



The Evaluation of Students' Mental Images of Cigarette through Metaphor Analysis

Cem Gerçek
Hacettepe University, TURKEY

Received 24 December 2015 • Revised 29 March 2016 • Accepted 18 August 2016

ABSTRACT

Concepts change into mental images through individuals' experiences. Therefore, mental images can differ from culture to culture. This study aims to analyse students' mental images of cigarette through metaphors. This research uses phenomenology, one of qualitative research designs. The study group was composed of 986 secondary school, high school and university students chosen in purposeful sampling method. The participants were asked to complete the statement "a cigarette is like..... because" in order that their mental images might be revealed. The data were analyzed through content analysis. In consequence, 886 metaphors, 110 of which were different, were obtained. The metaphors were found to be grouped into 3 different categories.

Keywords: Metaphor, phenomenology, student, cigarette, education.

INTRODUCTION

Metaphors are the linguistic instruments connecting two concepts. Due to this property, metaphors connect phenomena to a series of concepts having different meanings, and thus they re-conceptualise those concepts. The differentiated concepts change into mental images in individuals' minds (Abawi, 2013; Punter, 2007; Wormeli, 2009). These mental images shape our daily life and our relations with other people (Balci, 1999).

Metaphor means figure of speech. A figure of speech is defined as "using a word or concept in a meaning other than the one accepted" (TDK, 2015). The word metaphor originally comes from Greek word "metapherein - in which "meta" means "different", and "pherein" means "to carry" (Levine, 2005). A metaphor can also be seen as comparing a concept with another concept or as giving meaning to it (Zheng & Song, 2010). Aristotle for the first time looked at metaphorical expressions as ornamented statements which do not play important roles in language.

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Correspondence: Cem Gerçek, Hacettepe University, Faculty of Education, Department of Mathematics and Science Education, 06800, Beytepe, Ankara, Turkey.

✉ cgercek@hacettepe.edu.tr

State of the literature

- A metaphor is a linguistic instrument connecting two concepts. Thus, metaphors connect a phenomenon into a series of concepts having different meanings, and thus they reconceptualise them and enable us to look at them from different perspectives.
- Individuals' thoughts concerning cigarette are formed through their informal observations and personal experiences in the past.
- Research demonstrates that young people today start smoking before they are 13 years old and that culture is important in doing this. A smoking individual tends to keep doing this for a long time. Thus, materialistic and moral harm given by smoking to the society amounts to billions of dollars.

Contribution of this paper to the literature

- Metaphors employ concrete and short expressions in describing abstract or complex relations. Therefore, it is also important that they be used for educational purposes.
- Having knowledge of the mental images of harmful substances such as cigarettes especially formed in individuals' minds is important in struggle with such substances (primer prevention).
- Research performed with students recently in Turkey demonstrates that substance use and smoking have become widespread even though it changes according to the substance and to regions. Prescribed schools' curriculums are far removed from smoking prevention. Existing curriculums are needed to rebuild towards smoking prevention.

Experience, Metaphor and Mental Image

With their book *Metaphors We Live by*, Linguist George Lakoff and philosopher Mark Johnson developed a theory for the relations between language, thought and experience. Metaphors occupy an important place in this theory. Accordingly, thinking is structured metaphorically in individuals (Gallese & Lakoff, 2005; Johnson, 1992; Lakoff, 1980). The theory sheds light on the process of thinking and on cognitive learning. Neuro linguistic theory, on the other hand, explains concept integration in languages. It makes an attempt at giving detailed neurological description of thoughts expressed by language. Beside its interest in metaphors, this theory also tries to find why individuals have primary metaphors (Lakoff & Johnson, 1980).

Learnt concepts are actualised through interaction with physical and social environment (Polotskaia, Savard & Freiman, 2015). This interaction is called experience, and the theory is called experientialism (Lakoff, 1990). Behaviours are shaped with the repetition of sensomotorical interaction. In consequence, experience changes the neuronal connection forms of our brain. The structure and function of our brain as well as the concepts and images in our brain change along with this (Berliner, 1990). In brief, the concepts and images acquired through interaction with the external world develop our thought system, and form meaningful concepts. These concepts and images in an individual are called concretization (Lakoff, 1990; Gallase & Lakoff, 2005).

A metaphor should indeed be considered as a mental image according to metaphor theory. Lakoff and Johnson distinguish between cognitive and linguistic metaphors. Cognitive metaphors are abstract expressions. For instance, “time is money”. Here time is conceptualised with money. Linguistic metaphors, however, carry out abstract thoughts. For instance, “you should spend time carefully” is the linguistic expression of “time is dime”. Lakoff and Johnson point out that cognitive metaphors are important in understanding natural language and culture. Cognitive metaphors are defined as metaphors composed of two concept fields in which one is understood via the other. Such metaphors reflect the way in which individuals perceive a phenomenon or a concept. Cognitive metaphors are composed of two concept fields: Source and target. The target is understood through the source. Source field of concept is a concrete concept or object whereas target field of concept is an abstract concept. In the metaphor “time is dime”, for example, the source field of concept “dime” is a concrete concept, and the target field of concepts “time” is an abstract concept. Besides, ontological metaphors are the metaphors showing non-physical entities as physical entities or as substances. For example, in the statement “my head is too much packed”, head is considered as a container to put things inside. In orientational metaphors, on the other hand, concepts are in locational orientational relationship with each other. Just like in the metaphor “you are in high spirits”.

Metaphor, Education and Cigarette

Metaphors employ concrete and short expressions in describing abstract or complex relations (Abawi, 2013; Savolainen & Kari, 2004). Therefore, it is also important that they be used for educational purposes (Gropengiesser, 2008). Having knowledge of the mental images of harmful substances such as cigarettes especially formed in individuals’ minds is important in struggle with such substances. Lakoff and Johnson (2005) consider metaphors as images formed in individuals’ minds. Metaphors exhibit individuals’ prior learning – that is to say, their experiences – in the past (see Fig. 1). In short, mental images are formed in consequence of experiences (Gropengiesser, 2007). Metaphors help to explain why phenomena differ from person to person and from culture to culture.

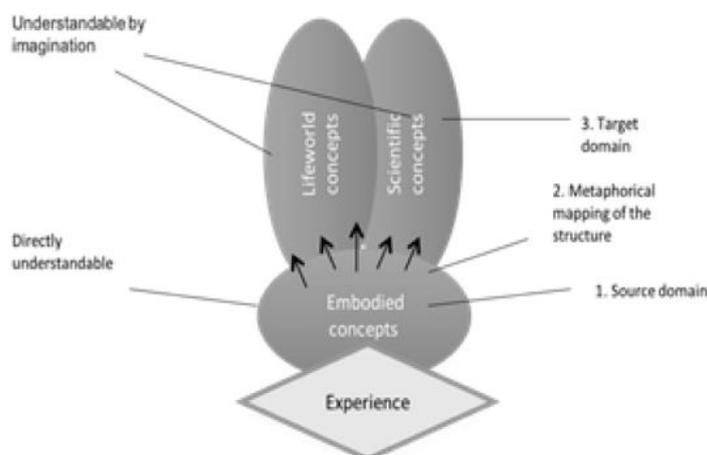


Figure 1. Experience as the basis of understanding (Gropengiesser, 2007)

Individuals' thoughts concerning cigarette are formed through their informal observations and personal experiences in the past (Edis & Çağlar 2006; Erdem, Eke, Ögel & Taner, 2006). Research demonstrates that young people today start smoking before they are 13 years old and that culture is important in doing this (Baumeister, Kraus, Stonner & Metz, 2008; Leppin, Hurrelmann & Petermann, 2000). It means that a young person who starts smoking at an early age has increased the risk of getting lung cancer by 50%. A smoking individual tends to keep doing this for a long time (Beckmann & Mechnich, 2001; Beelmann & Thomas, 2006). Pierce, Choi, Gilpin, Farkas and Merritt (1996) found that half of young boys who start smoking keep smoking for at least 16 years and that young girls who start smoking continue smoking for at least 20 years. Thus, materialistic and moral harm given by smoking to the society amounts to billions of dollars (Hurrelmann, 1998; Leppin at al., 2000).

Metaphors were first developed in research conducted by Lakoff and Johnson (1980). Efforts were made to put forward metaphors as mental images in research performed in Turkey and in the world (Abawi, 2013; Akaygun & Aslan-Tutak, 2016; Frelin & Grannäs, 2015; McLellan, McLachlan, Perkins & Dornan, 2013; Perkan Zeki & Sonyel, 2014; Zannini, Ghitti, Martin, Palese & Saiani, 2015).

Aim of the Study

Research performed with students recently in Turkey demonstrates that substance use and smoking have become widespread even though it changes according to the substance and to regions (Erdem et al., 2006). This study aims to analyse students' mental images of cigarette through metaphors. Literature review has shown that no similar research on determining students' mental images of cigarette is available in the literature.

METHOD

Research Design

This research employs phenomenology, one of the qualitative research designs, in accordance with research purposes.

Research Questions

Since the aim in this research is to exhibit students' mental images of cigarette through metaphors, answers are sought to the following questions:

1. What metaphors do students have in relation to cigarettes?
2. Under what common conceptual categories can these metaphors be brought together?
3. What are the most frequently reported conceptual categories of metaphors according to the level of schools (secondary school, high school and university)?

Study Group

The study group was composed of 986 secondary school (N: 110), high school (N: 437) and university (N: 439) students chosen in purposeful sampling method between September 2014 and April 2015. 619 of the students are female and 367 of them are male.

Data Collection

Literature review was performed in this study so as to determine students' mental images of cigarette through metaphors, and a form was prepared by obtaining expert opinion (Schmitt, 2005). In addition to the demographic properties of the participants (such as age, gender, schools), the participants were also asked to complete the statement "a cigarette is like because.....". After that, having obtained the permissions required, the forms were administered to university students via their e-mails, and to secondary school and high school students in printed form in the educational environment beginning with the date September 2014.

Data Analysis

The data obtained were analysed in five stages. Namely; encoding and compiling, category determining, validity and reliability, and transferring them into the analysis programme (Moser, 2000).

Encoding and Compiling

Metaphors presented by participants were firstly listed. It was found at this stage that 986 students reported 122 different metaphors in total. After that, the metaphors suggested by these students and the reasons they had written for them were evaluated by three experts. Following the experts' analyses, 88 metaphors inappropriate for the study suggested by 12 participants were eliminated.

Category Determining

Literature was reviewed at this stage in order to group the metaphors into categories. Accordingly, it was decided to divide the metaphors into three categories. The categories and their properties are shown in [Table 1](#).

Table 1. Categories and their properties

Categories	Properties
Cigarette as a result emerging	Consequences led by cigarette
Cigarette according to its physical appearance	The shape, form or appearance of cigarette
Cigarette according to the action it causes people to do	Action, work or feeling a cigarette can cause

Validity and Reliability

Because the ethical issues were important in research studies, permissions required were obtained from schools through negotiations. Participants were offered information prior to the research, and thus voluntary participation was assured. The participants were informed of the fact that the results would be used for scientific purposes and that their names would be kept confidential.

The validity and reliability analyses were done for the research. Member checking was done and expert opinion was obtained for internal validity (Miles & Huberman 1994; Yıldırım & Şimşek, 2013). For internal reliability, participants' views were analysed separately by three experts firstly. The categories determined and the metaphors were matched by the experts. For this, the experts were given two forms containing the metaphors and the categories. The results for matching made by the experts were compared and the agreement between them was checked. In the first evaluation, an agreement of 85% was attained. Full agreement was attained in later negotiations. Each stage of the study was explained in details so as to raise external validity. Thus, it was made possible to perform similar research studies in different settings. Special care was taken with the following points in order to increase external reliability: (1) data collection and analysis, (2) determining the participants, (3) describing the social setting and processes in which the study was conducted.

Transferring into the Analysis Programme

All the data obtained were directly transferred into SPSS statistics programme. The results obtained on this programme were calculated in frequencies and percentages.

RESULTS

Metaphors reported by participants are introduced in this part. 886 metaphors in total, 110 of which were different were obtained in the research. Metaphors obtained were classified into three categories and were put to analysis. Thus, 34 different metaphors (31%) in the category of "Cigarette as a result emerging" were reported 532 times in total, 53 different metaphors (48%) in the category of "Cigarette according to its physical appearance" were reported 254 times in total, and 23 different metaphors (21%) in the category of "Cigarette according to the action it causes people to do" were reported 100 times in total.

The Category of Cigarette as a Result Emerging

Participants mostly (24%) reported cigarette as a disgusting poison. Apart from that, such phrases as addiction, death, enjoyment, friend, intoxicating, the person I dislike, disturbing, cure to stress, a need for relaxing, bad smell, meaningless, regret, money trap, and cancer were also the most frequently (65%) reported metaphors (see [Table 2](#)). The proportion of the other metaphors was 11%. The reasons for the metaphors the students reported were as in the following:

“A cigarette is just like a disgusting poison because it kills slyly even though it looks like something pleasing.”

“A cigarette is similar to death because I have lost a lot of people from my family.”

“A cigarette is like a friend because it is a companion to take refuge in to get rid of troubles and pains”.

“A cigarette is enjoyment because it is an enjoyment smoked after happiness and sorrow.”

“A cigarette is like a cure to stress because when I get angry, it makes me relaxed.”

“A cigarette is like cancer because it doesn’t only capture our life but also becomes addiction slowly in our body, and it kills us slowly, just like cancer.”

“A cigarette is like a girlfriend or a boyfriend who never leaves you because it is always beside you”.

Table 2. Students’ metaphors in the category of cigarette as a result emerging

Categories	f (%)	Metaphors Concerning cigarette	f (%)
Cigarette as a result emerging	532(60)	a disgusting poison 128, addiction 50, death 41, enjoyment 39, a friend 38, intoxicating 32, the person I dislike 27, disturbing 20, cure to stress 18, a relaxing need 18, bad smell 17, meaningless 14, regret 12, money trap 12, cancer 10, way to escape 9, activity 6, a darling who never leaves you 6, weakness 6, disease 5, instrument for socialisation 4, showing off 4, torment 3, sweet poison 3, insufficiency in the wallet 2, indicator of personality 1, cool 1, boon 1, life 1, curse 1, burden 1, journey 1, trouble 1	34 (31)

Cigarette according to its Physical Appearance

Participants mostly (22%) reported cigarette as a metaphor for food in this category. 28% of the metaphors reported contained words such as rubbish, drug, an animal, and stick. The proportion of the other metaphors suggested in this category was 50% (see **Table 3**). The reasons for the metaphors the students reported were as in the following:

“A cigarette is like food because it gives harm to human body just as food does.”

“A cigarette is like rubbish because it turns human beings into a rubbish dump.”

“A cigarette is like a drug because it makes happy when it is available and it relaxes one for a moment.”

“A cigarette is like a stove pipe because it contains harmful smoke of soot and coal”.

“A cigarette is like a woman because you cannot understand it gives you harm until you get bored with it.”

“A cigarette is like a telephone because you cannot put it aside or hang it up when have it in your hand.”

“A cigarette is like a bomb because it is not definite when or how you will get harmed.”

Table 3. Students’ metaphors in the category of cigarette according to its physical appearance

Categories	f (%)	Metaphors Concerning cigarette	f (%)
Cigarette according to its physical appearance	254(29)	Food 58, rubbish 27, drug 17, stick 16, an animal 11, pencil 9, stove pipe 8, woman 6, coal 6, microbes 6, money 5, telephone 5, bomb 5, toy 5, bars of a jail 4, enemy 4, glasses 4, make up 4, cigarette 4, school 4, leash 3, tar 3, mathematics 3, tooth paste 2, vacuum cleaner 2, dead body 2, flower 2, eraser 2, motor vehicle (Ferrari, train) 2, fluorescent lamp 2, branch of a tree 1, fire 1, gasoline 1, iceberg 1, a deep well 1, my dental braces 1, full ashtray 1, hose 1, fortune telling 1, ashes 1, ash tray 1, mask 1, bullets 1, tomb 1, nicotine 1, oxygen 1, pimples 1, stove 1, chalk 1, terrace 1, tobacco 1, glue 1, fist1	53(48)

Cigarette according to the Action it Causes People to do

Participants mostly (40%) likened a cigarette to falling in love. The other metaphors suggested by the participants in relation to cigarette were poisoning oneself, clearing one’s head, having a meal, gambling, sharing one’s feelings, choice, and supporting a team by 46%. The proportion of the other metaphors was 14% (see **Table 4**). The samples for reasons given by the students in relation to the metaphors are as in the following:

“A cigarette is like falling in love because it doesn’t meet your expectations but it grieves you”

“A cigarette is like taking a sip of death because death comes closer to you with breath.”

“A cigarette is like having a meal because people eat to live”.

“A cigarette is like a choice because going to a vocational high school necessitates this.”

“A cigarette is like gambling because I waste money as I smoke”.

“Smoking a cigarette is like caressing a baby because you keep caressing it even though you know it does you evil.”

Table 4. Students’ metaphors in the category of cigarette according to the action it causes people to do

Categories	f (%)	Metaphors Concerning cigarette	f (%)
Cigarette according to the action it causes people to do	100 (11)	Falling in love 21, taking a sip of death 19, poisoning oneself 15, clearing one’s head 9, having a meal 8, gambling 5, sharing feelings 4, making a choice 3, supporting a team 2, holding one’s urine for 10 minutes 1, playing basketball 1, caressing a baby 1, playing a computer game 1, satisfying one’s ego 1, folk dancing 1, exhaling dirty breath 1, getting up early 1, tapping the table with little finger 1, doing evil 1, eating a piece of chalk 1, scratching the wall with your nail 1, wearing a coat in summer 1, being out of breath 1	23 (21)

Conceptual Categories and Metaphors in the Categories according to the Level of Schools

It was found that the metaphors suggested by the participants fell into different categories according to the level of schools (see **Table 5**). Accordingly, the metaphors of food, rubbish and stick most frequently suggested by secondary school students were in the category of “cigarette according to its physical appearance”. On the other hand, the metaphors of falling in love, clearing one’s head and having a meal most frequently suggested by high school students were in the category of “cigarette according to the action it causes people to do”. And the metaphors of poison, addiction and death most frequently suggested by university students were in the category of cigarette as a result emerging.

Table 5. The distribution of conceptual categories and of most frequently reported metaphors according to the level of schools

Level of Schools	Categories (f, %)	Metaphors (most frequently reported)
Secondary school	According to its physical appearance (47, 43)	Food, rubbish, stick
High school	According to the action it causes people to do (179, 41)	Falling in love, clearing one’s head, having a meal
University	As a result, emerging (171, 39)	Poison, addiction, death

DISCUSSION AND CONCLUSION

110 different and valid metaphors that aimed to determine students' mental images in relation to cigarette and smoking were determined in this study. Thus, it was found that the metaphors fell into three different categories: (1) cigarette according to the result emerging, (2) cigarette according to its physical appearance, and (3) cigarette according to the action it causes people to do.

In the category of "cigarette as a result emerging", 23 positive and 11 negative metaphors were produced. On examining the negative metaphors, it was found that they have to do with things that disorder one's bodily and psychological health. Nicotine, for instance, causes psychological and behavioural addiction (Gerçek & Doğan, 2012; Beelmann & Thomas, 2006). Physical or bodily addiction manifests itself in the form of desire to smoke in the case of nicotine reduction in the body. In psychological addiction, one smokes to get enjoyment or to reduce stress. In behavioural addiction, however, habits become apparent after a meal, in social settings, in intense emotional situations, and so on (McLellan et al., 2013). Observing the consequences caused by cigarette in passive smokers and in non-smokers, on the other hand, can lead to hatred or interest (Baumeister et al., 2008; Beelmann & Thomas, 2006; Schmitz, Kruse & Kugler, 2003). It is evident that students are knowledgeable about this issue. This is likely to be influential in their developing positive attitudes towards cigarette smoking. On examining the positive metaphors, it became clear that individuals needed to smoke socially. Students reported cigarette as a need against stress.

All of the 55 metaphors in the category of cigarette according to its physical appearance were reported as negative. Here, it was remarkable that students' perceptions were the objects similar to the shape of cigarette (such as sticks, stove pipes, pencils, bars of a prison, flowers, branches of a tree, fluorescent lamp, chalk, bullets). Today it has been scientifically proved that mass media has negative effects on children's and young people's bodily and psychological health in addition to benefits to these people. Adverts and visuals encouraging or evoking cigarette smoking or drinking alcohol are commonly used in the mass media. Cigarette and alcohol manufacturers in many countries spend millions of dollars to encourage the youth through mass media. The heroes in popular films are frequently employed to encourage youth to smoke or to drink alcohol (Bar-on, 2000; Savolainen & Kari, 2004). The metaphors reported by the students might have been shaped by their experiences due to environment.

On examining the reasons for the 17 metaphors reported in the category of cigarette according to the action it causes people to do, six of them were found to be positive. The metaphors of caressing a baby, satisfying one's ego, sharing one's feelings and clearing one's head are clearly related with the needs of humans, who are social entities. Besides, it was also important that a participant reported smoking as a necessity in the high school he/she chose to attend. This view was the proof that cigarette might be established as a school culture (Abawi, 2013; Balcı, 1999; Wormeli, 2009). Apart from that, the view that those who smoke

think that they get grown up and strong putting forward by a participant, also reflects the society's perspective of cigarette.

In consequence, it was found that the participants had positive metaphors such as enjoyment, friend, need which relaxes, clearing one's head, sharing feelings, and intoxicating as well as negative metaphors such as poison, addiction and death. It was remarkable that there were positive views on cigarette smoking, which was scientifically proven to be harmful. Although many individuals are knowledgeable about the harm caused by smoking, they still smoke or are passive smokers. According to the theory of cognitive incompatibility, smoking individuals ignore the truth while they are smoking, and they even ban themselves to mention the truth (Beckmann & Mechnich, 2001; Festinger, 1957). Moreover, most smokers can also underestimate the probable diseases caused by tobacco use.

It was found in this research that the frequency of the metaphors reported by participants changed in parallel to the rise in the level of schools (Edis & Çağlar 2006; Erdem et al., 2006). While a secondary school student reported such concrete metaphors as food, rubbish and stick; a high school student reported such metaphors as clearing one's head (relaxation) and falling in love. The university students included in the research, on the other hand, often preferred to use abstract concepts such as addiction and death. It became clear through metaphors reported at university level that the harm caused by cigarette is more clearly understood at university level than at other school levels.

RECOMMENDATION

The study group of this research was composed of students. Similar studies can be done with different age and occupation groups. It is important to research the reasons for positive metaphors in relation to cigarette such as enjoyment, friend, need which is relaxing, clearing one's head, sharing the feelings, having a meal, caressing a baby, satisfying one's ego, making a choice, and intoxicating. In addition to that, it would also be beneficial to research the sources of stress in school and family settings, which are the living environment of students. Studies on environmental factors capable of influencing children during their experiences in their developmental period are also considered important in this framework.

ACKNOWLEDGEMENT

The Author would like to special thanks to Prof.Dr. Harald Gropengiesser for the useful contribution.

REFERENCES

- Abawi, L. (2013). Metaphor: Powerful imagery bringing learning and teaching to life. *Improving School*, 16(2), 130-147. doi: 10.1177/1365480213492409
- Akaygun, S. & Aslan-Tutak, F. (2016). STEM images revealing STEM conceptions of pre-service chemistry and mathematics teachers. *International Journal of Education in Mathematics, Science and Technology*, 4(1), 56-71. doi:10.18404/ijemst.44833

- Balci, A. (1999). *Metaphorical images of school: School perceptions of students, teachers and parents from four selected schools*. Ph.D. Thesis, Unpublish-ed. Ankara: Middle East of Technical University.
- Bar-on, M.E. (2000). The effects of television on child health: implications and recommendations. *Arch Dis Child*, 83, 289-292. doi: 10.1136/adc.83.4.289.
- Baumeister, S. E., Kraus, L., Stonner, T. K. & Metz, K. (2008). Tobacco use, nicotine dependence and trends, *Sucht*, 54 (Sonderheft 1), 26-35.
- Beckmann, H. & Mechnich, S. (2001). *Kinder vor dem Rauchen schützen*. Frankfurt: Fischer Taschenbuch Verlag GmbH.
- Beelmann, A. & Thomas, B. (2006). Wirksamkeit von Präventionsmassnahmen bei Kindern und Jugendlichen, *Zeitschrift für Klinische Psychologie und Psychotherapie*, 35 (2), 151-162.
- Berliner, D. C. (1990). If the metaphor fits, why not wear it? The teacher as executive. *Theory into Practice*, 29(2), 85-93.
- Edis, E. & Çağlar, T. (2006). New advances in therapy for tobacco dependence, *Arch Lung*, 7(3), 99-103.
- Erdem, G., Eke, C. Y., Ögel, K. & Taner, S. (2006). Peer characteristics and substance use among high school students, *Journal of Dependence*, 7, 111-116.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.
- Frelin, A. & Grannäs, J. (2015). Direct and indirect educational relationships: Developing a typology for the contribution of different categories of school staff in relation to students' educational experiences. *Improving Schools*, 18(1), 56– 68. doi: 10.1177/1365480214562124
- Gallase, V. & Lakoff, G. (2005). The brain's concepts. *Cognitive Neuropsychology*, 22, 455-479.
- Gerçek, C. & Doğan, N. (2012). Effect of the Written and Combined Warnings on the Cigarette Pockets on University Students. *Educational Sciences: Theory & Practice*, 12(4) Autumn, 2581-2584.
- Gropengiesser, H. (2007). *Theorie des erfahrungsbasierten Verstehens* [The theory of experientialism]. In D. Krüger & H. Vogt (Eds.), *Theorien in der Biologiedidaktischen Forschung* (pp. 105–116). Berlin: Springer.
- Gropengiesser, H. (2008). *Qualitative Inhaltsanalyse in der fachdidaktischen Lehr-Lernforschung* [Qualitative content analysis in educational research]. In P. Mayring & M. Glaeser-Zikuda (Eds.), *Die Praxis der Qualitativen Inhaltsanalyse* [Qualitative content analysis in practice] (pp.172–189). Weinheim: Beltz.
- Hurrelmann, K. (1998). Smoking prevention and smoking cessation in children and adolescent, *Sucht*, 44(1), 4-14.
- Johnson, M. (1992). *The body in the mind*. Chicago: University of Chicago Press.
- Lakoff, G. (1990). *Women, fire and dangerous things*. Chicago: University of Chicago Press.
- Lakoff, G. & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Leppin, A., Hurrelmann, K. & Petermann, H. (2000). *Jugendliche und Alltagsdrogen*. Berlin: Luchterland Verlag GmbH.
- Levine, P. M. (2005). Metaphors and images of classrooms. *Kappa Delta Pi Record*, 41(4), 172-175.
- McLellan, L., McLachlan, E., Perkins, L. & Dornan, T. (2013). Music and health. Phenomenological investigation of a medical humanity. *Adv. in Health Sci. Educ.* 18, 67–179. doi: 10.1007/s10459-012-9359-y
- Miles, M. B. & Huberman, A. M. (1994). *An expanded sourcebook: Qualitative data analysis*. California: Sage Publications.
- Moser, K. S. (2000). Metaphor analysis in psychology: Method, theory, and fields of application. *Qualitative Social Research*, 1(2), 25-27.

- Perkan Zeki, C. & Sonyel, B. (2014). Pre-service teachers' perceptions of the student centered learning approach through a metaphoric perspective. *H. U. Journal of Education*, 29(1), 211-225.
- Pierce, J. P., Choi, W. S., Gilpin, E. A., Farkas, A. J. & Merritt, R. K. (1996). Validation of susceptibility as a predictor of which adolescents take up smoking in the United States. *Health Psychology*, 15(5), 355-361.
- Polotskaia, E. Savard, a. & Freiman, V. (2015). Duality of Mathematical Thinking When Making Sense of Simple Word Problems: Theoretical Essay. *Eurasia Journal of Mathematics, Science & Technology Education*. 11(2), 251-261. doi: 10.12973/eurasia.2015.1325a
- Punter, D. (2007). *Metaphor. New Critical Idiom*, New York: Routledge.
- Savolainen, R. & Kari, J. (2004). Conceptions of the internet in everyday life information seeking. *Journal of Information Science*, 30(3), 219-226.
- Schmitt, R. (2005). Systematic metaphor analysis as a method of qualitative research. *The Qualitative Report*, 10(2), 358-394.
- Schmitz, N., Kruse, J. & Kugler, J. (2003). Disabilities, quality of life, and mental disorders associated with smoking and nicotine dependence, *Am J Psychiatry*, 160:9, 1670-1676.
- TDK [Turkish Linguistic Association] (2015). *Türkçe Sözlük [Turkish Dictionary]*. Ankara: Türk Dil Kurumu Yayınları [Turkish Linguistic Association Publishing].
- Yıldırım, A. & Şimşek, H. (2013). *Qualitative Research Methods in the Social Sciences, 9th Edition*, Ankara: Seçkin Pupliching.
- Wormeli, R. (2009). *Metaphors and Analogies*. Portland: Stenhouse Publishers
- Zannini, L., Ghitti, M.G., Martin, S., Palese, A. & Saiani, L. (2015). Narratives, memorable cases and metaphors of night nursing: findings from an interpretative phenomenological study. *Nursing Inquiry*, 22, 261-272.
- Zheng, H. & Song, W. (2010). Metaphor analysis in the educational discourse: A critical view. *US-China Foreign Language*, 8(9), 42-49.

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