to various domains to trigger learners' situational interest (eg. hypotheses of the construction method of Pyramid of Giza in Egypt)

Interest: Trigger situational interest which is important in the development of individual interest (Hidi & Renninger, 2006).



Grammar

Lecture unmastered grammars step by step

Isolated Elements theory

Assign translation tasks based on learners' existing interests

interest can help learners perform well.

Pronunciation

Select material that is of interest to learners and relevant to the test and have them do follow-up reading aloud exercises

Select vocab in areas of interest

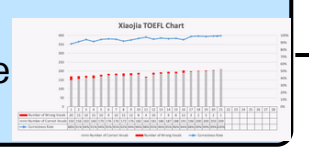
Vocab.

vocab. based on current knowledge and levels of difficulty

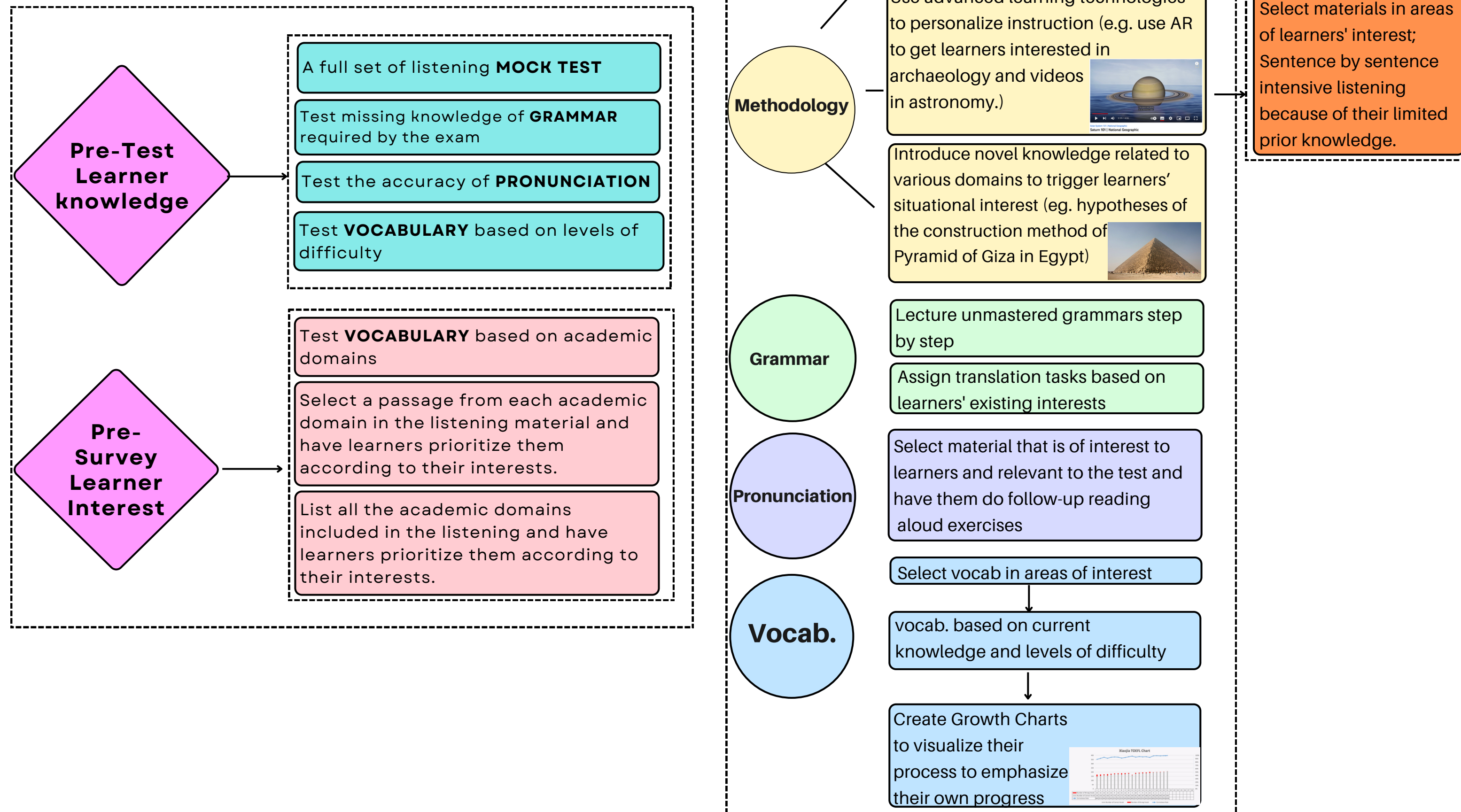
Funds of knowledge

Create Growth Charts to visualize their process to emphasize their own progress

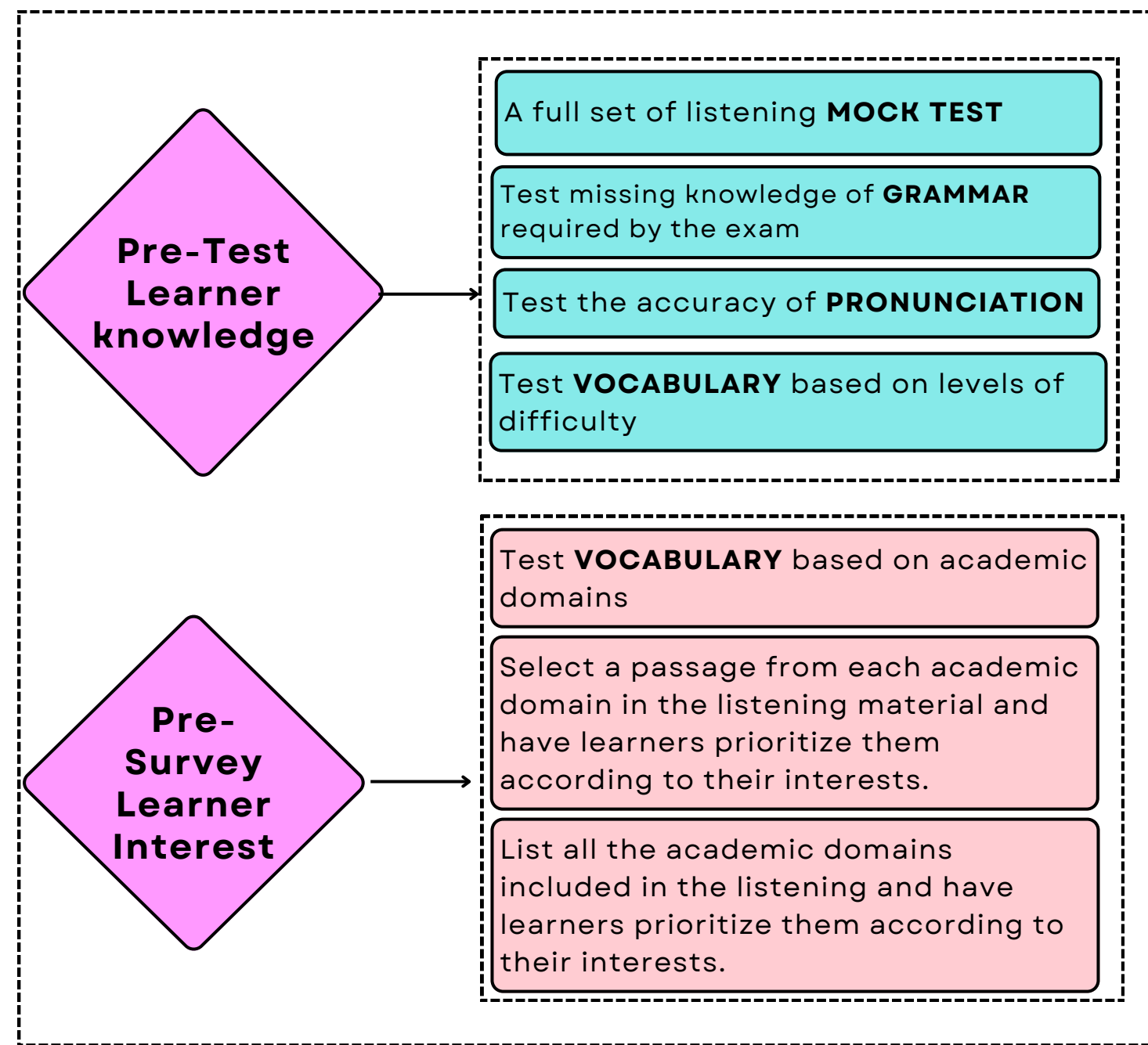
Mastery Approach Goals: Emphasize evaluation more in terms of progress.



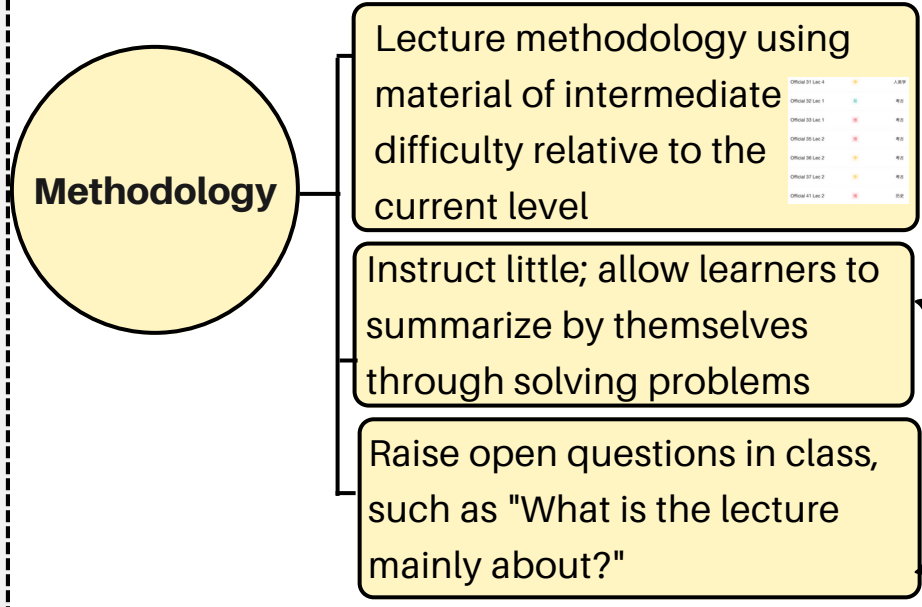
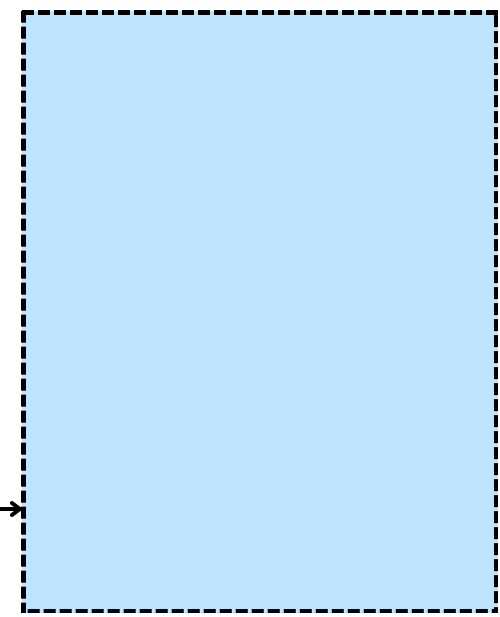
Personalization



Personalization



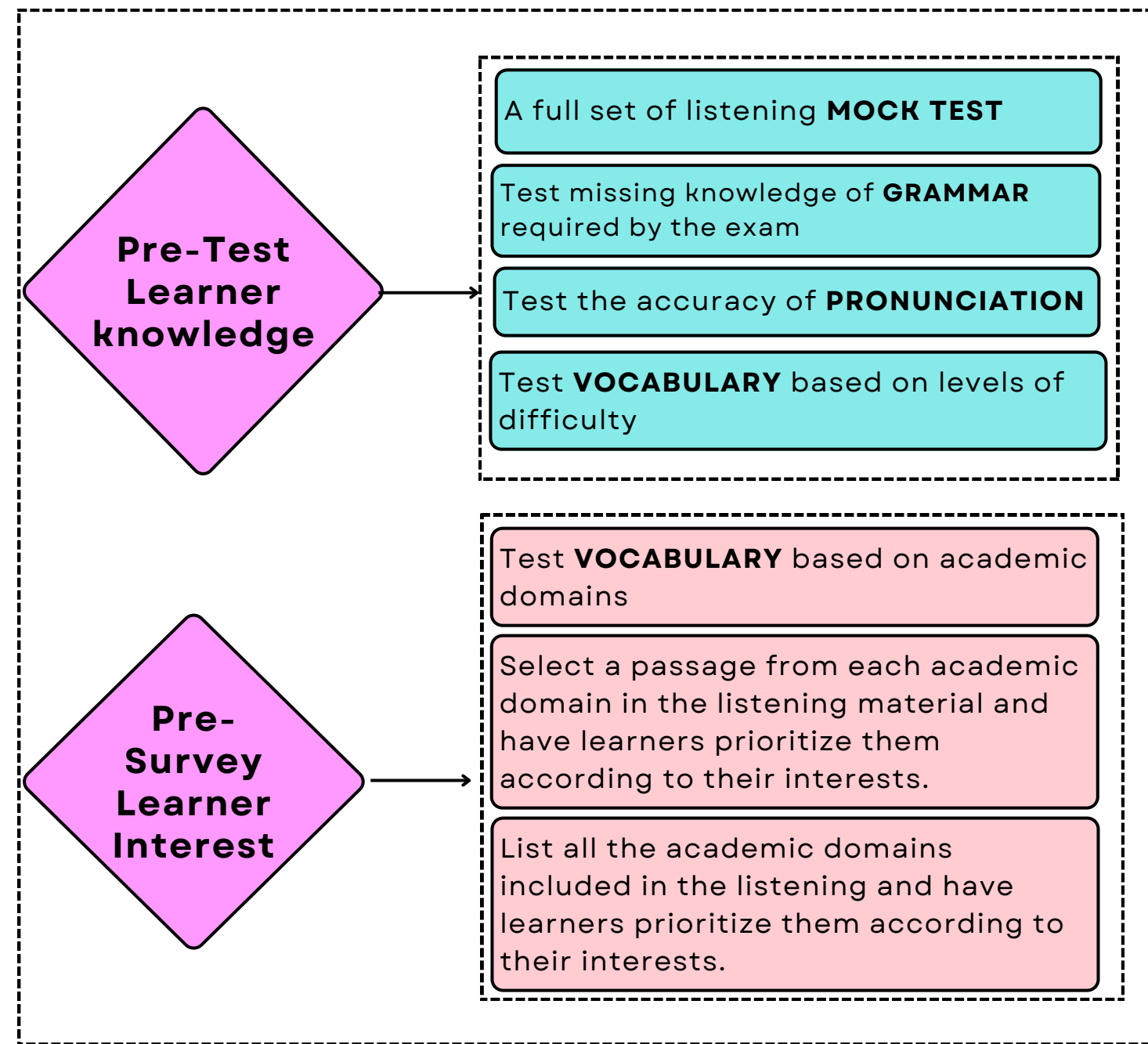
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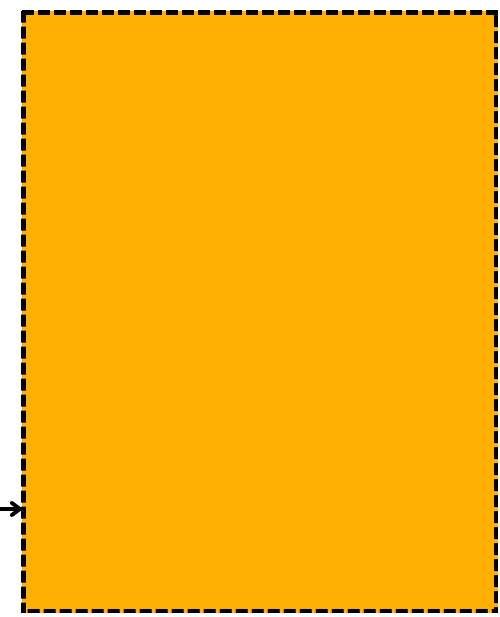
Expertise Reverse Effect theory

Higher Level (with sufficient prior knowledge)/certain interest

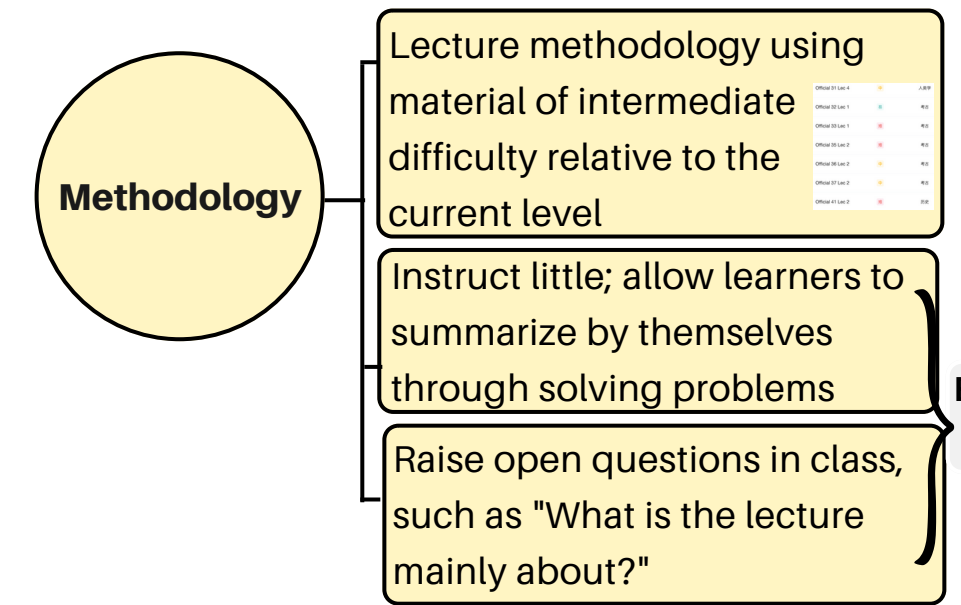
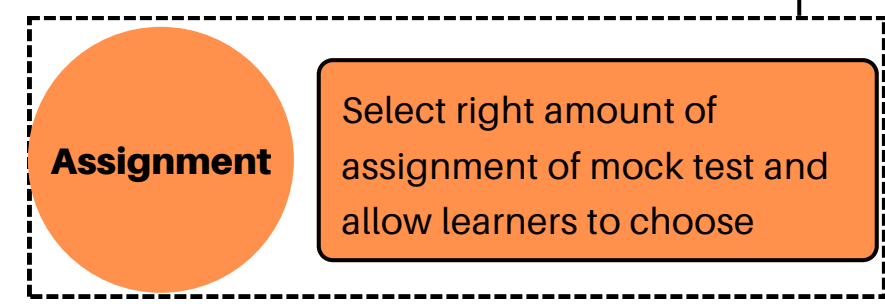
Personalization



Mock Test score: 21+.
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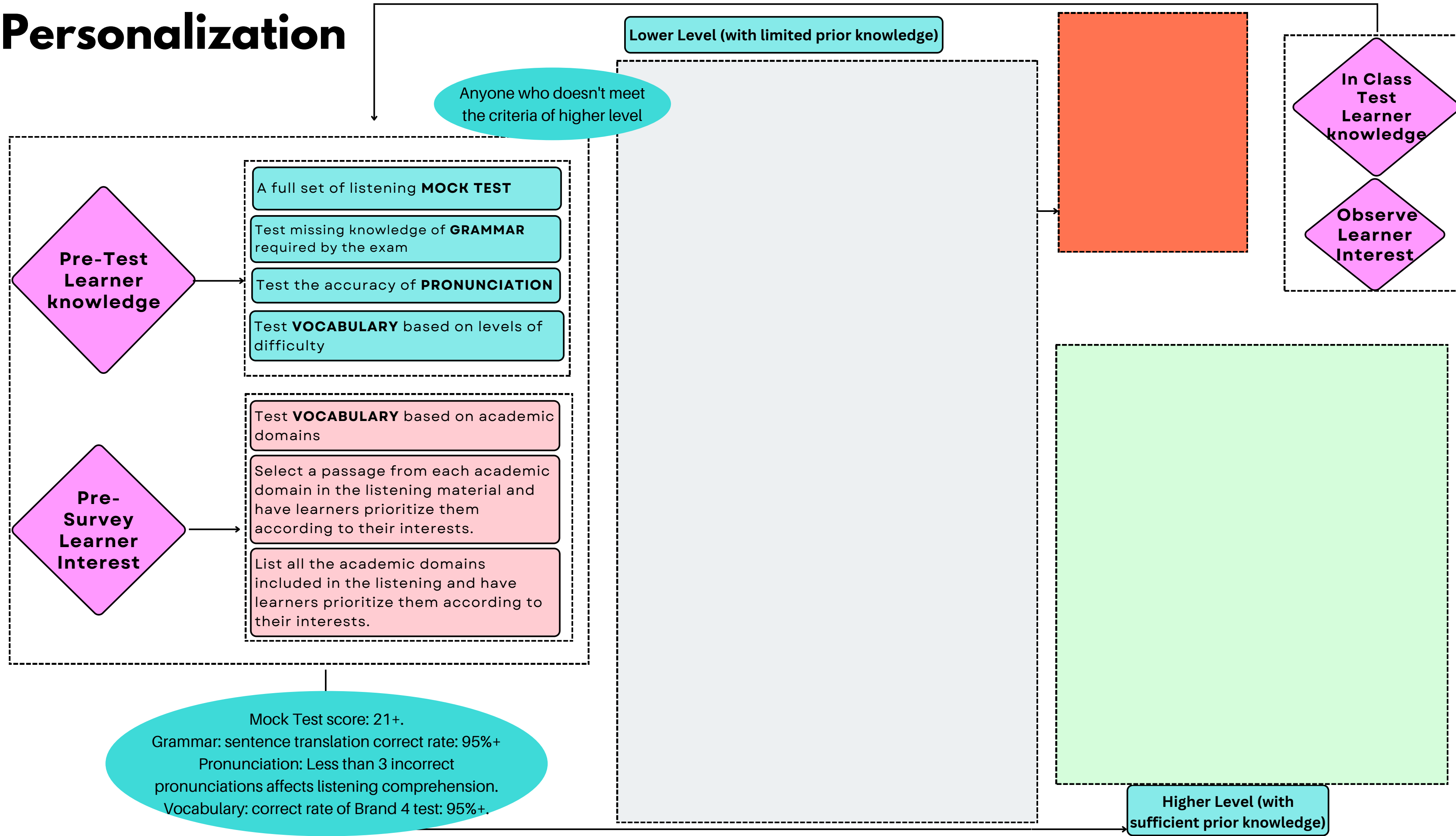
Choice: When learners feel autonomous, they are more likely to be more engaged in the learning activity



Expertise Reverse Effect theory

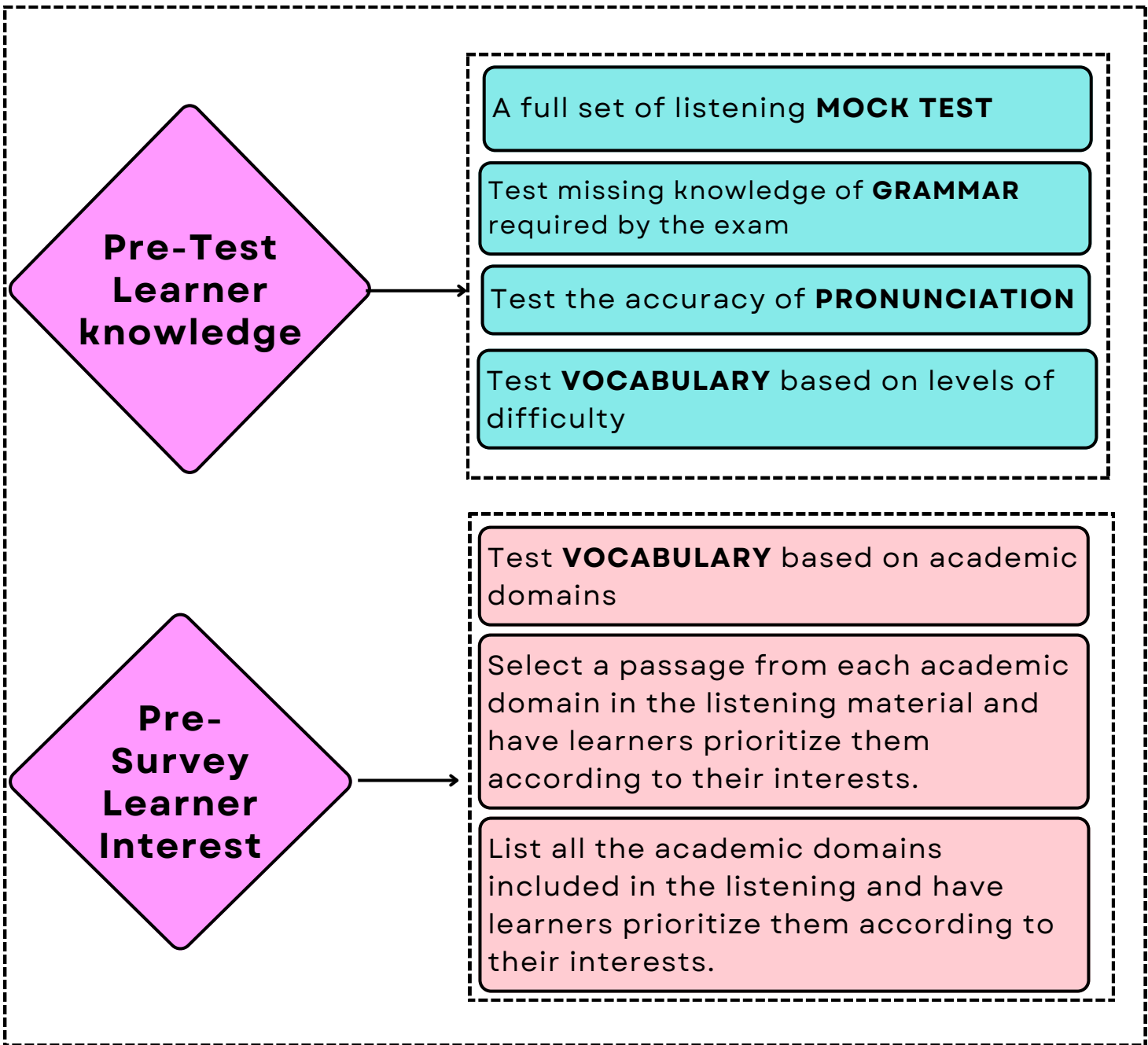
Higher Level (with sufficient prior knowledge)/certain interest

Personalization



Personalization



Anyone who doesn't meet the criteria of higher level



Mock Test score: 21+.
 Grammar: sentence translation correct rate: 95%+
 Pronunciation: Less than 3 incorrect pronunciations affects listening comprehension.
 Vocabulary: correct rate of Brand 4 test: 95%+.

Lower Level (with limited prior knowledge)/certain interest

Methodology

- Choose intermediate difficulty material and lecture methodology step by step
- Use advanced learning technologies to personalize instruction (e.g. use AR to get learners interested in archaeology and videos in astronomy.) 
- Introduce novel knowledge related to various domains to trigger learners' situational interest (eg. hypotheses of the construction method of Pyramid of Giza in Egypt) 

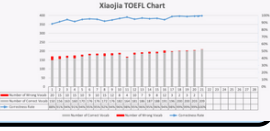
Grammar

- Lecture unmastered grammars step by step
- Assign translation tasks based on learners' existing interests

Pronunciation

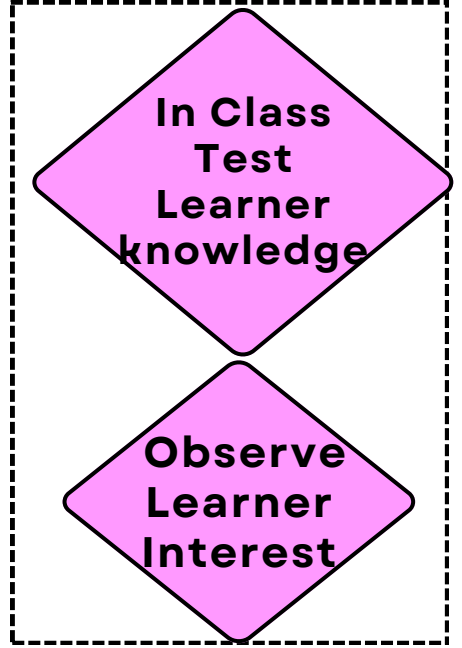
- Select material that is of interest to learners and relevant to the test and have them do follow-up reading aloud exercises

Vocab.

- Select vocab in areas of interest
- vocab. based on current knowledge and levels of difficulty
- Create Growth Charts to visualize their process to emphasize their own progress 

Assignment

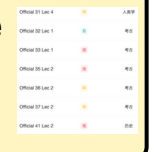
Select materials in areas of learners' interest for one sentence by one sentence intensive listening



Assignment

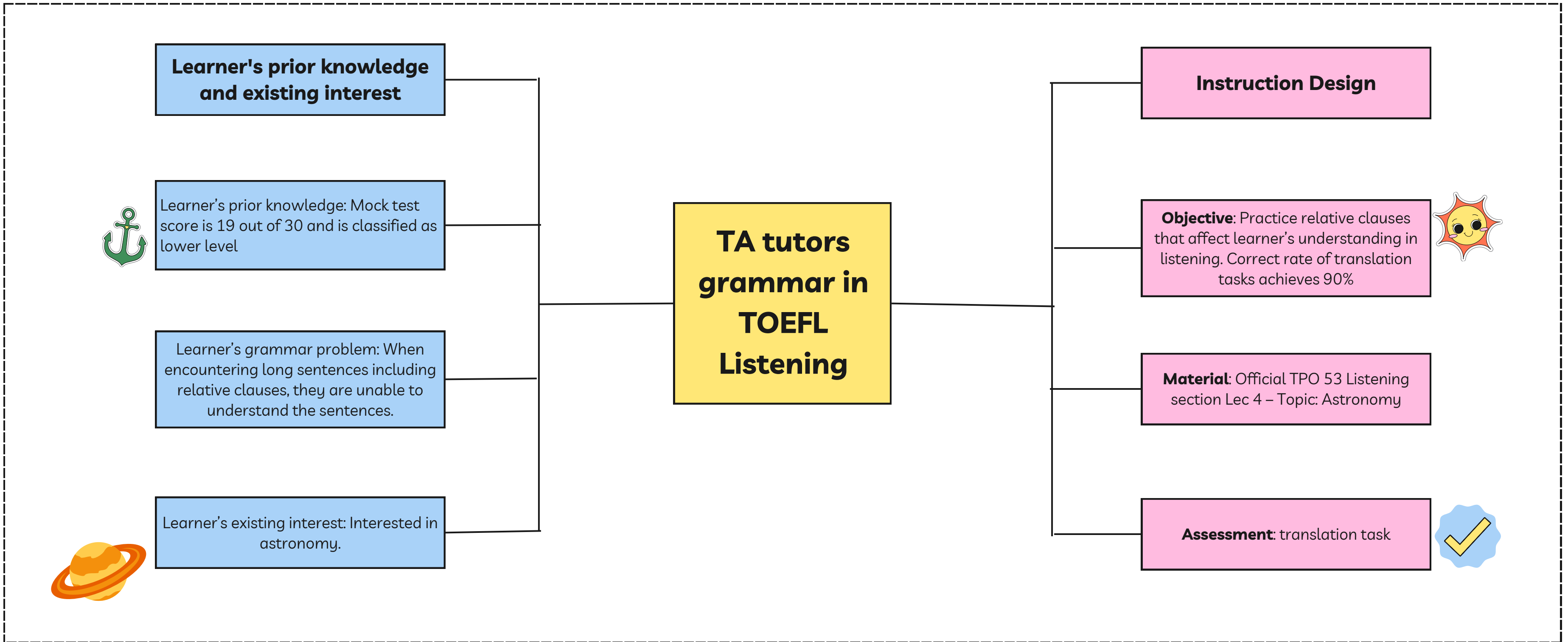
Select right amount of assignment of mock test and allow learners to choose

Methodology

- Lecture methodology using material of intermediate difficulty relative to the current level 
- Instruct little; allow learners to summarize by themselves through solving problems
- Raise open questions in class, such as "What is the lecture mainly about?"

Higher Level (with sufficient prior knowledge)/certain interest

Examples



Examples (continue)



Until about 30 years ago, we thought the rings were composed of particles of ice and rock that were left over from Saturn's formation-extra material that never managed to form, uh, coalesce into a moon.

Step 1: Grasp the main body of a sentence
we thought the rings were composed of particles

Step 2: Identify the modifying components that affect comprehension
relative clause: particles of ice and rock that were left over from Saturn's formation

Step 3: Understand and translate the whole sentence

Here's one possibility-the moons, the dozens of moons that orbit Saturn are providing raw material for the rings.

Step 1: Grasp the main body of a sentence
the moons are providing raw material for the rings

Step 2: Identify the modifying components that affect comprehension
relative clause: the dozens of moons that orbit Saturn

Step 3: Understand and translate the whole sentence



Roche was able to show mathematically that if one celestial body-say, a moon-uh, if it passes too close to another-say, a planet-that has a gravitational force stronger than the force of self-attraction that holds the moon together, well, that first body, that moon, it'd be ripped apart.

Step 1: Grasp the main body of a sentence
Roche was able to show that..

Step 2: Identify the modifying components that affect comprehension
relative clause 1: a planet-that has a gravitational force stronger than the force of self-attraction
relative clause 2: self-attraction that holds the moon together

Step 3: Understand and translate the whole sentence

References

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