

LEXICALLY-BASED LANGUAGE TEACHING: METAPHOR IN ENGLISH FOR SPECIFIC PURPOSES

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Abstract: Metaphor can be a semi-technical vocabulary in ESP. In fact, it is abundant in all branches of science. Being a significant part of human conceptual system, it plays a basic role in the imaginative cognitive mechanism, which is common not only in daily activities but also in scientific inquiry. Although most ESP materials have been developed based on careful research and needs analysis on lexicon, metaphor has been ignored in the teaching of ESP. Lexically-based language teaching, however, underlines the importance of metaphor in ESP.

Keywords: lexically-based, ESP, lexico-grammatical units, technical vocabulary, metaphor.

Due to the internationalization of science, technology and commerce, the continued dominance of English is rising, especially with the emerging future's promising jobs such as information technology and the high-powered computing science fused with other fields involving web-security specialists, programming artists, robotic engineers, telematics, tech teachers, wireless developers, transoceanic tele-surgeons, tech support and bioinformatic scientists. As a result, the demand for ESP continues to increase and expand throughout the world. In the same vein, it is also evident that the biggest company, the hottest startups and the best research institutions are still in the U.S.

METAPHOR IN LEXICALLY-BASED LANGUAGE TEACHING

Metaphor has been overlooked and given less attention than it deserves in second language teaching. Applied linguistics textbooks and almost all TESOL textbooks do not include the importance and the idea of how to teach metaphor and how to learn metaphor in the second language acquisition context. Metaphor is thought to be mainly literary, and is reserved for literary students and literary artists. Lexically-based language teaching, however,

considers metaphor as an important aspect in language to learn by students, even by students of ESP of different specialism as their semi-technical vocabulary.

Kweldju (2005) has extensively discussed how metaphor is an important element to teach in lexically-based language teaching. This consideration is based on the theory of mental lexicon, cognitive linguistics, second language acquisition, and the abundant use of metaphor in daily activities.

Metaphor actually refers to a representation that describes how two words or expressions from apparently different domains may be associated at an underlying cognitive level. We know what is meant by a *living organism*, which can either be a plant or an animal only, but when we describe a city as a *living organism*, it is used in its metaphorical extension. In this case, a city is thought to have some properties of plants or animals, such as growth, dynamic movement, and the need of nourishment. The other examples include:

Metaphoric Extension in contexts:

- (1) He has *headed* out for a reunion tour
- (2) Bill Gates is a tech *giant*
- (3) Bali is a tourist *playground*
- (4) Migrant workers *flood* Jakarta
- (5) The essential *key* for success

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- (6) BMW is my *dream* car
- (7) He is looking for a *bright* career
- (8) *Rocky road* to peace
- (9) A *gateway* to success
- (10) A political *stage*
- (11) The country's *mounting* troubles
- (12) A *rough* year
- (13) They have a blood *debt* to us.
- (14) The world's most *powerhouse*
- (15) A city that never *sleeps*.
- (16) Every tiger is a *cash register*
- (17) The Middle East *erupts*
- (18) To *warm* people's hearts
- (19) A *bitter* disappointment
- (20) A complex *web* of relationship

Being aware of metaphor for developing metaphorical competence is an advantage for English language learning (Benjafeld, 1992). This is a step to know how language internally resembles because metaphor is also a word formation process, which leads to the abundance of homonymy. Most senses of most words in English are used metaphorically (Moon, 1988).

Metaphor needs to be exploited for facilitating English language acquisition, improving the quality, speed and amount of learning, making it casual and memorable for students, and helping students benefit from it to approximate their language to a native speaker's (Kweldju, 2005).

METAPHOR IN THE SCIENTIFIC LANGUAGE

There are two kinds of metaphor: conceptual metaphor and linguistic metaphor (Lakoff, 1987). Conceptual metaphors capture one's thinking about the nature of ideas. Thus, linguistic metaphor reflects conceptual metaphor. *Time is money* is a conceptual metaphor, from which linguistic metaphors are derived. For examples, because we can *save* our money, *spend* our money, *waste*, *lose* our money, *run out of*, *short of* and *invest* our money--and as time is metaphorically equalized with money--we can also *save* our time, *spend*, *waste*, *lose*, *run out of*, *short of* and *invest* our time.

The question is whether we use conceptual and linguistic metaphor in the language of science. It is presumed that accuracy is essential in science and scientific method, and metaphor is thought to be invalid for convincing, sound and satisfactory description and explanation. Metaphorical utterances have been thought to be aberrant, and made mainly by poets. However, this is not necessarily to be true, because virtually every sentence produced by

any human being contains metaphorical or other figurative elements. This strong claim is based on the fact that actually most literal expressions contain dead metaphors, that is phrases that evolved from what were originally novel metaphors, but have turned into idioms or clichés, i.e.:

01. the mouth of the river,
02. the neck of the bottle,
03. a comb of bananas
04. the star is born
05. a dark age
06. my honey
07. the centers of the world
08. way of life
09. your dream house
10. the early bird

but no one in the present century thinks of these as metaphors any more (Lycan, 1999).

Unlike in poetry, it is presumed that conventionally the use of English in science is formal and unbiased. However, like in daily speech, metaphor is also used almost in all branches of science. Metaphor has long been widely used in economics and other social sciences as semi-technical words, but it is also used in hard science like physics. Conceptual metaphor has made students and scientists easily understand science as discourse. For example, architecture uses metaphors, such as "to build a new *reclaimed* downtown with *big shiny boxes*", "you have to make an effort to identify the *DNA* of the city." In statistics we have *pie chart*. In computer science, we have *motherboard*, in biology *stem cells*, *queen bee*, in music *a musical magpie*, in politics we have "the president's *report card*", "*crusaders* in corruption," "the *clean* man in *transparency* international program", in environmental studies *greenhouse effect*, *green technology*, and "the CO₂ would be *buried* in aquifers," in health "as SARS *rages* in China, "avian flu *outbreaks*," and "*ring-fence* approach for quarantining up to 1,500 close contacts of SARS victims", in sociology "return to his cultural *root*," and *snowballing* in research methodology.

The use of these metaphors is very common and universal, because human conceptual system is actually metaphorically structured (Lakoff, 1987; Johnson, 1987; Charteris-Black, 2000). Frequently used metaphorical expressions are evidence of concepts underlying our everyday understanding of events and experiences. The teaching of lexis for ESP learners needs to consider these metaphors in specific corpus. For example, students will find that *currency* is really like a *current* that flows. And this association will make them understand and retain

the phrase “the free-flow of foreign exchange policy” more easily.

Metaphorical transfer has played an important role in the child’s acquisition of language (Lyons, 1977). It allows children and learners to convert sense of impressions into a set of abstract symbols by finding similarities and differences among phenomena in the world around us. Therefore, metaphors are widely used in pedagogy. A theory or the unknown is communicated by analogy with something already known to the learner, and this is known as pedagogical metaphors. Therefore, complex new concepts can be embodied in very common words, which people are very much familiar with. Enhanced metaphoric awareness will also help learners retain these figurative expressions in an ESP context (Boers, 2000).

Metaphor in Physics

One of a scientist’s goals is to discover ways of unifying and simplifying the various facts and concepts in their field of study. Metaphor helps us on the thought processes to build up a mental representation or mental imagery of the described events (Slobin, 2003). Even such a great scientist like Isaac Newton preferred to use metaphor to understand and explain light at the expense of taking the risk of utilizing an inaccurate one. Concerning light, for example, Newton explained that light was particles, as he ventured to prove that it shared the properties of particles. It was Christian Huygens, Newton’s contemporary, in 1670, who proposed that—again metaphorically—light was wave. Based on this conceptual metaphor that light is wavelength, a number of experiments were conducted to test whether or not light behaved as a wave and if it did, what the nature of its vibrations was. Only later did scientists come to an agreement that light possesses a sort of dual personality, partly wavelike and partly particlelike, because scientists discovered that a moving particle is in some ways like a wave.

Light, then, is metaphorically specified as waves on the surface of plain water. A number of assumptions about light waves are made, and are reflected through the linguistic metaphor, such as:

11. light *travels*
12. light *has speed* which varies in different materials
13. light *bends around* obstacles

When Newton investigated how the earth orbits the sun because of the gravitational force ex-

erted on the earth by the sun, metaphorically he also simplified this force as an abstraction with many daily situations, such as how a racket hit a tennis ball and how the tennis ball exerted force on the racket.

Metaphors are abundant in physics textbooks, such as:

14. the lever arm
15. the moment arm
16. the pull of gravity
17. the time of flight
18. in a television tube, electrons are shot from a gun at one end of the tube and strike the picture screen at the other end
19. electrons shoot down the picture tube and strike fluorescent material on the screen
20. the sun holds the earth in orbit
21. the horsepower of an engine
22. an atom smashing machine known as a Van de Graff generator
23. we often accelerate atomic particles to such high speeds
24. a ball-like molecule striking the wall
25. we picture it as undergoing elastic collision
26. heat energy flows into a substance
27. heat energy flows from one object to another.
28. only the most energetic molecules can escape from the liquid.
29. for many years most scientists could not conceive of heat and light from the sun traveling through nothing
30. heat flows from hot to cold
31. radio waves
32. wave crest
33. gravitation field
34. magnetic field

Metaphor in Biology

Biologists also use metaphor to understand biological activities. When a biologist tries to understand organic molecules, he understands that all organic molecules have a *carbon skeleton*. Like a real skeleton, this metaphoric name reflects that this element of a molecule is composed of *rings* or *chains* of carbon, which they also compare them with *beaded necklace*. Like a real skeleton, *carbon skeleton* also determines the overall shape of a molecule.

When a biologist wants to explain the circulatory system and its fundamental parts, metaphor is also directly employed. The circulatory sys-

tem is comparable to the city public transport system. Blood is the medium to *transport* material and heat. The heart is the *station* or the *pump* that *forces* and *regulates* the fluid blood from one part of the body to another. The heart pumps blood into arteries or main roads, which successively *flows* into smaller arteries and tiny vessels or capillaries, where materials are exchanged between the blood and tissues through the *wall* or the capillaries. The blood flows from the capillaries into veins that combine into larger veins that ultimately *return* the blood to the heart.

Interactions among cells and their environment are essential in living organisms. Therefore, there are a number of linguistic metaphors to reflect these transport systems in the human body, such as:

35. active transport
36. passive transport
37. oxygen transport across placenta
38. membrane transport
39. respiration electron transport system

Living things are also *a chemical factory*. Nutrients are the materials to process *to manufacture* organic molecules. This factory also needs *energy* to support all activities, so that this factory needs energy-rich food molecules. At the cellular level, for example, energy is for active transport for moving molecules between cells. Energy is also required for mechanic work, like muscle contraction.

Since conceptually antibodies are the body defense system, a number of linguistic metaphors are used to reflect their function:

40. to attack cancer cells
41. to inhibit cancer cells
42. to destroy cancer cells
43. to fight bacteria and viruses as foreign invaders

Metaphor in Economics

Metaphor has been vastly used in economics. One of the most recent terms in economics is *float* in *floating exchange rates*. This term, which is globally used was first coined in the United States in 1971. Under this system the price of one currency in terms of another is determined simply by supply and demand, as exporters and importers compete in the open market to buy the currencies they require (Solmon, 1980).

We are used to current economic terminologies, such as deficit, surplus, market, undervalued or overvalued, but through metaphors, both animate and inanimate, a lot of general service words

have entered the world of economics unnoticed. Metaphors are originally figurative but later they are transformed to literal parts of ordinary language. Then, the distinction between the two is blurred.

Economy is an abstract concept, but, to understand it better, cognitively it is associated with human beings, and is expected to *grow* and become *full-grown*. Ideally it must be *strong*, but like human beings economy can also be *weak*, *sick*, and *get well* again if it is treated with the *right medicines, doctors, and treatment*. Bad economy, as a *patient*, does not only need a good doctor, but it must also be a good *patient* for recovery. When economy is good, like human beings, it will move very *fast* and agile. In another situation, economy--like a mass of helpless human beings struck by a disaster when they cannot help themselves but need the help of rescuers-- can also be *crippled by a massive disaster*, and it needs a *structured, well-planned* program to reduce the pain. Economy can be *sick*, and it must be *healed*, without which it can be *worrisome* and *threatening*. Like an ailing human being, bad economy can be *infectious* to others and *hurt other related sectors*. Like human illness economy can be *slightly bad* until *seriously bad*, and there is always a hope to cure it, when the right medicine or treatment is given. A *wrong treatment*, however, will cause more problems. Although economy can be corrected, it cannot come easily; continuous patience and seriousness for energetic progress is imperative. Bad economy is like an *enemy* that attacks us and must be *forcefully fought back*.

Economy, however, is not only compared to human beings, but it is also compared to *balloons*. Balloons *float*, but when they are *overheated*, they will naturally *burst*. Economy is also linked to a *construction*, because of the shared features the pair holds, like both are expected to be *permanently strong*, but they can go dilapidated when it is not well-maintained.

In economics it is not only the concept of economy which is understood using metaphors, but also the economic elements. For example, *prices* are understood by attributing them with the qualities of *human movement*, either vertical or horizontal.

Cognitively, metaphor in economics reflects how we conceptualize economy today, economy is like human beings, balloons, vehicles, and constructions, and linguistically these conceptual metaphors are reflected in these following shared properties:

- (1) economy is comparable to human growth: from infancy to maturity

- (2) economy is comparable to human health: moving fast when in good stamina and more immune to diseases
- (3) bad economy causes little energy to move up;
- (4) bad economy uncontrollably falls down
- (5) *bad economy moves slowly, weakly*
- (6) bad economy is a sick economy in different degrees of severity
- (7) like human, economy can be hit by a disaster in a massive scale and needs a structured program to save it
- (8) bad economy can cause worries and threats because of the potential torment it causes
- (9) bad economy may extend to other areas and affect other sectors
- (10) bad economy can be corrected with a correct treatment
- (11) bad economy can also be healed
- (12) economic recovery is a process from a slight to full recovery
- (13) good economy is energizing, bad economy is weakening
- (14) bad economy is an enemy that attacks and must be fought back
- Conceptually bad economy is also like a balloon, so it can linguistically be inflating, soaring, floating, landing, and busting, to mention some. Vehicles and constructions are also used to picture economy, as shown by these following lexical data taken from *The Economist*, *Times*, *Newsweek magazine*, and *Jakarta Post*.

(1) The economy is compared to human growth: from infancy to maturity

in return for a promise of the Indonesian economy	<i>stability and economic growth</i>	
most people do not care whether East Asia's economies will	<i>would grow</i>	this fiscal year by 4%
they count on strong	<i>GDP growth</i>	is 2 percent or 5 percent
curb the world economic	<i>grow</i>	nearly twice as fast as the world rate
for about half the export	<i>growth</i>	
	<i>growth</i>	
	<i>growth</i>	

(2) The economy is compared to health: moving fast when in good stamina and more immune to diseases

the economic	<i>health</i>	of the United States.
the Index	<i>moved full-throttle ahead</i>	and ended up by 22.877 points or 3.1 percent.
Indonesian economy is	<i>immune</i>	to restive province
China's economy seems	<i>immune</i>	to the current global malaise
helping to lead the world	<i>upswing</i>	
to slow its	<i>runaway</i>	economy
continued growing at a	<i>Blistering</i>	pace

(3) The bad economy does not have any energy to move up; it will uncontrollably fall down

the US dollar has kept on	<i>sliding</i>	against other major currency
why is the dollar	<i>plunging?</i>	
dollar	<i>fell</i>	by almost 10 percent against yen in one year
dollar	<i>wilts</i>	
the precipitous	<i>fall</i>	in the value of the US dollar
Stock market and currency	<i>slide</i>	
has not halted the Rupiah's	<i>slide</i>	
when the economy	<i>climbed out of</i>	recession
Garuda's pre-tax profits in 2003	<i>nose-dived</i>	by 76 percent from the previous year
when situation accelerated the	<i>downward</i>	spiral of the economy

(4) The bad economy moves slowly, weakly

growing pains	<i>slow</i>	an Asian tiger
	<i>crippling</i>	debt
the currently	<i>weakening</i>	purchasing power
South America giant Brazil has	<i>stumbled</i>	into recession
Tuesday's trading saw a	<i>staggering</i>	2.2 billion shares exchange
	<i>weak</i>	demand in the West
financial markets have	<i>slumped</i>	
the Indonesian Rupiah	<i>weakened</i>	due to local corporate demand for dollars

(5) The bad economy is a sick economy in different degrees of severity

Peregrine's	<i>debt headache</i>	stems largely from a loan of more than \$250 million
the territory's largest investment bank, was on the verge	<i>of collapse</i>	
Thailand's economic problems represent the	<i>growing pains</i> of a developing country	
capping prices on certain service goods in hopes of	<i>stifling inflation</i>	
to revive Asia's two other	<i>sickest economies</i>	
reducing the poor people's vulnerability to	<i>ill health and economic shocks</i>	
the wake of its 2001-2002	<i>economic collapse</i>	
	<i>Painful</i>	is the word to describe Thailand's economy

(6) The economy can be hit by a disaster in a massive scale and needs a structured program to save it

when the IMF-led effort in recent months committed a combined		
\$117 billion in	<i>rescue packages</i> for Thailand, Indonesian and South Korea	
to accelerate poverty	<i>alleviation program</i>	
the government's	<i>poverty eradication</i> program	
only	<i>emergency measures</i> could save the Thai economy	
it further urged rich countries to increase	<i>aid flows</i> .	

(7) The bad economy can cause worries and threats to people because of its potential to be tormenting

why Asia's financial crisis is	<i>getting scary</i>	
the economy is very, very	<i>depressing</i>	
the financial blight in Asia has reached a new	<i>worrisome stage. worries</i>	about the recoveries
even for those who keep their jobs, the crisis is	<i>carrying a sting</i>	
Indonesia seemed to be entering a new year of	<i>living dangerously</i>	

(8) The bad economy may extend to other areas and affect other sectors

which is sure	<i>to hurt</i>	the territory's vast property sector
tight money	<i>strangles</i>	a recovery
the weakening purchasing power that is likely	<i>to hurt</i>	the current spending spree
because China was relatively isolated from the	<i>the pain</i>	
global economy few other countries shared		

(9) The bad economy can be corrected with a correct treatment

there were hopes that the	<i>injections</i>	would prop up confidence to get financial houses in order
Peregrine had been counting on a \$200 million	<i>cash injection</i>	from the Zurich group ample liquidity into the money market
Thai people will share the pain caused by the	<i>injecting</i>	but will emerge stronger for it
Indonesia needs new approaches	<i>IMF medicine</i>	economy
jump-starting Indonesia's ailing	<i>to heal</i>	
economy will require	<i>unconventional methods</i>	

(10) Like a sick human, the bad economy can recover, too

fell at one point to a record 10,500 to the US dollar	<i>recovering</i>	to 8,150 on Friday
Indonesia is currently experiencing a jobless	<i>recovery</i>	
Indonesia should thus prepare for	<i>reinvigorated</i>	demand from the US

(11) Economic recovery is a process from a slight to full recovery

Japan's	<i>fledging</i>	recovery
recovering but still	<i>vulnerable</i>	Global economy
the world economy is in	<i>strong</i>	recovery

(12) Good economy is energizing, bad economy is weakening

China's surging growth has been a welcome	<i>tonic</i>	
their economies	<i>were shrinking to fuel</i>	job creation
strong sales data helped	<i>push</i>	the dollar to a 3 week high against the yen
economic risks	<i>weaken</i>	consumer and business confidence
	<i>fueling growth</i>	in the world second largest economy

(13) Bad economy is an enemy that attacks and must be fought back

	before the financial crisis	<i>hit</i>	the region
	most of Asia's currencies took a severe	<i>beating</i>	last week.
	regional administrations that are successfully	<i>fighting</i>	poverty

(14) Bad economy is like a balloon, growing, soaring, floating, landing, or busting

efforts by Beijing to let some of the air out of the	<i>balloon</i>	before it burst
IMF warned last week of signs of		overheating
forceful measures	to cool	<i>the economy</i>
the government has been trying	to cool	<i>investment</i>
try to calm	soaring	<i>investment</i>
whether Beijing's technocrats can manage	<i>a soft landing</i>	
China is moving toward a	<i>floating currency system</i>	
our economy was beginning to	<i>overheat</i>	
the mainland economy was a	<i>bubble</i>	
from the bursting of dot-com	<i>bubble</i>	
the right time for the Chinese to rein in the	<i>bubble</i>	
China has suffered	<i>boom-and-bust</i>	
China's policymakers may lack the monetary tools to engineer	<i>a soft landing</i>	
at risk of overheating but stressed the government was taking action to ensure	<i>a soft landing</i>	
the Government took the first major steps by	<i>floating our currency.</i>	

(15) The economy is like a vehicle, and the good, stable economy is like a smoothly and steadily moving vehicle

the world economy	<i>will coast steadily</i>	riding on the steady U.S.
shares were expected to open	<i>steady to slightly</i>	
	<i>higher ahead</i>	of key testimony.
The national economy would	<i>spin</i>	out of control
Chinese economic	<i>juggernaut</i>	was now a major force
	<i>the car is going at</i>	A high speed
but we should not have a	<i>sudden breaking</i>	
that is what people call	<i>the soft landing</i>	of a stable economy
we should not have a sudden	<i>breaking</i>	
would take strong measure to	<i>rein in</i>	China's run away economy
we have to control two	<i>valves:</i>	credit and land
The economy will be	<i>stuck</i>	again
The economy is	<i>headed</i>	toward an overall positive direction
natural gas would help keep the Indonesian economy	<i>afloat</i>	
the Chinese are going to	<i>gear</i>	their domestic economic policy
China's	<i>high-flying</i>	economy is in danger of overheating

(16) Like other vehicle, economy must be well-controlled.

a rigidly	controlled	economy
the macro-economic	control	policies
to bring investment under	control	

(17) The economy is compared to a construction

Malaysia has been talking about	<i>restructuring its rickety</i>	banking
into a few	<i>sturdy</i>	competitive banks
there has been a	<i>whitewash</i>	on the outside of the banks
	<i>architect</i>	of economic reform

(18) An investor is a hungry man, but he keeps his discriminating taste bud

investors are	<i>hungry</i>	if they get the pricing right, the demand appetite is there
investors	<i>are rushing</i>	to the market
to curb the investment	<i>craze</i>	
where a surging	<i>appetite</i>	for cell-phone service

(19) Stable, rising and falling price

gold prices	<i>stood</i>	at \$6.245 per ounce
copper prices were	<i>steady</i>	at \$2,326 per ton
three months aluminum prices	<i>slipped</i>	to \$1,594
three months zinc prices	<i>edged down</i>	to \$1,202 per ton
the RSS	<i>slipped</i>	to 144.10 U.S. cents
the price of base metals	<i>slumped</i>	
the government decision	<i>to hike</i>	phone rates
shares in Toyota climbed more	<i>climbed</i>	more than one percent
shares in the Mitsubishi motors	<i>jumped</i>	11 percent
gold prices	<i>stumbled</i>	below the US\$400 threshold to reach a one-month low
Jakarta stocks	<i>tumble</i>	to five-month low.
silver prices also	<i>skidded</i>	to a one-month tough on the heels of gold
	<i>shot</i>	up 16.8 percent
shares in Kanebo Ltd		
prices	<i>surged</i>	by more than a dollar
Oil	<i>soars</i>	on cold snap
China's	<i>soaring</i>	economy
as stock prices	<i>rocketed</i>	upward
oil prices	<i>rocketed</i>	
dollar	<i>jumps</i>	against yen
the price of cocoa for May delivery	<i>fell</i>	to £ 791
cocoa prices	<i>weakened</i>	
Singapore share prices are expected to	<i>smash</i>	the 1,900 point level this week

The Use of Metaphor in ESP

Although metaphors have been thought to belong to literary texts only, they actually pervade the body of technical vocabulary. ESP students need to know about the significance of metaphor for many reasons to make their learning more meaningful. First, metaphor can be a vehicle for reflection and awareness for learning technical vocabulary. Students will recognize the important perspectives of metaphorical thinking and value it as an important semiotic tool to retrieve the use of metaphor-based technical vocabulary. As a vehicle for mediating mental process, it is a metaphorical strategy for students to improve their vocabulary skill through a richer context of learning for stronger and deeper conceptual relations and restructuring in their memory.

Second, metaphor is a psychological tool in the construction of personal knowledge. When students are aware of the metaphorical images they find in a text, the metaphor they find in their ESP materials can also be a guiding metaphor as a way of comprehension. It helps students move from the intermental to the intramental plane of knowledge for knowing, meaning making and guiding behaviour (Guerrero & Villamil, 2002). In turn, compre-

hension will even better develop their technical vocabulary skill.

Third, metaphor is also a motivating tool. It helps students generate interest in learning technical vocabulary. Through analyzing similarities between the metaphor and what they have known very well, students will intrinsically be motivated to learn more, as motivation depends, among others, on the conditions within the interesting task that makes an effort satisfying.

The tasks students can use in using metaphor for their learning of technical vocabulary and ESP texts are: (a) collecting the linguistic metaphors in their ESP texts, (b) generalizing them for their conceptual metaphor through finding the parallel or agreement between the metaphor and the concepts.

CONCLUSION

The importance of ESP will continue to rise along with the importance of English in the emerging future's promising jobs. Technical words have received preferential treatment in ESP, but little does it pay attention to metaphor as semi-technical vocabulary. Metaphor has been thought as mainly a

linguistic ornament, but it actually pervades into all branches of science. Lexically-based language teaching exploits metaphor for facilitating the learning of English as a second language, including in the area of ESP. This consideration is based on the theory of mental lexicon, cognitive linguistics, second language acquisition, and the abundant use of metaphor in daily activities.

In fact, metaphor is also abundant in all branches of science, including physics as hard science,

where it is believed that the solidity of meaning is crucial. Metaphor is found in all language use, because it is linguistic and conceptual at the same time. It linguistically maps how people think, reason and imagine in everyday life. It is a cognitive model for abstract concepts. Economics, especially, has a high metaphorical density. The conceptual and linguistic metaphor found in economics can really reflect how we understand about economy itself.

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