

*The Derivation Words Recognition: Understanding the Suffixation Patterns of English Vocabulary*

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**Abstract**

Words are one of the important elements that language learners must master as having insufficient words will be a barrier for them to deliver ideas or expressions. The challenge to understand English words seems to be very complicated because they are dominated by derivations. Considering to that matter, this paper describes the patterns of derivation words that have been analyzed accordingly from 358 academic word lists and only words that can be developed into at least three patterns are considered as findings.

The results show that the changing patterns of the part of speech are classified into eighteen types. For patterns embarked on verbs are 1) Verbs-Adjectives-Adverbs. 2) Verbs-Adjectives-Nouns. 3) Verbs-Nouns-Nouns. 4) Verbs-Adjectives-Adjectives. 5) Verbs-Nouns-Adjectives. 6) Verbs-Nouns-Nouns-Adjectives. 7) Verbs-Nouns-Nouns-Nouns and 8) Verbs-Nouns-Adjectives-Adverbs. Furthermore, patterns started on nouns are 1) Nouns-Verbs-Nouns. 2) Nouns-Adjective-Nouns. 3) Nouns-Nouns-Adjectives. 4) Nouns-Adjectives-Adverbs. 5) Nouns-Adjective-Adjective-Nouns. 6) Nouns- Adjectives-Verbs-Nouns. 7) Nouns-Nouns-Adjectives-Adverbs and 8) Nouns-Adjectives-Adjectives-Adverbs. Two patterns commenced by adjectives found that are 1) Adjective-Adjectives-Adverb and 2) Adjectives-Adjectives-Nouns. Each pattern contains of suffixation that have also been structurally analyzed into details. By learning those suffixation patterns carefully, it is hoped that language learners will be more aware of and recognize the English vocabulary better and are touched up to expand their vocabulary mastery in the future.

Keywords: word recognition, derivation, suffixation patterns, English vocabulary

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## **Introduction**

Although grammar is important, vocabulary is far more important (Renandya, 2013, p.29). Quoting Wilkin (1972, p. 111), he writes that without grammar very little can be conveyed but without vocabulary nothing can be conveyed. This encourages language learners to increase their vocabularies beside grammar to be able to communicate.

However, vocabulary development strategy suggested by many practitioners in Indonesia is through learning by heart that is revealed ineffective (Sadiq & Pradita, 2015). Sadiq and Pradita propose a more effective way in enhancing learners' vocabulary acquisition that is by using of affixes (p.15). Quoting several scholars Nakayama (2008) states affixes are selected because students learn less frequency words by connecting those words to high frequency words or suffixes or prefixes. Nakayama further explain that because of its similarity between L1 and L2, when language learners have knowledge on affixes and understand a base word, those learners can predict and use its derivative words.

To provide students with more predictable derivative words, this paper describes twenty patterns of suffixation of English vocabulary. Therefore, it consists of five main sections: introduction, literature review, method, results and discussions, and conclusion.

## **Literary Review**

Spencer (1991) defines derivative as 'the formation of lexeme from another lexeme'. Derivation, therefore, adds a root or a stem an affix or affixes. This additional affixes will change the syntactic class membership of the word such as from adjective to noun, from noun to verb, etc. It is well-known as derivational morphology (Fromkin, 2000) and lexical morphology (Crystal, 1995). In addition, derivational affixes produce new words (Malmkjaer, 1991).

Derivational affixes can be classified into class-maintaining and class-changing process. The first produces a new word in a different word-class (e.g. category (noun) – categorize (verb)), while the latter produces a new word but does not change the class (e.g. concrete (noun) – concretion (noun)). In addition to the two classifications, the third category - the phenomenon of conversion - is also important. It changes word-class without any affixation, e.g. service (noun) – to service (verb) (Spencer, 1991).

Derivational morphology belongs to one of two components to word attack namely structural analysis. It is because the analysis deals with morphological units or units that determine meaning (Ballard & Tighe, 2011). It is described that learning structural units provide students more efficient way to attack unfamiliar words which utilize larger units than simple letters or letter combinations. In addition, in the process of analyzing the word, students can attach meaning to those units (Ballard & Tighe, 2011).

Therefore, it is suggested that learning affixes is one of the best ways to attack words. Affixes are meaning units attached to words so that the meaning of the word is

changed. The rationales of proposing affixes in learning vocabulary are firstly that affixes provide students a head start in pronouncing new words they may not know, when students are already familiar with the pronunciation of a prefix, suffix, or root word. For example, *transcontinental* will be easier to be pronounced because prefix *trans-* has been familiar for students. Secondly, meaning can be determined more easily if the meaning of an affix has been known well and thirdly knowledge of affixes will be very helpful for spelling recognition. In this study, a segment of affixes being analyzed is suffixes—parts of words added to the end of root words. Suffixes that change the part of speech or meaning of a word are called derivational endings (Ballard & Tighe, 2011).

Quoting scholars in her manuscript, Ebbers (2009) describes that both derivations and derivational suffixes present the greatest challenge. Some of them are understood because derivational suffixes convey syntactic information regarding grammatical function. For example, the transformations from *create* to *creative* and *creatively* imply different grammatical use. In addition, derivational suffixes may convey from strong to weak semantic information. For examples, *painful - painless* contain strong semantic information, while *politic - political* contain weak semantic information. Therefore, the task of understanding derivational morphology can happen above third grade and continues through high school. This is understandable because an abundance of derivations are in intermediate and secondary content area texts and it becomes essential that how derivational suffixes drive word class (syntax or grammar) and how derivations create abstract meanings are lack of understandings. Struggling readers in middle and high school and in college are poor in comprehending derivational suffixes.

Furthermore, Nakayama (2008) in his study about learning vocabulary through special prefix summarized that those learners who do not have prefix knowledge at the beginning can be effectively enforced systematic teaching. However, the teaching must be done integrated because one-shot systematic teaching seemed has no direct affect for the outcome of long-term vocabulary learning. In addition, in short term retention of words, teaching prefixes systematically will benefit the learners to a certain amount whether they have knowledge of base forms of vocabulary items or not. For a longer term, the learners' vocabulary will be retained when they have already knowledge on vocabularies.

Other study done by Schmitt and Zimmerman (2002) showed that L2 learners are still difficult to produce various derivative forms within a word family. The learners seemed to have partial productive knowledge of the two or three typical forms of derivative. In addition, knowledge of noun and verb derivative at each stage is increasing while adjective and adverb forms are considered difficult. To conclude, Schmitt and Zimmerman (2002) state the implication that more direct attention to the teaching of derivative forms is needed.

A study that is focused on academic words is conducted by Rasinski et al (2008). The results of their study show that the integration of Latin and Greek roots into vocabulary instruction which is set up systematic, ongoing, and consistent offers awesome potential for enhancing students' academic growth.

Stahl and Shiel (1992) had studied approaches to enhance poor readers' ability. One approach that they suggest is an active teaching of words as part of larger semantic fields. Through active teaching of larger semantic approach, the vocabulary knowledge and comprehension of students of all abilities appears to improve. In similar purpose, results of Bellomo's study (2009) demonstrate that "teaching morphologically complex vocabulary at the college preparatory level along with providing a working knowledge of morphemes can assist students toward college readiness". Schmitt and Meara (1997) report their study that suffix and association knowledge improve the learner's vocabulary overall size and general language proficiency which is measured by the TOEFL test.

## Methods

This is a descriptive study of 358 academic vocabulary lists which has been compiled and categorized by parts of speech; or in other words, into grammatical categories or word groups (Burke and Smith). Of 358 words, 8 words are reduced as they consist of one word only without indication of having suffixes. Therefore, 350 words which are further studied to identify the possibility of its patterns. Only derivations that have indicated for three or more strings are being verified.

## Results

There are eighteen suffixation patterns encountered at the study which are classified into three general categories – verbal, noun and adjective. The verb, noun, and adjective patterns have verbal, noun, and adjective words to be added on the suffixes. Suffixation for verbal and noun dominates the variation with eight patterns, followed by adjective with only two variations. Those patterns are described in details in the following.

### Verbs Patterns

#### 1. Verbs – Adjectives – Adverbs

In this pattern, there are nine forming suffixes that could be added to Verbs to create Adjectives and ended with suffix -ly to create Adverbs. The pattern can be seen in table 1.

Table 1: Verb – Adjective – Adverb Pattern

<b>Verb</b>	<b>+</b>	<b>Forming suffixes</b>	<b>=</b>	<b>Adjective</b>	<b>+</b>	<b>Forming suffix</b>	<b>=</b>	<b>Adverb</b>
Verb	+	-ive, -al, -ary, -ed/d, -al, -ing, -ant, -ent, -able, -ate,	=	Adjective	+	-ly	=	Adverb

Examples:

Compare + ive = comparative + ly = comparatively  
 Complement + al = complemental + ly = complementally  
 Complement + ary = complementary + ly = complementarily  
 Compose + ed/d = composed + ly = composedly  
 Accord + ing = according + ly = accordingly  
 Accord + ant = accordant + ly = accordantly  
 Intermit + ent = intermittent + ly = intermittently  
 Apply + able = applicable + ly = applicably  
 Consider + ate = considerate + ly = considerately

## 2. Verbs – Adjectives – Nouns

There are two categories come across this pattern. The first type is that five forming suffixes that could be added to Verbs to create Adjective and ended with suffix –ity to create Adverbs. The second is type is that six five forming suffixes added to Verbs to create Adjectives and ended with suffix –ness to create Adverbs. The pattern can be seen in table 2 and 3.

Table 2: Verbs – Adjectives – Nouns Pattern (a)

<b>Verb</b>	<b>+ Forming suffixes</b>	<b>= Adjective</b>	<b>+ Forming suffix</b>	<b>= Noun</b>
Verb	+ -ive, -al, -ary, -able, -ible	= Adjective	+ - ity	= Noun

Examples:

Conduct + ive = conductive + ity = conductivity  
 Complement + ary = complementary + ity = complementarity  
 Apply + able = applicable + ity = applicability  
 Conduct + ible = conductible + ity = conductibility  
 Dimension + al = dimensional + ity = dimensionality

Table 3: Verbs – Adjectives – Nouns Pattern (b)

<b>Verb</b>	<b>+ Forming suffixes</b>	<b>= Adjective</b>	<b>+ Forming suffix</b>	<b>= Noun</b>
Verb	+ -ive, -ary, -ory, -able, -ible, -ed	= Adjective	+ - ness	= Noun

Examples:

Compare + ive = comparative + ness = comparativeness  
 Complement + ary = complementary + ness = complementariness  
 Introduce + ory = introductory + ness = introductoriness  
 Credit + able = creditable + ness = creditableness  
 Deduce + ible = deducible + ness = deducibleness  
 Abstract + ed = abstracted + ness = abstractedness

### 3. Verbs – Nouns – Nouns

This pattern contains of five categories, having two forming suffixes that could be added to Verbs to create Nouns. To create the other Nouns, four suffixes can be added. The pattern can be seen in from table 4.

Table 4: Verbs – Nouns – Nouns Pattern

<b>Verb</b>	<b>+ Forming suffixes</b>	<b>= Nouns</b>	<b>+ Forming suffixes</b>	<b>= Nouns</b>
Verbs	+ -or	=	+ - ship	=
	+ -ion	=	+ - ist	=
	+ -ion	=	+ - ism	=
	+ -ion	=	+ - er	=

Examples:

Conduct + or = conductor + ship = conductorship

Abstract + ion = abstraction + ist = abstractionist

Appropriate + ion = appropriation + ism = appropriationism

Exhibit + ion = exhibition + er = exhibitor

### 4. Verbs – Adjectives – Adjectives

Only one forming suffix can be added to Verbs to create Verbs and ended with suffix –able to create Adjective found in this pattern.

Example:

Categorize + ed/d = categorized + able = categorizable

### 5. Verbs – Nouns – Adjectives

This pattern contains of five categories, having four forming suffixes that could be added to Verbs to create Nouns. To create Adjectives, five suffixes can be added. The pattern can be seen in from table 5.

Table 5: Verbs – Nouns – Adjectives Pattern

<b>Verb</b>	<b>+ Forming suffixes</b>	<b>= Nouns</b>	<b>+ Forming suffixes</b>	<b>= Nouns</b>
Verb	+ -ion, -or, -ation	=	+ - al	=
	+ -ist	=	+ - ic	=
	+ -ion	=	+ - able	=
	+ -ion	=	+ - ary	=
	+ -ion	=	+ - ist	=

Examples:

Calculate + ion = calculation + al = calculational  
Conduct + or = conductor + al = conductional  
Confirm + ation = confirmation + al = conformational  
Determine + ist = determinist + ic = deterministic  
Discuss + ion = discussion + able = discussible  
Exclude + ion = exclusion + ary = exclusionary  
Demonstrate + ion = demonstration + ist = demonstrationist

The last three patterns have four strings of suffixations. Each is described in the following details.

#### 6. Verbs – Nouns – Nouns – Adjectives

In this pattern, the Verb is added with suffix -ion to create Noun. It can be further inserted suffix -ist to create another Noun, and finally suffix -ic can be adjoined to create Adjective.

Example:

Associate + ion = association + ist = associationist + ic = associationistic

#### 7. Verbs – Nouns – Nouns – Nouns

In this pattern, the Verb is added with suffix -ment to create Noun. It can be further inserted suffix -arian to create another Noun, and finally suffix -ism can be adjoined to create Noun.

Example:

Establish + ment = establishment + arian = establishmentarian + ism = establishmentarianism

#### 8. Verbs – Nouns – Adjectives – Adverbs

This pattern has several variations on suffixes adding and reveals that all word classes are accommodated from verbs to adverbs. Therefore, this pattern can be formalized more rigidly and anticipatively. For example, a verb can be directly combined with suffix -ment to create Nouns. These Nouns are further attached with either suffix -ative or -al to create Adjectives and finally the Adjectives are appended with suffix -ly to form Adverbs. The examples of these kinds are as follows.

Argue + ment = argument + ative = argumentative + ly = argumentatively  
Develop + ment = development + al = developmental + ly = developmentally  
Discriminate + or = discriminator + y = discriminatory + ly = discriminatorily  
Explain + ation = explanation + ory = explanatory + ly = explanatorily  
Compose + ition = composition + al = compositional + ly = compositionally

## Nouns Patterns

### 1. Nouns – Verbs – Nouns

In this pattern, there is only one Forming suffix (-ize) that can be added to Nouns to create Verbs and ended with suffix -ation to create Nouns.

Example:

Category + ize = categorize + ation = categorization

### 2. Nouns – Adjective – Nouns

In this pattern, there are one forming suffix (-al) that can be added to Nouns to create Adjectives and ended with four kinds of suffixes (-ity, -ness, -ism, -ist) to create Nouns. The pattern can be seen in table 6.

Table 6: Noun – Adjective – Noun Pattern

<b>Noun</b>	<b>+</b>	<b>Forming suffix</b>	<b>=</b>	<b>Adjective</b>	<b>+</b>	<b>Forming suffixes</b>	<b>=</b>	<b>Noun</b>
Noun	+	-al	=	Adjective	+	-ity -ness -ism -ist	=	Noun

Examples:

Condition + al = conditional + ity = conditionality

Fact + al = factual + ness = factualness

Fact + al = factual + ism = factualism

Fact + al = factual + ist = factualist

### 3. Nouns – Nouns – Adjectives \

Only one forming suffix can be added to Nouns to create Nouns and ended with suffix -ary to create Adjective found in this pattern.

Example:

Concrete + ion = concretion + ary = concretionary

### 4. Nouns – Adjectives – Adverbs

There are two forming suffixes (-al and -ary) that can be added to Nouns to create Adjectives and ended with suffix -ly to Adverbs. The pattern can be seen in table 7.

Table 7: Noun – Adjective – Adverb Pattern

<b>Noun</b>	<b>+</b>	<b>Forming suffixes</b>	<b>=</b>	<b>Adjective</b>	<b>+</b>	<b>Suffix</b>	<b>=</b>	<b>Noun</b>
Noun	+	-al, -ary	=	Adjective	+	-ly	=	Noun



Examples:

Condition + al = conditional + ly = conditionally

Element + ary = elementary + ly = elementarily

The last four patterns have four strings of suffixations. Each is described in the following details.

#### 5. Nouns – Adjective – Adjective – Nouns

In this pattern, the Noun is added with suffix -ic to create Adjective. It can be further inserted suffix -al to create another Adjective, and finally suffix -ness can be adjoined to create Noun.

Example:

Category + ic = categoric + al = categorical + ness = categoricalness

#### 6. Nouns – Adjectives – Verbs – Nouns

In this pattern, the Noun is added with suffix -al to create Adjective. It can be further inserted suffix -ize to create Verb, and finally suffix -ation can be adjoined to create Noun.

Example:

Context + al = contextual + ize = contextualize + ation = contextualization

#### 7. Nouns – Nouns – Adjectives – Adverbs

In this pattern, the Noun is added with suffix -ion to create Noun. It can be further inserted suffix -al to create Adjective, and finally suffix -ly can be adjoined to create Adverb.

Example:

Variate + ion = variation + al = variational + ly = variationally

#### 8. Nouns – Adjective – Adjectives – Adverbs

In this pattern, the Noun is added with suffix -ic to create Adjective. It can be further inserted suffix -al to create another Adjective, and finally suffix -ly can be adjoined to create Adverb.

Example:

Category + ic = categoric + al = categorical + ly = categorically

## Adjectives Patterns

### 1. Adjective – Adjectives – Adverb

Only one forming suffix can be added to Nouns to create Adjectives and ended with suffix –ly to create Adverb found in this pattern.

Example:

Analytic + al = analytical + ly = analytically

### 2. Adjectives – Adjectives – Nouns

There are two forming suffixes (-al and -ate) that can be added to Nouns to create Adjectives and ended with suffix -ly to Adverbs. The pattern can be seen in table 8.

Table 8: Adjective – Adjective – Noun Pattern

<b>Noun</b>	<b>+</b>	<b>Forming suffix</b>	<b>=</b>	<b>Adjective</b>	<b>+</b>	<b>Forming suffixes</b>	<b>=</b>	<b>Noun</b>
Adjective	+	-al	=	Adjective	+	-ity -ism -ness	=	Noun

Consequent + al = consequential + ity = consequentiality

Consequent + al = consequential + ism = consequentialism

Consequent + al = consequential + ness = consequentialness

## Discussions

In his study, Schmitt and Zimmerman (2002) describe that formation of derivative in several cases is governed by non-transparent rules. Therefore, to settle on the accurate derivation form, learners must frequently confirm it through item-based learning – case by case. Schmitt and Zimmerman explain further that this can happen because there is no rigid rule that can be referred to create derivative forms. In many occasions, English regularities in suffix choice are unclear and incoherent.

However, the results of this study are not at all useless as scholars such as Bybee (1988) Selkirk (1982), and Di Sciullo (1997) who are quoted by Schmitt and Zimmerman (2002) provide lexical idiosyncrasy particularly in morphological and syntactic properties. They claim that the emerging patterns may be helpful for both teachers and learners. It can be jotted down that the noun-forming suffix –ity is adjoined only to an adjective (e.g., vitality), and the verb-forming suffix –ify is only combined either to an adjective (e.g., beautify) or to noun (e.g., testify). In addition, the verb-forming suffixes such as –ize, and –en will be much more appropriately attached to intransitive adjective (e.g., category, wide) than transitive adjective (e.g., proud, faithful).

Therefore, the above patterns give lexical idiosyncrasy ideas in how derivative are formed. Firstly, verbs can be formed into adjective, verb, or noun. Verbs forming nouns are possible to form its derivation into four strings. To make them easier to figure out, the following figure may be helpful.

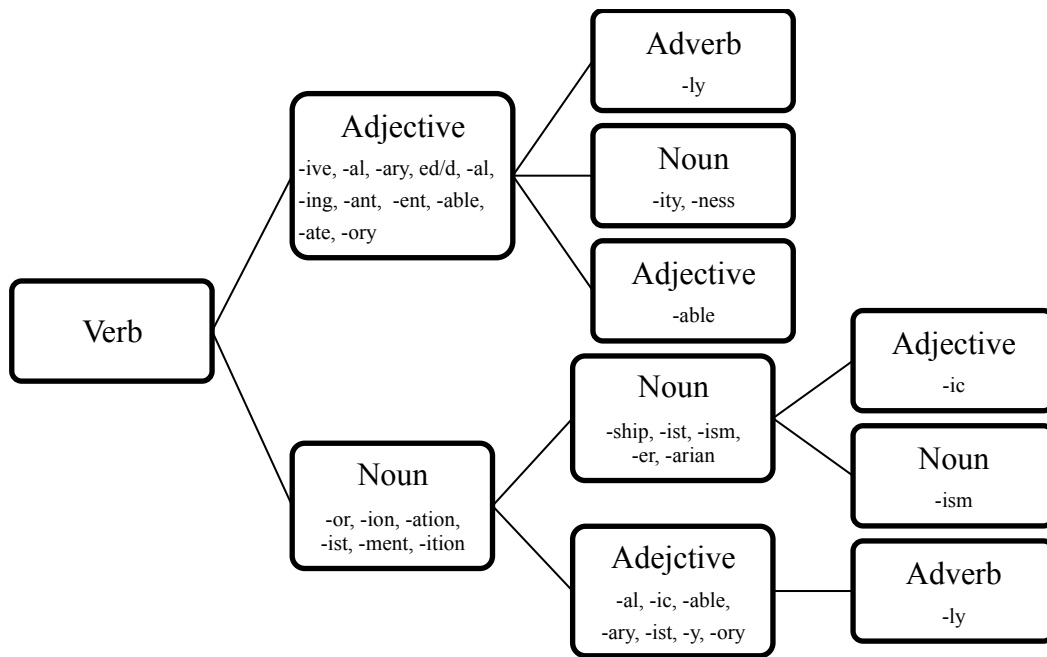


Figure 1: Derivative forms from Verbs

Secondly, nouns can be further transformed into verb, adjective or noun. Nouns forming adjectives are likely to form its derivation into four strings. To make them easier to discover, figure 2 displays the directions.

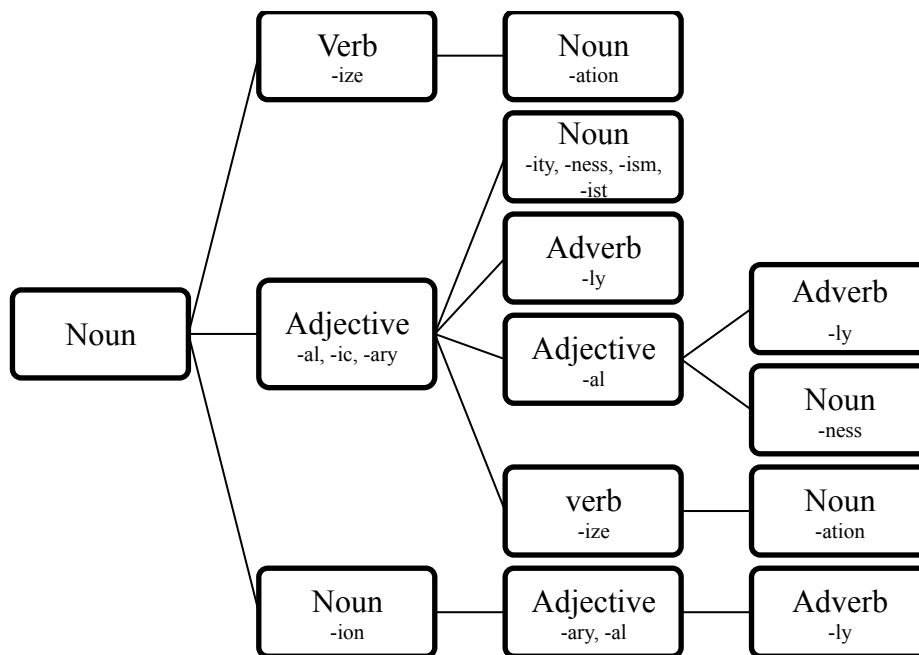


Figure 2: Derivative forms from Nouns

Thirdly, adjective can form another adjective by adjoining forming suffix –al and after that can be continued to form both adverbs by adding forming suffix –ly and nouns by inserting forming suffixes –ity, -ness, -ism.

## **Conclusion**

The patterns found above are prompted by verbs, nouns, and adjective with its combination even to four strings. Those patterns can be used to figure out how forming suffixes attached to a particular word class. It is realized that the patterns are only concept maps and therefore need further practical way to implement them to learn derivative formation. As stated by Schmitt and Zimmerman (2002), the results of their study call for teaching derivative forms in a more direct attention. This paper contributes an insight on lexical knowledge learning especially in derivative forming patterns more directly attentively. A further study on the characteristic of which forming suffix will go hand in hand with another suffix and that of visualizing the characteristic into learning materials is needed.

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