BOĞAZİÇİ UNIVERSITY JOURNAL OF EDUCATION
2022, VOL. 39, NO. 1
https://doi.org/ 10.52597/buje.1038478

University Students' Positive and Negative Perceptions of Lifelong Learning: A Metaphoric Analysis

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Abstract

In tertiary education, lifelong learning (LL) skills alongside technical skills need to be prioritized. Is it, however, correct to assume that all university students are familiar with LL? Even so, might some students believe that LL is a source of tension? One way to understand these aspects is through metaphors, commonly used to convey the meaning individuals attach to concepts. Thus, this study investigated 229 university students' metaphoric perceptions of LL. Data were collected using a discourse completion task. Results revealed that the students had limited understanding of LL as reflected through their chosen metaphors. The metaphors most frequently used to define LL were "tree," "life," "universe" and "trip." The students' explanations pointed to a variety of attributes of LL, "continuity," "limitlessness," and "expansion of horizons" being the most frequent ones. There were also metaphors and attributes denoting negative perceptions. We recommend LL skills be made an integral part of curricula to enhance students' potential for becoming lifelong learners.

Keywords: lifelong learning, lifelong learner, metaphor, student perceptions, tertiary education

Article info

Received: 19.12.2021
Revised: 09.02.2022
Accepted: 24.02.2022
Published online: 08.08.2022

Introduction

Hardly a day passes when we do not hear the slogan "Education is a must!" expressed with the sentiment that it is through education that we acquire values, knowledge, and skills essential for success in life. However, what is often overlooked is the concept of learning, which can be defined as "the lifelong process of transforming information and experience into knowledge, skills, behaviours and attitudes" (Cobb, 2021, para. 2). Approached from this perspective, learning includes education and takes place throughout life, encompassing all forms of learning, both job related and non-job related, within and beyond formal education.

Learning is inevitable and may be prompted by a variety of factors, one of which is changes we experience throughout our lifespans. Also, due to our endless potential for technological and cultural development, learning across the whole of our

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lifespans is inevitable (London, 2011). For it to be utilized fully though, this potential should not be left to chance; the constant commitment to learning again and throughout life ought to be imparted to students during the years of formal education. Only in this way can they be prepared for the need and the desire to continue their learning beyond school. Therefore, it becomes incumbent on educational institutions to provide students with the opportunity to acquire the skills in lifelong learning (LL).

The extent to which students are involved in LL experiences determines how likely they are to improve their LL skills. It is, however, essential to start with where students are (Deveci, 2014). That is, students with a predominantly authoritarian educational background may not have an inclination for LL. Far worse, they may consider LL to be an inhibitor. The concept may not even exist in their tacit knowledge. One way to determine their perceptions is through metaphors, which we further discuss below.

With these points in mind, we wanted to investigate our university students' perceptions of LL reflected through metaphors. Given our professional background and teaching experience in engineering institutions, as well as based on the convenience factor, we focused on engineering students; however, the concepts we define below, as well as the results yielded by our study might as well be relevant to other disciplines in different geographical locations.

Lifelong Learning and Lifelong Learners

The European Commission (2001) provides a traditional definition of LL: "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective" (p. 9). As is clearly indicated in this definition, LL is not limited to learning related to one's profession; it is geared towards individuals' holistic development in all spheres of life, including schools, workplaces, society, and the family (Bozkurt & Ucar, 2021). Although it includes formal learning taking place in education institutions, Hager (2021) cautions that too much focus on formal learning hinders deeper understanding of LL and argues that the role of informal learning in LL should also be given prominence. He characterizes LL as essentially informal, while others believe LL covers all kinds of informal learning (Kraiger et al., 2021) in addition to any other types of learning, including formal, non-formal, continuing, and workplace. In support of these arguments, Kenny (2019) posits that informal learning is "the oxygen of a lifelong learning society" (para. 15).

The European Council (2012) defines informal learning as "learning resulting from daily activities related to work, family or leisure and is not organized or structured in terms of objectives, time or learning support" (p. 5). A similar definition is provided by Livingstone (2006): "all forms of intentional or tacit learning in which we engage either individually or collectively without direct reliance on a teacher or externally organized curriculum" (p. 204). Inherent in these definitions is the idea that learning is

an intrinsic part of life, can be intentional or tacit, is undertaken individually or in collaboration with others under or without the supervision of a mediator. Learning can be related to one's profession or personal life/interests, as is emphasized in the above-mentioned definition of LL by the European Commission (2001).

There have also been discussions held widely related to the qualities of lifelong learners. Based on data from faculty, administrators, and advisors, Love (2011, p. 158), for example, identifies a variety of qualities of a lifelong learner, most of which are job-related. These are as follows:

a) taking responsibility for planning his professional career path;
b) understanding the role of professional organizations in LL;
c) seeking certifications associated with his profession;
d) self-assessing, asking others to assess him, reflecting and taking learning action based on assessment and reflection;
e) remaining current in his field and taking responsibility for identification of knowledge deficiencies and learning opportunities;
f) knowing criteria that will be used to evaluate performance and professionalism,
g) having a multiyear professional development plan, and
h) having learning interests outside his profession and pursuing those with vigor.

Adopting a wider perspective, Qinhua et al. (2016, pp. 6-7) identify the following qualities as essential for one to be a lifelong learner:

a) acknowledging the theory and value of lifelong learning;
b) strong desire and motivation to learn, coupled with a sense of responsibility;
c) clear self-perception, in addition to continual self-reflection and self-assessment;
d) sefl-direction, self-adjustment, and control of one's learning process;
e) skills in using learning methods, strategies, approaches and reseources of all kinds to assist their learning, and
f) ability to assess the effects of their learning and use what they have learned in the process of solving problems and facilitation of further learning in the future.

On the other hand, Duman (2007) approaches the concept from the perspective of *knowledge literacy* and states lifelong learners are knowledge-literate people who

a) accept the fact that knowledge is the key to making informed decisions,
b) know how much knowledge they need as well as when and where they need it,
c) define the kind of knowledge necessary to solve a problem through the question-and-answer technique,
d) define and locate potential sources of knowledge,
e) evaluate the usefulness and accuracy of the knowledge they acquire in terms of its relevance to the problem at hand,
f) organize, store, and use different kinds of information purposefully, and

g) integrate the new knowledge with the existing one, which is then used to tackle the problem at hand.

The list of attributes in the foregoing points to the direction towards which tertiary education needs to be geared. Without readiness for learning throughout their lifespans, students will be at a significant disadvantage in their attempt to come to terms with the exigencies of their professional and personal lives. Successful engagement in LL is as much a requirement for professional development as it is a requisite for holistic growth. Thus, it is impossible to restrict LL skills to the professional sphere per se, which is also explicitly stated in Love's (2011) list of the characteristics of a lifelong learner. The development of university students' LL skills will be, therefore, in tandem with the developments in their professional and personal lives. Thus, faculty's contribution to students' academic skills through LL training will have far-reaching impacts beyond formal education. So much so that "Learning in all parts of an individual's life course is essentially an unbounded activity, one which frequently takes place beyond institutions — this is especially the case in the twenty-first century where information technologies enable individuals and groups to freely access existing (and create new) knowledge" (Fisher et al., 2019, pp. 8-9).

Lifelong Learning and Engineering Education

We can surmise that by the time they start their tertiary education, students have formed a certain attitude toward learning, which may or may not be compatible with LL. Therefore, it is important that universities pay explicit attention to discipline-specific as well as generic LL skills, such as personal and interpersonal skills, problem-solving, cultural understanding, and planning and organizing activities (Yeung et al., 2007). In support of this, the Accreditation Board for Engineering and Technology (ABET) (2017) mandates that engineering programs develop students' recognition of the need for, and an ability to engage in, LL. A robust range of studies also supports the contention that LL must be an intrinsic part of engineering education just as it is of other disciplines. For instance, pertaining to a civil engineer in particular, Latinopoulos (2005) notes

> In our days a civil engineer is not only a designer, a planner or a constructor. He is also a producer, a decision-maker and most probably a leader. In order to succeed in such a multiform of professional tasks, the civil engineer should constantly acquire a planned combination of knowledge, experience and skills, as well as develop his individual qualities and competences. (p. 121)

On the other hand, Peat et al. (2005) emphasize the importance of LL across engineering curricula, noting that a separate course on LL would be inadequate. Engineering departments, according to them, need to adopt a multidisciplinary approach to learning and teaching, enabling students to develop a strong aptitude for LL.

In order to become lifelong learners, engineering students ought to have certain soft skills alongside hard skills. Taylan and Bafail (2019) note that soft skills essential for engineering students include analytical thinking, verbal and written communication, and leadership skills. Soft skills also consist of mindfulness of the rights of others and respect to others. All these facilitate human connections, which assists in building relationships, gaining visibility, and creating opportunities for advancement.

The above-mentioned idea of 'mindfulness of the rights of others' is also emphasized by ABET (2007) via its reference to *ethical responsibility* as a key soft skill, which requires engagement in effective intrapersonal communication, an aspect of which is emotional intelligence. Considering Neil Armstrong's note in the foreword of "A Century of Innovation: Twenty Engineering Achievements That Changed Our Lives" by Constable and Somerville (2003) that engineers' main responsibility is to improve the quality of people's lives by providing solutions to societal needs, engineers need to be cognizant of societal needs. This cannot be achieved without the ability to empathize (Deveci & Nunn, 2018). It requires students to engage in continuous learning of changes to people's lives triggered by technological, economic, and political developments. Awareness of these points is the role of LL, not only in students' own lives but also in the lives of others, which brings an additional layer to the meaning of LL.

Metaphoric Perceptions of Lifelong Learning

The word metaphor is defined in the Merriam-Webster's online dictionary as "a figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness" (n.d.). Similarly, Ritchie (2013) defines the word as "seeing, experiencing, or talking about something in terms of something else" (p. 8).

Lakoff and Johnson (1980) state that metaphors are an expression of thought structures and "our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphoric in nature" (p. 3). Not only do our metaphoric conceptual systems govern our thoughts, but they also impact our everyday functioning. Accordingly, the analysis of students' conceptual systems of learning displayed through the metaphors by which they live can provide insights into their perceptions of LL affecting their (dis)engagement in learning endeavors related to their professional and personal lives. Their metaphoric perceptions of LL can be a useful predictor of LL skills they either possess or need to improve. These would enable faculty and university administrators to refrain from introducing educational practices in an *ad hoc* way. These would also assist in designing and executing educational interventions that support the notion of learning as "a lifelong process of transforming information and experience into knowledge, skills, behaviours and attitudes" (Cobb, 2021, para. 2).

There has been some research into participants' metaphoric perceptions of LL in a few disciplines. These include nursing and nursing education (Şenyuva & Çalışkan,

2014; Şenyuva & Kaya, 2013) and teacher education (Gultekin & Aricioglu, 2017; Mudra & Aini, 2020; Sezer, 2018). There is also some research conducted into engineering students' metaphoric perceptions of concepts such as science and technology (Sadoglu, 2018). In addition, Boz (2020) studied civil engineering students' metaphoric perceptions of adult education. Although his study provides insights into civil engineering students' thoughts on adult education, the concept of LL is more comprehensive than adult education. The most significant difference stems from the very definition of the concept of education, which can be defined as an activity "undertaken or initiated by one or more agents that is designed to effect changes in the knowledge, skill, and attitudes of individuals, groups, or communities" (Knowles et al., 2005, p. 10). What is inherent in the meaning is that "education emphasizes the provider of knowledge and skills. In contrast, learning emphasizes the recipient of knowledge and skills and the person(s) in whom a change is expected to occur" (Stanhope & Lancaster, 2012, p, 353). Hence, LL denotes "the development of human potential through a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills, and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances, and environments" (Longworth & Davies, 2013, p. 22). On this account, LL potentially encompasses all forms of learning, whether formal, informal, or incidental, and whether by adults, the elderly, or children. Against this backdrop, not only do individuals' perceptions of LL affect their skills and engagement in learning throughout life but they also impact the learning experiences of those with whom they are in close contact, e.g., their family members, colleagues, peers, and instructors. The latter is of particular importance considering the role of interpersonal communication skills in the enhancement of LL skills (Deveci, 2019). Indeed, the eight key LL competencies identified by the European Council in 2006 point to the place of interpersonal communication. The third competence, closely linked to engineering education, is related to science and technology, requiring the acquisition and application of knowledge and methodology to address society's needs. This accords with Lieb-Brilhart's (1978, p. 140) contention that "The overall goal of the [LL] learning movement is that all of us participate fully in and contribute to society throughout our lives." Intrinsic to this argument is the connectedness of individuals in society, whose LL skills are inextricably linked to one another.

Research Question

By examining their metaphoric conceptual systems pertaining to LL, important insights can be gained into students' knowledge and interest in LL. To this end, this research asked the following question:

> What are students' metaphoric perceptions of LL?

Method

Code of Ethics

Written permission was obtained from Dicle University administration for data collection with the number E-26452168 -100-1197 on 08.01.2021. All the participants took part in the study on a voluntary basis, and their identity was kept confidential.

Participants

Adopting the convenience sampling method, the data for this study were collected from 229 undergraduate civil engineering students at a Turkey-based university where the second author of the current paper is employed. Of this number, 159 were male and 70 were female. The students' ages ranged from 18 to 47, with a mean age of 24. The group consisted of 22 freshmen, 100 were sophomores, 42 juniors, and 65 senior students.

Data Collection and Analysis

The data were collected using a discourse-completion task. The students were first given the dictionary meaning of metaphor followed by two examples and possible explanations for the metaphor used in the examples. They were then asked to complete the statement "To me, lifelong learning is …". After this, they were asked to explain their reasons for the choice of that particular metaphor. To this end, they completed the sentence, "This is because …" They were given ample space in which to write their responses without a restriction on the number of words.

Based on the previous research (Boz, 2020; Mudra & Aini, 2020; Şenyuva & Caliskan, 2014), we followed a series of stages for data analysis. In the first stage, we checked whether the students used a metaphor or not. Fifteen of the students did not use a metaphor or did not explain the metaphor they generated. As this indicated a lack of understanding of the task, these students' responses were excluded from the data set. We also noted that 34 students used a simile instead of a metaphor in their responses. While the former involves "a comparison that uses *like* or *as*, or a related word," the latter involves "a comparison that shows that two things are alike by making it sound as if they are the same thing" (Stefoff, 2018, p. 5). Yet both are figures of speech using different types of analogies. It is also important to note that previous researchers (e.g., Boz, 2020) collected data on participants' metaphoric perceptions through similes. Accordingly, those students' responses in the current study were maintained in the data set. In the second stage, we put the metaphors in alphabetical order so we could identify the frequency of each metaphor used. In the third stage, we analyzed the justifications provided by the students and put them into categories according to the particular attributes denoted by each metaphor. Since different metaphors were used to denote particular attributes, we then matched the attributes with their accompanying metaphors.

When analyzing the attributes, we noticed that some students used positive and negative connotations, which we grouped separately.

For inter-coder reliability purposes, upon a standardization session, we — as the two researchers — conducted the qualitative data analysis separately. The analysis results were then compared. An initial agreement rate of 84% was achieved. We discussed the divergences until agreement was reached. The items not agreed upon were excluded from the data set.

Results

This research aimed to identify university students' metaphoric perceptions of LL. The data included the metaphors they used as well as their explanations of the metaphors. Table 1 lists the metaphors and the frequency with which they were used.

Table 1

Metaphors

Metaphors	#*	#**	%
1. tree	17	17	8.1
2. life	12	12	5.7
3. universe, trip	10	20	9.5
4. baby, book, water	9	27	12.8
5. treasure	8	8	3.8
6. breath, ocean	6	12	5.7
7. food, experience	5	10	4.7
8. hunger for knowledge, library, stairs, innovation, iron, sea, *war*	3	21	10
9. the brain, bottomless well, youth, the sun, the world of science, ant, bird, technology, competition, school, star, wisdom, seed, sleep, door	2	30	14.2
10. wealth, a new page, pillow, *cannibalism*, petrol station, vitamin, rebirth, ever expanding borders, song, *artist*, cake, *paradox*, antivenom, maturity, happiness, grease, butterfly, determination, promotion, money at the end of stormy sea, storehouse, a smart suit, *electric shock*, a person young forever, heavenly gift, *dope*, soul, boomerang, a plant root searching for water, learning to ride a bike, cement, *barrier*, driving a car, trainer, encyclopedia, parent, stream, transformation, *labor*, energy, day and night, future, rainbow, shadow, help in the hour of need, will power, light, snow ball, income, *black hole*, ripe fruit, river, *exam*, continuity	1	54	25.6
Total		211	100

* Delineates each metaphor separately
** Delineates the total number of metaphors in the category

Of the total number of 91 metaphors produced by the students, the most frequent one was "tree" (f = 17), accounting for 8.1 % of all the metaphors. This was followed by "life" (f = 12, 5.7 %). The third most frequent ones were "universe" and "trip," each of which was used 10 times. Together, these accounted for 9.5 % of all the metaphors. The metaphors of "baby," "book," and "water" were each produced nine times and together they accounted for 12.8 % of the data set. "Treasure" was in the fifth place (f = 8, 3.8 %). "Breath" and "ocean" shared the sixth place (f = 12, 5.7%), "food" and "experience" the seventh place (f = 10, 4.7 %) and "hunger for knowledge," "library," "stairs," "innovation," "iron," "sea," and "war" the eighth place (f = 21, 10%). A number of other metaphors were used twice, thus coming in the ninth place (14.2 %). Examples include "the brain," "bottomless well," "youth," "the sun," "star," and "door." A greater number of other metaphors (f = 54, 25.6 %), on the other hand, were produced only once by the students, coming in the tenth place. Sample metaphors in this category are "pillow," "cannibalism," "vitamin," "cake," "butterfly," "barrier," and "river."

It is also important to note that some of the metaphors (indicated in italics in Table 1) were given negative connotations by the students. These are: "war," "barrier," "black hole," "exam," "paradox," "labor," "electric shock," "cannibalism," "dope," and "artist." There were 11 instances of these metaphors. Together, they accounted for 5% of the metaphors set. When the students' explanations of the metaphors were analyzed, 23 attributes of LL were identified. These and their associated metaphors are given in Table 2 below.

It is seen in Table 2 that there were 18 attributes of LL with a positive connotation. The most frequent one was related to "continuity" of the concept (f = 48, 25.9%). The students used a variety of metaphors denoting this attribute (e.g., "tree," "universe," "stairs," "snowball"). Their explanations often pointed to learning being a continuous endeavor, new learning leading to new understandings, which in turn triggers engagement in new learning experiences. One of the students noted, "The most important quality of [LL] is that it never ends. Just like a tree, it strikes roots. The more it does it, the more strength it gains."

Related to continuity is the second attribute, "limitlessness," which occurred 31 times in student explanations (16.8%). Among the various metaphors denoting this was "universe," "ocean," "bird," and "stars." The students often stated that LL has no end. Some noted that it lasted from the cradle to the grave. They indicated there is no limit to knowledge in the world as there is no end to the universe. For example, one student said, "There is no end to the number of things you can learn. No matter how much you learn, there will always be things you are yet to learn."

"Expansion of horizons" as an attribute came in the third place (f = 25, 13.5%). The metaphors, such as "book," "library," and "school" were used to describe how LL contributes to people's professional and personal development. One of the students expressed this sentiment saying, "As we engage in learning throughout life, we fill in the blank pages of a book. This expands our horizons, and we look at the world through new lenses."

Another attribute found in the data set was "meaning of life," which occurred in 15 explanations (8.1%). The students used "breath," "water," and "the sun" as metaphors pointing to the nature of LL as part of the fabric of life. Without these, they said, life would not be possible. The metaphor of "baby," on the other hand, was used to indicate that LL gives meaning to life just like a newborn baby, so much so that being a parent has a life-changing effect on one's outlook on life.

Table 2

Attributes of LL and Their Associated Metaphors

Attributes of LL*	f	%	Associated Metaphors
Positive Connotations			
continuity	48	25.9	tree, universe, stairs, sea, seed, river, shadow, snowball, butterfly, soul, continuity, day and night, sleep
limitlessness	31	16.8	universe, ocean, sea, the sun, bottomless well, star, bird, ever expanding borders
expansion of horizons	25	13.5	book, experience, library, school, encyclopedia, antivenom
meaning of life	15	8.1	breath, water, the sun, life, baby
motivation	13	7	competition, trip, song, cake, energy, grease, happiness, boomerang, a new page, petrol station, income
enhancement of world knowledge	9	4.9	light, wisdom, hunger for knowledge, door, storehouse, ripe fruit, smart suit
enhancement of occupational skills	7	3.8	innovation, technology, the world of science, iron,
preciousness	4	2.2	wealth, food, treasure, heavenly gift, breath, vitamin
strength of will	5	2.7	determination, money at the end of stormy sea, a plant root searching for water, promotion, ant, will power
comprehensiveness	3	1.6	rainbow, tree
self-fulfillment	3	1.6	maturity, transformation, future, rebirth, youth
permanence of learning	2	1.1	cement, a person young for ever
responsibility for others	2	1.1	baby, trainer
requirement of attention	2	1.1	baby, driving a car
non-stationarity	2	1.1	stream, the brain
action learning	1	0.5	help in the hour of need
learning from mistakes	1	0.5	learning to ride a bike
personal choice	1	0.5	pillow
Negative Connotations			
struggle	5	2.7	war, barrier, black hole, exam, paradox
time consumption	2	1.1	labor,
Pain	1	0.5	electric shock
excessiveness	2	1.1	cannibalism, dope
only for the skilled	1	0.5	artist
Total	185	100	

* More than one attribute was identified in some responses while some attributes were common to more than one metaphor

"Motivation" was another theme attributed to LL (*f* = 13, 7%). The students referenced metaphors such as "competition," "trip," "song," and "cake," as factors encouraging them to engage in learning throughout life. One student said just like a piece of cake, a successful learning experience leaves a good taste in the mouth making the person eat more of it. Similarly, another student noted, "[LL] is a journey with beautiful sceneries, which makes you happy and want to travel further." Likewise, "winning a competition" was noted by students to be a factor motivating the individual to participate in new competitions. For others, the enhanced knowledge and skills, thanks to LL meant an increase in their income, which was a motivating factor.

"Enhancement of world knowledge" (*f* = 9, 4.9%) and "occupational skills" (f = 7; 3.8%) were two other attributes identified in the student responses. In regard to the former, the students used metaphors such as "light," "wisdom," "door," and "ripe fruit." To them, LL was a way for enlightenment, which is gained through accumulated experience. In the words of one of the students, "We become wise thanks to our experiences throughout our lives. A wise person is one who is different from others as well as one who continues learning no matter." Similarly, to another student, "door" meant "the choice for knowledge, which makes the person comparatively wiser and therefore happier." Another student said, "[LL] is a smart suit because when it makes you look smart and intelligent." As for occupational skills, the students often referenced "technology," "science," and "innovation." They explained LL enables them to keep up with technology and brush up on hard skills when necessary.

Having occurred four times (2.2%), "preciousness" was another quality of LL. The students stated LL was "wealth" or "treasure" individuals get to enjoy through acquisition of knowledge. It was also described as "a heavenly gift", whose value cannot be measured. Similarly, it was considered as "breath" without which one cannot survive.

Less frequent though they were, "strength of will" (f = 5, 2.7%), "comprehensiveness" (f = 3, 1.6%) and "self-fulfillment" (f=3, 1.6%) were identified as attributes of LL, too. Pertaining to "strength of will", the students said LL both needs and nurtures determination. It was mentioned that just like "a plant root searching for water", a lifelong learner never gives up learning. And similar to "an ant", a lifelong learner works tirelessly investing in his/her future. As for "comprehensiveness," LL is described as "a rainbow" encompassing different colors. The student who used this metaphor explained, "Everything we learn adds color to our lives." The theme of "self-fulfillment" was expressed through the use of metaphors, including "maturity," "transformation," and "re-birth." Through these metaphors, the students expressed that LL allows individuals to realize their potential and matures them. At times, it transforms them, turning them into a new self, one that is self-actualized.

Among the other themes identified infrequently were "permanence of learning," "responsibility for others," "requirement of attention," and "non-stationarity," each of which appeared twice in the data set (1.1%). There were also attributes that occurred only once (0.5%): "action learning," "learning from mistakes," and "personal

choice." The last of these was expressed through the metaphor of "pillow." The student explained, "You can sleep without a pillow, but it is more comfortable to sleep with one."

Despite the aforementioned positive attributes, there were also attributes with negative connotations. The most frequent one was that of "struggle," which occurred five times (2.7%). The students used the metaphors of "war," "barrier," "black-hole," "exam," and "paradox" to express how they felt about the concept. To these students, LL meant continuous struggle to stay alive in the harsh work environment. The constant engagement in learning, mainly due to the "rat race" nature of the workplace, created stress in them. They also noted there is always a barrier in life that has to be eliminated. To them, LL was an obligation with negative impacts on time, which was expressed through the metaphor "labor". Having to learn throughout life meant less time spent with family members.

Another negative connotation was related to the theme of "pain", which was expressed through the use of "electric shock". This student said, "The things you learn in life can give you pain just like an electric shock". However, the student also said, "The pain you get may not be able to deter you from learning more".

Another student used the metaphor "cannibalism" to express the excessive nature of LL. The student said:

To give you a better position in life, [LL] eats your soul out. You may look good from the outside, but your soul is tarnished. You feel like there is a wolf inside you. That wolf is [LL]. The more your soul is tarnished, the greater the wolf becomes. After a while, the wolf attacks at your psychology. It eats it, too. Once it is consumed, you reach the end of your life. When you look back on your life, you realize all that you did in life was to serve the system that enslaves humans.

The excessive nature of LL was described by another student with the metaphor of "dope". This student said, "Just like dope, [LL] makes us addicted to it; the more you have it, the more you crave for it". On the face of it, this looks like a positive thing; however, upon reflection, it is paradoxical that addiction, no matter what it is to, prevents individuals from functioning effectively. One other student used the metaphor "artist" to explain that LL is only for the *skilled* ones, losing sight that learning is unstoppable, and it is for everyone.

Discussion

This research aimed to identify undergraduate students' metaphoric perceptions of LL. Based on the convenience sampling method, and the second author's expertise area in particular, we focused on civil engineering students at a Turkish university.

The students' metaphoric perceptions of the concept pointed to both positive and negative connotations. They also indicated that the students had only limited

understanding of the concept. Although we identified a variety of attributes in their explanations for the metaphors they used (e.g., "universe," "sea," "ocean," "stars"), the most frequent ones were related to continuity and limitlessness. These are intrinsic to the meaning of the concept; yet, since they are explicit in the word "lifelong," they do not require a great deal of introspection. Consequently, we argue these do not necessarily assist in "enter[ing] the inner world of the perceptions, understanding, and experiences of the participants" (Jensen, 2006, p. 6). There were, however, other attributes pointing to the value the students gave the concept. Their use of metaphors, such as "book," "encyclopedia," and "school" and explanations for these indicate the breadth of knowledge they can gain through engagement in LL. The finding related to LL being the "meaning of life" underscores the weight of the concept in only some of the students' lives. Together, these provide valuable insights into the students' holistic understanding of the concept revealed through their metaphoric perceptions. Added to this is a few other students' reference to LL as a motivator. This was not only motivation for further learning, but also for greater involvement in life. On this account, the metaphors used by the students point to the place of LL in their lives not only for professional development but also personal fulfillment.

It is interesting to note, however, the finding that "enhancement of occupational skills" was less frequent in the data set. Considering the heavy emphasis placed upon job-related skills and knowledge as part of LL competences in engineering, this is a surprising result. A possible reason for this is the participants' current role as students. That is, at college they likely learn the most recent developments in their discipline and are not yet aware of the changes they may have to face. As a result, their only concern might be what they were being taught.

Despite some benefits expressed through the students' use of metaphors and in their explanations (e.g., expansion of horizons, enhancement of world knowledge, enhancement of occupational skills, self-fulfillment), it is also important to note the lack of reference to ways in which LL can be achieved. For instance, self-directedness is a significant concept for LL (Qinhua et al., 2016). The students' metaphoric perceptions revealed inadequate cognition of it. Neither was there any mention of qualities related to informal learning, self-directed learning, evaluation of learning, knowledge literacy or adult learning, which are among the key concepts within the realm of LL (Duman, 2007; Livingstone, 2006; the European Council, 2012). Taken together, these are suggestive that the students were not cognizant of important characteristics of LL.

Finally, and no less importantly, the results showed that some students, albeit small in number, expressed a negative sentiment about LL. To them, learning throughout life was an imposition depriving them of valuable time spent with family. Their metaphoric perceptions also included "war" and "exam," which denote hardships and competition. One could empathize with these students if they have been exposed to the narrow focus of LL on improving work-related skills and performance per se (Cruikshrank, 2002). It is important for educators to be attuned to students' feelings. Left unresolved, such feelings likely deter individuals from engaging in learning necessary for professional *and* personal development. Considering the interpersonal

nature of LL (The European Council, 2006; Deveci, 2019; Lieb-Brilhart, 1978), this has the potential to impact their family members' and friends' learning negatively, too.

Recommendations and Conclusion

The results of this study showed that the undergraduate students that participated in the study had limited perceptions of LL. Based on their limited perceptions of the concept, it was not clear if they indeed possessed the qualities of a lifelong learner. However, their metaphoric perceptions still reflected a somewhat open attitude towards LL, which can be harnessed in significant ways. First and foremost, whether or not accredited by an international board such as ABET, the civil engineering department, together with others, should seek to embed LL skills among the key learning outcomes across curricula. Different course instructors in the department should cooperate to identify key LL skills for their students as future engineers, which they teach through hands-on experience. Considering the multidisciplinary nature of engineering disciplines, these skills should be imparted to students through collaboration and cooperation among various departments in the institution. To this end, a stand-alone course on LL would not suffice (Peat et al., 2005).

It is important that students are informed about the deeper meanings of LL; their awareness ought to be raised in regard to professional as well as personal aspects of learning across their lifespans. Focusing on technical skills per se would be a disservice to them. For them to develop holistically, they should be helped to recognize the ways in which the developments in one's professional life are intertwined with those in their personal lives. Toward this end, faculty can, for example, help students notice the link between technical and artistic creations they may engage in.

The results of this study also showed that the students' responses centered upon the importance of LL without any indication of different ways in which they could engage in LL. The curricula, therefore, should highlight different forms of learning that lend themselves to engagement in LL. It would not be enough, for example, to focus on in-service training, and conference or workshop attendance. Other forms of formal education, informal learning, continuing education, etc. should be part of curricula. Additionally, extra-curricular activities should be designed to encourage students to engage in experiential learning activities geared towards their holistic development.

Faculty should also vary their assessment methods. For instance, OECD (2005) recommends that formative assessment be adopted as a means of meeting the goals of LL. It is explained that this enhances student achievement and "guide[s] students toward development of "learning to learn" skills … by placing emphasis on the process of teaching and learning, and actively involving students in that process, building students' skills for peer- and self-assessment, helping students understand their own learning, and develop appropriate strategies for "learning to learn" (OECD, 2005, p. 2). Students' learning can also be assessed with a view towards not only the product but also the processes. The latter can include different ways in which students attempt to solve given

problems, engage in team activities, and use intrapersonal communication skills, all of which are among the key skills a lifelong learner ought to develop (Deveci, 2019; Taylan & Bafail, 2019).

In the context of the current study, several caveats also need to be made. First, we collected data only from one institution. Therefore, the results of the study cannot be generalized. To understand students' metaphoric perceptions of LL, therefore, students from other contexts could be involved, too. It may also be useful to identify faculty's perceptions of LL. Students often take their teachers as role-models, so research into ways in which faculty engage in LL can provide insights into how students could be helped further. Lastly, the development of students' LL perceptions and skills can be studied longitudinally.

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Üniversite Öğrencilerinin Hayat Boyu Öğrenmeye Yönelik Olumlu ve Olumsuz Algıları: Metaforik Bir Analiz

Öz

Yükseköğretimde, teknik becerilerin yanı sıra hayat boyu öğrenme (HBÖ) becerilerine de öncelik vermelidir. Ancak bütün üniversite öğrencilerinin HBÖ'ye aşina olduğunu varsaymak doğru olur mu? Öyle olsa bile bazı öğrenciler HBÖ'nün bir tür stres kaynağı olduğuna inanıyor olabilir mi? Bunları anlamanın bir yolu, bireylerin kavramlara eklediklerine ilişkin anlamı aktarmak için yaygın olarak kullanılan metaforlardır. Dolayısıyla bu çalışmada 229 üniversite öğrencisinin HBÖ'ye ilişkin metaforik algıları incelenmiştir. Veriler söylem tamamlama formu kullanılarak toplanmıştır. Sonuçlar, seçtikleri metaforlarla yansıtıldığı gibi öğrencilerin HBÖ'ye ilişkin algılarının sınırlı olduğunu göstermiştir. HBÖ'yü tanımlamak üzere en sık kullanılan metaforlar "ağaç", "hayat", "evren" ve "yolculuk" olmuştur. Öğrencilerin belirttiği HBÖ özellikleri arasında en fazla "süreklilik", "sınırsızlık" ve "ufukların genişlemesi" yer almıştır. Ayrıca öğrencilerin kullandıkları metafor ve açıklamalarda HBÖ'ye ilişkin olumsuz algıların da bulunduğu görülmüştür. Öğrencilerin hayat boyu öğrenen bireyler olma potansiyelini artırmak için HBÖ becerilerinin üniversite müfredatının ayrılmaz bir parçası olmasını önermekteyiz.

Anahtar sözcükler: hayat boyu öğrenen, hayat boyu öğrenme, metafor, öğrenci algıları, yükseköğretim