A Proposal for the Development of Communication Skills in Aviation Training

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Abstract

In this article, an overview is given on the professional communication skills in education management in the globally developing aviation sector. Improving the communication skills is important in order to upgrade secured communication to the highest level in aviation sector in accordance with mandatory rules as well as for decreasing the accidents. The awareness of excellent communication is a type of quality for employees, leaders, the organization itself and global achievements. This article covers only some of the many aspects in communication such as communication tools, barriers, necessities, methods of problem solving, development of relations among people and comprehension of the emotional intelligence. Related items are explained theoretically then applied in practice such as the coaching system, which is a tool of thinking with questions to understand the people and can be used as a method to improve the convenient communication. In this context, it is recommended that SWOT analysis be conducted to all aviation employees and managers to determine the need for personalized training and to include coaching sessions in annual staff training plans to be arranged for each employee in parallel with these needs. Findings from field research of 119 aviation employees in different kind of aviation associations were analyzed by SPSS (Version 23.0), and conclusions are presented. The conclusion of the statistic analysis of the results was found as mental communication skills increase in employees, emotional and behavioral skills also increase, and as emotional communication skills increase, behavioral skills also increase by using statistical tests and analyzes such as Confirmatory Factor Analysis, Cronbach's Alpha statistic Kolmogorov-Smirnov test, t-statistics, the Mann-Whitney U Test, One-way ANOVA. The hypotheses of this study have been tested by the Structural Equation Model.

Keywords: Aviation, training, communication, coaching

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The Communication, Main Principals and Theories

The communication in Latin language is 'commūnicāre' and means 'to share'. It is an activity of information exchange between two or more participants in order to convey or receive the intended meanings through a shared system of signs and semiotic rules (Harper, 2000). The model for communication can be defines through the following seven steps: forming of communicative intent, message composition, message encoding, transmission of signal, reception of signal, message decoding and finally interpretation of the message by the recipient. But based on the work of Karmin, in this model a critical step is missing, and the tis the feedback. Without feedback, we don't know if the receiver received or understood our message (Karmin, 2016).

A person's communication skills are an important factor that affects the communication process. If the sender's communication skills are good, it ensured that the message will be communicated better than in the case where were not up to par. Similarly for the receiver, if he cannot understand the message, then the communication will not be effective. Communication skills comprise of skills such as speaking, presenting, reading, writing, listening, etc. In order to adequately utilize these skills, one must have the knowledge of communication models. As in the following section of this paper, some of the main theories for communication models will be presented.

Aristotle's Model of Communication

A linear model of communication for oral communication known as Aristotle's Model of Communication developed by Aristotle (384-322 B.C) while exploring the human nature scientifically (Ergin, 2008). Considered to be the first model of communication, developed in ancient times, it is still the most widely accepted among all communication models. The model itself is mainly focused on the speaker and speech as a mode of communication. It covers 5 primary elements: Speaker, Speech, Occasion, Audience and Effect (Ergin and Birol, 2000). This model was mostly used to develop public speaking skills and create propaganda for the politicians an also for the leaders now to create active communication (Günal, 2016).

Lasswell's Communication Model

This model was developed by communication theorist Harold D. Lasswell (1902-1978) in 1948. It is regarded as one the most influential communication models (Braddocak, 1958). The model itself has 5 components posed as questions*: Who?, Says what?, In which channel?, To whom?, With what effect?* and they are used as an analysis tool for evaluating the communication process (Lasswell, 1948). These questions are to be asked to get the answers and keep communication going.

Berlo and Modified Information Communication Model

David Berlo expanded on Shannon and Weaver's (1949) linear model of communication and created the SMCR Model of Communication. Berlo's Model has mainly, four components to describe the communication process: sender, message, channel and receiver (Whaley, 1989).

Transactional Model of Communication

This model was developed by Dean C. Barnlund and represents a multi-layered feedback system. The Model is based on the exchange of messages between sender and receiver where each take turns to send or receive messages (Barnlund, 1970). In this model, both 'sender' and 'receiver' are known as 'communicators' and their role reverses each time in the communication process as both processes occur at the same time. The model is mostly used for interpersonal communication and sometimes is also referred to as circular model of communication

Helical Model of Communication

This model, inspired by a helix was developed by Frank Dance in 1967 (McQuail, 1993). A helix is a three-dimensional spring like curve in the shape of a cylinder or a cone. This model is revolutionary because it introduces the concept of time in communication. What it means is that for this model, the continuousness of the communication process and relational interactions are very important. In this model,

communication is taken as a dynamic process and it progresses with age as our experience and vocabulary increases. At first, the helical spring is small at the bottom and grows bigger as the communication progresses. The same phenomenon can be seen with communication among humans, where the participants nothing about each other at first and the knowledge grows steadily as the participants get to know each other better. In this model, time as well is included from the point of view that it should consider all the activities of the participants, from the past and present. Such time-based element allows for the communicative relationship to reach new progressive levels as the participants share more information (McQuail, 1993).

Westley and MacLean's Communication Model

This model was developed by Bruce Westley (1915-1990) and Malcolm S. MacLean Jr. (1913-2001) in 1957. The basis of this model lay in the view that communication does not begin when one person starts speaking, but it does when a person responds to something from his/her surroundings (Westley and MacLean, 1957). This model can be applied in two contexts: interpersonal and mass communication, where the point of difference is the level and mode of obtaining feedback. The feedback is direct and quick in interpersonal communication while in cases of mass communication it is indirect and slow. Another specific of this model is as well the differentiation of messagees as purposive and non-purposive

Wilbur Schramm's Basic Communication Model

The basis of this model is that information flows through communication channels or media. What is common to both is that they are a conduit through which a stream of something (products, information) flows (Schramm, 1973). Schramm (1973) bases the model on the perception that study of communication is fundamentally a study of relationships and to understand human communication one must understand how people relate to one another. Taking for granted that feedback is one of the integral parts of any communication model by which the receiver's response is made known to the sender, Schramm included it in the model by defining feedback as a 'reversal of the flow, an

opportunity for communicators to react quickly to signs resulting from the signs they have put out.'(Schramm, 1973, p. 51).

Communication Tools

'Communication tools' is a generic name for the tools that enable flow of information. Emotions are the most important tool. İnformation technologies, eyes, ears, telecommunications, words, organizations can be said to be other tools. We can give an example of communication tools by explaining the 'Diffusion Theory'. Biggest contributor on the subject is Everet M. Rogers who in his book 'Diffusion of Innovations', first published in 1960, and now in its fourth edition (Rogers, 1995) presents a unified theory of diffusion. Diffusion Theory emphasizes why channels of interpersonal communication are the most effective.

Difficulties and Barriers

Some of the main difficulties and barriers to communication can be summarized as:

- Design and deliver message so that it gets the attention of intended audience.
- Relate to common experiences between the source and destination.
- Offer a way to meet personality needs appropriate to the group situation the receiver is in at the time you want that receiver to respond.

For example, 'Walter Lippmann's Barriers' to effective communication include: Artificial censorship, gatekeepers in the media, shrinking news holes, limitation of social contact, meager time for paying attention (Lippman, 2004). The Seven Cs of Communication, as defined by William Thurman help overcome barriers. These '7Cs' are clarity, credibility, content, context, continuity, capability and channels (Thurman, 1988).

Necessities

Efficient communication necessitate individual awareness, demand for learning, asking for feedbacks for evaluation, sample using, adoption of the topic. The main necessity of professional communication is to use some true tactics. The elements of true tactics, which make up efficient communication, were opinion, belief, attitude, and value. In this context, 'opinion' is a view formed in the mind about a particular matter. 'Belief' defines a habit in which trust or confidence is placed in some person or thing. The element 'Attitude' describes a mental position with regard to fact or state; a well as a feeling or emotion toward a fact or state. Finally, 'Value' is a quality of something that can be intrinsic (by design) or associated (by context; to be desirable or to be something esteemed).

Methods of Problem Solving

We can explain the main methods of problem solving with Agenda-Setting Theory by McCombs and Show. This theory sets that the media not only tell people what to think about in broad terms, but additionally how to think about specific items, and then what to think. In other words, media shape top-of-mind presence regarding issues (McCombs et al, 1997). The principles of this theory can be used for problem solving based on communication breakdowns.

Development of Relations

What happens when individual opinions merge into public opinion? In 'Collective Dynamics' Sociologists Lang and Lang (Lang and Lang, 1961) provide a classic, early model comes. When people have different views about issues, it leads to public debate, which in turn leads individuals to make up their minds. When people make up their minds, a new public opinion develops that can lead to social action (an election, taking a product off the market, etc.). The social action creates a new social value that becomes part of mass sentiment. Human beings do not like change. That is why development of relations is difficult. Because, we are creatures of habit. Changing an individual's habit takes time. The only thing that does not change is 'the change' itself. Grunig and Repper

identified four types of publics based on the way they behave toward messages and issues; All-issue publics, Apathetic publics, Single-issue publics, Hot-issue publics (Grunig and Repper, 1992).

Problem of the Study

The problem analyzed in this article and in the field study was focused on the communication skills of employees working in aviation sector. With the field study it has been attempted to find answers to the following questions: Which training types are included in the aviation institution and organization programs? What is the rule of development communication skill trainings among the others? Which kinds of employee work in the aviation sector? What is the content of the communication trainings related to employee roster? What is the most necessary communication training for the aviation teachers, employees and managers? What is the meaning and difficulties of professional communication for employees in the sector? What are the communication tools? What are the communication barriers in the aviation institutions? How can the communication skills be improved? Is there any standard communication system that can be used by employees in the sector? What is the coaching system? Can the coaching system be suggested to ensure the excellent communication in the company?

Method

For thorough analysis of the problem, a quantitative research method is used. To collect data a 45-question Communication Skills Scale applied to randomly chosen 119 employees in different aviation sections. Collected data have been analyzed with the help of SPSS version 23.0. The scale consists of two parts which of first covers the demographic questions and second a 45-question scale questions developed by Ersanlı and Balcı (1998). The second part contains three sub-dimensions, Mental, Behavioral and Emotional. Rating for the questions varies from Strongly Agree (5), Somewhat Agree (4), Neutral (3), Somewhat Disagree (2), and Strongly Disagree (1). As the rating approached to 5 it means the attendee uses/affirms the communication skill. On the other hand, approaching rating to 1 shows that the communication skill is not used/affirmed. Since the scale is confirmed in terms of validity and reliability, Confirmatory Factor

Analysis (CFA) applied to the scale instead of explanatory factor analysis. With CFA it has been checked if the collected data are in accordance with the ones that used in previous researches. In this manner, whether data are in accordance with previous factor structure and variables confirms the factor structure have been tested. In this study, first level CFA applied. After giving the final form to the scale with CFA, validity and reliability analysis were conducted.

Population and Sample

The population of this study is aviation associations, institutions, and academies in Turkey. And sample is 119 attendees randomly chosen among employees working in the aviation sector in Turkish Air Force. Of this population, 73.1% were male and 26.9% were female, 62.2% married, 37,8% single. Of the attendees, 94.9% were university graduate among which 21% had a master degree and 5% had Ph.D. Experience wise in service, 30.3% of them had 1-5 years experience, 10.9% 6-10 years, 12.6% 11-15 years, 12.6% 16-20 years while 33.6% had more than 21 years experience. With 78.3%, most of them stated that they know English, and 16% of them another language in addition to English. While 21.8% of them working in Flight Section, 16% working in Management, 22.7% in ground services, 10.1% in training section, and 29.4% in other sections. As for the service years in current section, it was seen that 54.6% of them in their 1-5 years, 20.2% in 6-10 years, 7.6% in 11-15 years and 17.6% in 16-20 years. 42% of them said the current section is their first section, 14.3% said second, 16.8% said third, 14.3% said forth and 12.6% said it's their fifth section. Also, 68.6% of the attendees stated that they received communication training while 31.4% said they didn't.

Findings

In the study, it was investigated by the scale that finalized by the confirmatory factor analysis that whether the communication skills of the employees in aviation sector differ according to various characteristics. Whether the mean scores distribute normally was checked by the Kolmogorov-Smirnov test and proved that distribution of the mental variances are normally distributed, while the others are not normally distributed. When

investigating the differences of the mean scores according to the various characteristics of the employees, it was preferred parametric tests for mental variables, and non-parametric test for the others.

A t-statistic in LISREL was used to test if the means obtained with Confirmatory Factor Analysis are meaningful or not. If the t statistic's absolute value is greater than 1.96, the correlation of the path is assumed significant. Significance and magnitude of the correlation value indicate the relationship between the observed variable and the latent variable. The square of the correlation value shows the latent variable's variance explained in the observed variable. The smallest t-statistic for those in Figure-1 was found 2.63. So all the ways were concluded to be meaningful.

It was examined whether the observed variables in the dimension of mental communication skills confirmed the mental latent variable, and found out that ZIH10, ZIH11 and ZIH12 were not able to confirm the dimension. The dimension chart is given in Figure-1. The Dimension has been verified after these variables have been removed from the scale. The Compliance values for this dimension were found as; $\chi2=84,33$, Sd=53, $\chi2$/SD=1,59, RMSEA=0,071, NFI=1,0, NNFI=1,0, CFI=1,0, IFI=1,0, GFI=0,96; RMR=0,060, SRMR=0,07. The model obtained falls into acceptable limits according to the compliance values and figure-1.

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                                    0.28
                                    0.34
                                    0.49
                                    0.52
                                    0.60
                                    0.65    ZIHINSEL ─1.00
                                    0.27
                                    0.46
                                    0.38
                                    0.20
                                    0.61
                                    0.62
ZIH1   0.92
ZIH2   0.89
ZIH3   0.76
ZIH4   0.73
ZIH5   0.64
ZIH6   0.57
ZIH7   0.92
ZIH8   0.79
ZIH9   0.85
ZIH13  0.96
ZIH14  0.63
ZIH15  0.61
Chi-Square=84.33, df=53, P-value=0.00398, RMSEA=0.071
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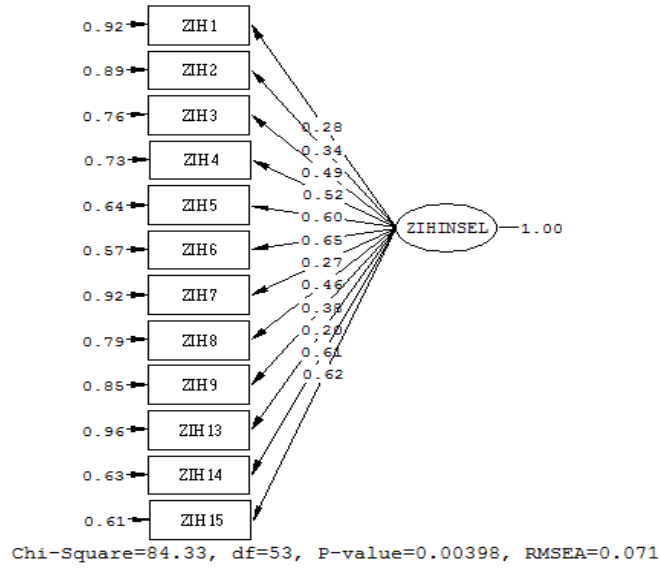
Figure 1. Mental Communication Skills Confirmatory Factor Analysis

It was examined whether the observed variables in the dimension of behavioral communication skills confirmed the behavioral latent variable, and found out that DAV4, DAV8 and DAV14 were not able to confirm the dimension. The Dimension has been verified after these variables have been removed from the scale. The dimension chart is given in Figure-2. The Compliance values for this dimension were found as; $\chi2$=70,37, Sd=53, $\chi2$/SD=1,33, RMSEA=0,053, NFI=0,87, NNFI=0,94, CFI=0,95, IFI=0,96, GFI=0,91; RMR=0,052, SRMR=0,066. The model obtained falls into acceptable limits according to the compliance values and figure-2. In the behavioral dimension, modifications were made between DAV5 and DAV6 variables. The smallest t-statistic for those in Figure-2 was found 2.21. So all the means were concluded to be meaningful.
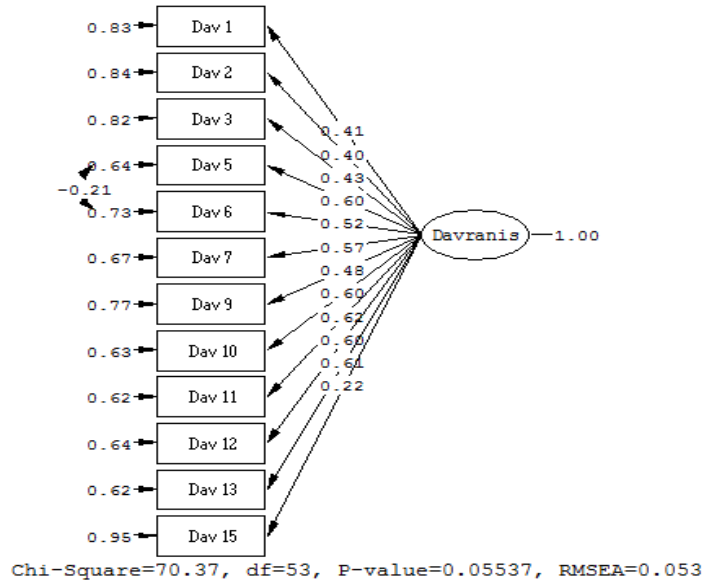
Figure 2. Behavioral Communication Skills Confirmatory Factor Analysis

It was examined whether the observed variables in the dimension of emotional communication skills confirmed the emotional latent variable, and found out that DUY1, DUY2, DUY3, DUY5, DUY7, and DUY8 were not able to confirm the dimension. The Dimension has been verified after these variables have been removed from the scale. The dimension chart is given in Figure-3. The Compliance values for this dimension were found as; $\chi 2=32,05$, Sd=19, $\chi 2/SD=1,68$, RMSEA=0,076, NFI=0,86, NNFI=0,91, CFI=0,95, IFI=0,95, GFI=0,94; RMR=0,059, SRMR=0,069. The model obtained falls into acceptable limits according to the compliance values and figure-3. In the emotional dimension, modifications were made between DUY13 and DUY14 variables. The smallest t-statistic for those in Figure-3 was found 2.44. So all the ways were concluded to be meaningful.
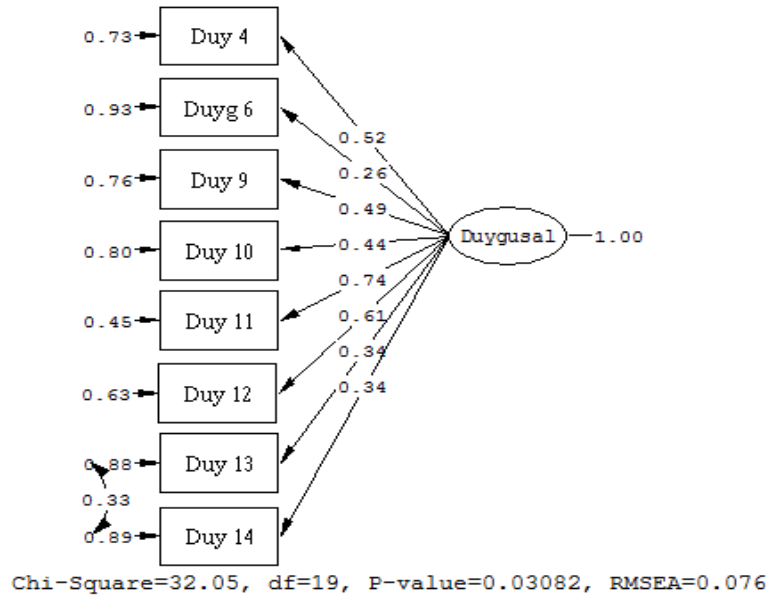
Figure 3. Emotional Communication Skills Confirmatory Factor Analysis

The reliability of the scales obtained as a result of CFA was investigated with Cronbach's Alpha statistic. First, the reliability of the Mental Communication Skills dimension was examined and the Cronbach's Alpha statistic, which shows the reliability of the scale, was calculated as 0,715. Thus, this dimension was concluded to be reliable. The general average of the mental communication skills scale was calculated 4,121 ± 0,785. The obtained highest average of the items was 4.61 ± 0.652 in ZIH1 while the lowest average was 3.02 ± 1.14 in ZIH13.

The reliability of the Behavioral Communication Skills dimension was examined and the Cronbach's Alpha statistic, which shows the reliability of the scale, was calculated as 0,786, concluding this dimension to be reliable. The general average of the behavioral communication skills scale was calculated 4,216 ± 0,847. The obtained highest average of the items was 4.61 ± 0.726 in DAV1 while the lowest average was 3.597 ± 1.209 in DAV15.

The reliability of the Emotional Communication Skills dimension was examined and the Cronbach's Alpha statistic, which shows the reliability of the scale, was calculated

as 0,631, concluding this dimension, too, to be reliable. The general average of the emotional communication skills scale was calculated $4,105 \pm 0,840$. The obtained highest average of the items was 4.63 ± 0.699 in DUY9 while the lowest average was 3.731 ± 1.1622 in DUY4.

The relationship between latent variables was investigated after finalization of the scales as a result of CFA and Reliability analysis. The aim here is to determine the relationships among the communication skills of employees in the aviation sector. Therefore, it has also been tried to look at the relationship as a-two model. The purpose here is to determine the relationships when employees show in case they don't have a third communication skill. Hypotheses to be tested in this research for aviation employees;

H1 As mental communication skills increase in employees, emotional skills also increase.

H2: As mental communication skills increase in employees, behavioral skills also increase.

H3: As emotional communication skills increase in employees, behavioral skills also increase.

The hypotheses of this study have been analyzed by the structural equation model. Structural equation model (SEM) is a comprehensive statistical technique that is used to test causal relationships (correlation) between observed and unobserved (latent) variables. SEM assumes that there exists a causal structure between the set of latent variables and that latent variables can be measured through the observed variables (Yılmaz 2004). SEM is a method that explicitly takes account of the measuring errors of observed variables in a given model, and allows determining the direct and indirect effects between variables (Yılmaz vd., 2009).

The relationship between mental and emotional communication skill of employees in aviation sector was researched with structural equality and a meaningful relationship was determined (Z=2,862.p=0,004). According to the identified relationship, a unit increase in employees' mental communication skills shows an increase of 0.89 units

in emotional communication skill. H1 was supported because employees' emotional communication skills also increased while mental communication skills increased. The Compliance values for this dimension were found as; $\chi2$=309,384, Sd=151, $\chi2$/SD=2,049, RMSEA=0,094, NFI=0,960, CFI=0,975, IFI=0,975, GFI=0,931; RMR=0,077. The smallest Z value was calculated as 2,244 between the variables observed and the latent variables in the model, making all means statistically significant. Based on the obtained compliance values, the model is acceptable. The results obtained are given in Figure-4.
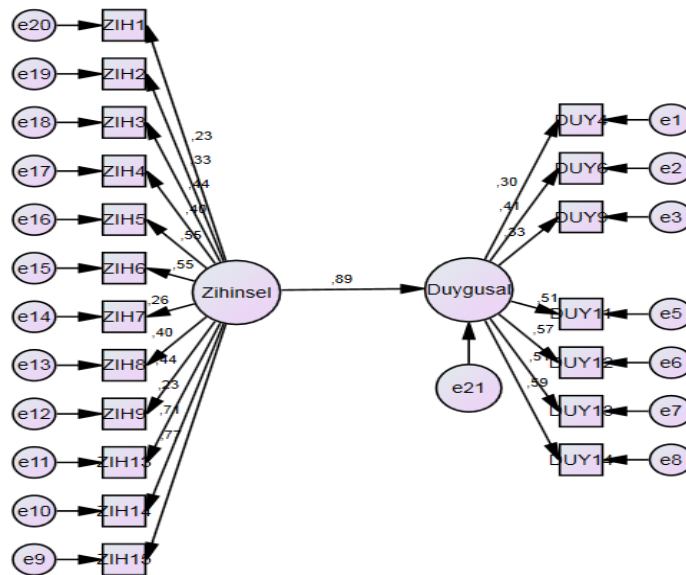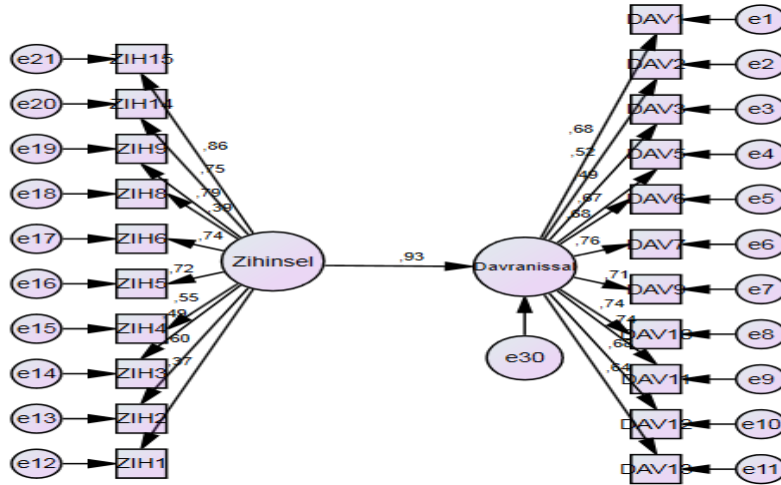

Figure 4. Relationship between mental and emotional communication skill

The relationship between mental and behavioral communication skill of employees in aviation sector was researched with structural equality and a meaningful relationship was determined (Z=2,919.p=0,004). According to the identified relationship, a unit increase in employees' mental communication skills shows an increase of 0.93 units in behavioral communication skill. H2 was supported because employees' behavioral communication skills also increased while mental communication skills increased. The Compliance values for this dimension were found as; $\chi2$=312,018, Sd=188, $\chi2$/SD=1,66, RMSEA=0,075, NFI=0,926, CFI=0,953, IFI=0,954, GFI=0,959; RMR=0,075. The smallest Z value was calculated as 2,687 between the variables observed and the latent

variables in the model, making all means statistically significant. Based on the obtained compliance values, the model is acceptable. The results obtained are given in Figure-5.

Figure 5. Relationship between mental and behavioral communication skill

The relationship between emotional and behavioral communication skill of employees in aviation sector was researched with structural equality and a meaningful relationship was determined (Z=2,583.p=0,010). According to the identified relationship, a unit increase in employees' emotional communication skills shows an increase of 0.87 units in behavioral communication skill. H3 was supported because employees' behavioral communication skills also increased while emotional communication skills increased. The Compliance values for this dimension were found as; $\chi2$=318,284, Sd=134, $\chi2$/SD=2,375, RMSEA=0,076, NFI=0,964, CFI=0,976, IFI=0,976, GFI=0,940; RMR=0,019. The smallest Z value was calculated as 2,447 between the variables observed and the latent variables in the model, making all means (ways???) statistically significant. Based on the obtained compliance values, the model is acceptable. The obtained results are given in Figure-6.
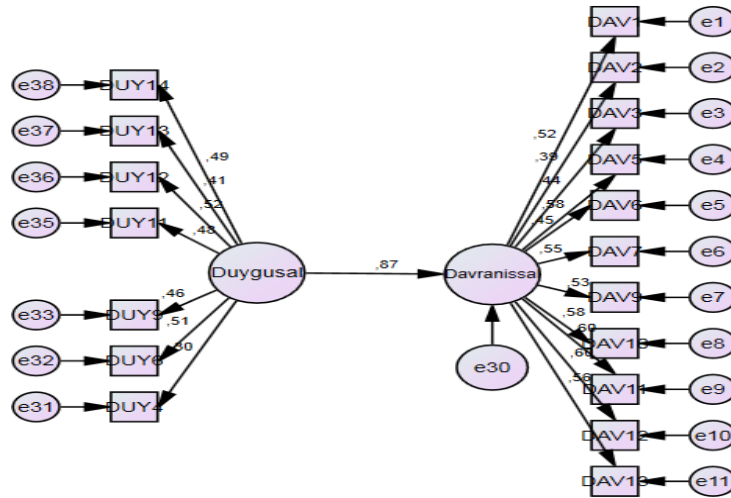
Figure 6. Relationship between emotional and behavioral communication skill

When evaluating the mental communication skills according to employees' genders; whether there exist any difference between the scores they gave to mental communication skills were investigated using the Independent Double Sample t Test and no statistically significant difference was found (t=-1,612 p=0,11). The Mann-Whitney U Test was used to determine whether there was a difference between the scores given to emotional communication skills, and found no statistically significant difference (Z=-0,425 p=0,671). The difference between the scores given to the behavioral communication skills was investigated with the Mann-Whitney U Test and a statistically significant difference was found (Z=-2,861 p=0,004). According to this determined difference, it was found that female employees had higher behavioral communication skills than male employees.

One-way ANOVA was used to determine whether there was a difference in the scores given to the mental communication skills in terms of educational status, and no statistically significant difference was found (F=0,781 p=0,540). Kruskal Wallis analysis was used to investigate whether or not there was a difference between the scores given

by the employees to their behavioral communication skills in terms of educational status, and found no statistically significant difference ($\chi 2$=2,749 p=0,601).

To investigate whether there was a difference between the scores given to the mental communication skills by the employees in terms of working sector, the one-way ANOVA was used and no statistically significant difference was found (F=0,515 p=0,599). The Kruskal Wallis test was used to determine whether there was a difference between the scores given to the emotional and behavioral communication skills by the employees in terms of working sector, and no statistically significant difference was found (Emotional: $\chi 2$=5,555 p=0,235), (Behavioral: $\chi 2$=10,608 p=0,031). The Mann-Whitney U test was used to determine between which groups these differences were. According to the Mann-Whitney U test; a meaningful difference was determined between behavioral communication skills of the employees in flight departments and that of in other departments. According to this determined difference, the occupational communication skills of the employees working in the flight department were found to be higher than that of working in the other departments (Z=-2,128 p=0,033). A meaningful difference was determined between the behavioral communication skills of the employees in the management department and that of in the other departments. According to the determined difference, the behavioral communication skills of the employees in the management department were found higher than that of, working in the other departments (Z = -3,141p = 0,002).

One-way ANOVA was used to determine whether there was a significant difference between the scores given by the employees to their mental communication skills in terms of the working years, and found no statistically significant difference (F=1,252 p=0,293). The Kruskal Wallis test was used to investigate whether there was a difference between employees' scores to the emotional and the behavioral communication skills in terms of working years, and no statistically significant difference was found. (Emotional: $\chi 2$=1,752 p=0,781), (Behavioral: $\chi 2$=6,056 p=0,195).

To investigate if there was a difference between employees' scores to mental communication skills in terms of working years in current workplace, One-way ANOVA was used, and no statistically significant difference was found. (F = 0,702 p = 0,553). Kruskal Wallis test was used to investigate if there was a difference between employees'

scores to emotional and behavioral communication skills in terms of working years in current workplace, and no statistically significant difference was found (Emotional: χ2=2,184 p=0,535), (Behavioral: χ2=2,072 p=0,558).

Whether or not there was a difference between the scores given to the mental communication skills in terms of whether or not the employees had received communication training was investigated by the Independent Dual Sample t test, and found no statistically significant difference (t=0,348 p=0,728). Mann-Whitney U test was used to determine if there was any difference between the scores given to emotional and behavioral communication skills in terms of whether or not the employees had received communication training, and no statistically significant difference was found (Emotional: Z=-0,333 p=0,739). (Behavioral: Z=-1,107 p=0,268).

In this study, in which communication skills of employees working in aviation sector are tried to be determined, relations between communication skills are examined by regression model. In the regression model, behavioral communication skills were put in the model as dependent variables while mental and emotional communication skill variables included in the model as explanatory variables. R-value was set to 0.755 for the regression model's adaptation and explanatory, and R2 is calculated as 0, 563. The regression model was tested with F statistic and found significant ($F = 77,082$ $p = 0,0001$). In the regression model, the presence of multiple correlations between two explanatory variables was investigated and the VIF value was calculated as 1,451. Therefore, no multiple correlation was found between independent variables. The residual values obtained from the regression model were also checked for dependency (autocorrelation) and the Durbin-Watson statistic was found as 1,543. Therefore, the fact that the statistic is bigger than 1.5 has made it accepted as not having autocorrelation.

Table 1.

Regression Equation of Employee's Communication Skills

	Coefficients		t	P	VIF
	B	Std. D.			
β_0	,365	,314	1,163	,247	
$\beta_{1\ (Mental)}$	,691	,085	8,174	,000	1,451
$\beta_{1\ (Emotional)}$	,244	,076	3,200	,002	1,451

According to Regression model given in Table 1; a unit increase in employees' mental communication skills provides an increase of 0.691 units in behavioral communication skills, and a unit increase in their emotional communication skills provides an increase of 0,244 units in their behavioral communication skills.

Result and Recommendations

Effective communication skills are the most important one that must be learned for dealing with every situation in one's life. The greater chance of success in jobs, socially, among friends and family, children, spouse, boss or colleagues etc., all depends upon how effectively can you communicate. These findings show that our three set hypotheses got proven.

Especially in the aviation sector, excellent communication capability is very important for the leaders so that they can manage conflicts more effectively because institutions and organizations providing aviation training are authorized by Directorate General of Civil Aviation (DCGA) and there are lots of rules that must be followed. The Directorate General of Civil Aviation determines all of the training rules in the sector. That is why improvement of the communication skills among leaders, employees and the responsible persons is a necessary tool in the management. In this frame, the coaching system can be used to improve the communication skills among them. The action plan of coaching training should be put in the training budget and the schedule at the beginning of the year. It is possible to decrease communication breakdowns in the aviation sector and ensure security and flight safety in Turkey with coaching trainings that specially determined for aviation employees. So, there will be most perfect, excellent, time saving and qualified communication system for all of them. It will also be possible to improve emotional intelligent of technical staff and pilots. Thus, a huge decrease can be ensured in accidents in the sector.

In line with the Lasswel General Communication Model, it is recommended that coaching sessions be included in the aviation-training program in order to provide employees with the ability to communicate with 'coaching principles'. Thus, the competence of the aviation employees who will have the ability to communicate by asking questions will be increased and the human factors mistakes will be reset. Taking

into consideration of the assessment results on the mental, emotional, and behavioral dimensions, to build an empathic, accident-free and perfect communication system, It is necessary to establish a communication by asking questions in order for effective use of the essential tools, the elimination of obstacles, observance of the requirements, the activation of problem-solving techniques, and the introduction of a more active use of emotional intelligence.

To give an example, taking the subject of our study into consideration, by the implementation of coaching principles, integration between behavioral skills identified as dependent variable, and mental and emotional skills identified as explanatory variables should be ensured. For example, based on the proof that the behavioral communication skills increase by 0.691 units when the mental communication skills increase by one unit, and the behavioral communication skills by 0.244 units when the emotional communication skills increase by one unit, the structure of this system should be improved in the following format:

The difference between the flight and management team, which is determined to be the difference between the behavioral communication skills in terms of their working departments, must be equalized to that of the others. In order to eliminate the difference between women and men's behavioral communication skills, trainings should be designed to equalize the levels formed by gender differences. It is necessary to design trainings that will create the concept of professionalism in order to eliminate the determination "as emotional communication skills increase, the behavioral communication skills decrease". It's a quite a clear and understandable method to use the coaching system, which includes the art of speaking as a method to increase the communication professionalism in the aviation sector, by asking the questions of 'Who? To whom? Which channel? What does it say with what effect?' as mentioned in the Lasswell approach (Günal, 2017). For this purpose, it is necessary to design new trainings on the topic of developing communication with coaching and to add these trainings to the list of compulsory trainings to be taken by the employees and the leaders at work in the aviation sector. In this context, it is recommended that SWOT analysis be conducted to all aviation employees and managers to determine the need for personalized training and to include coaching sessions in annual staff training plans to be arranged for each

employee in parallel with these needs. When the findings are evaluated, it is recommended to arrange the coaching session at least once a month for each staff according to the analysis results of training needs of employees.

Suggested training programs should be structured within the coaching plan to achieve the following capabilities: Good listening capability, using less words, showing the best interest without judgmentality, care of non-verbal signs, being good observer, managing the stress and speaking clearly. So, interactive model of education can be issued with professional communication capability including indirect and slow feedback that is a whole new process of communication. When the research is evaluated within the context of the transitional communication model, in order to professionalize communication which is repeated with the use of aviation language in accordance with aviation rules, new coaching communication trainings which will abolish the noise function and enable them to have a strong and trouble-free between employees and managers, especially the pilots working in operation section should be created. Thus, the effectiveness in the aviation language and jargon will strengthen the professional communication network.

References

Ersanlı, K. & Balcı, S. (1998). İletişim becerileri envanterinin geliştirilmesi: Geçerlik ve güvenirlik çalışması. *Türk Psikolojik Danışma ver Rehberlik Dergisi, 2*(10), 7-12.

Barnlund, D. C. (1970). A transactional model of communication. In J Linguarum (Ed.) *Language behavior: A book of readings in communication* (pp. 43-61). Paris: Mouton.

Braddock, R. (1958). An extension of the "Lasswell Formula". *Journal of Communication, 8*(2), 88-93.

Ergin, A. & Birol, C. (2000). *Eğitimde iletişim.* Ankara: Anı Yayıncılık.

Ergin, A. (2008), E*ğitimde etkili iletişim*, Ankara: Anı Yayıncılık

Franke, R. H., & Kaul, J. D. (1978). The Hawthorne experiments: First statistical interpretation. *American sociological review, 43*(5), 623-643.

Günal, Z. (2016). Liderlik ve Çoklo Lens Bakış Açısı. Retrieved on May 09, 2016, from http://www.turkiyeajansi.com/liderlik-ve-coklu-lens-bakis-acisi-72yy.htm

Günal, Z. (2017). Sizin İletişim Kodunuz Nedir? Retrieved Jan 28, 2017, from http://www.turkiyeajansi.com/sizin-iletisim-kodunuz-nedir-165yy.htm

Grunig, J. E., & Repper, F. C. (1992). Strategic management, publics, and issues. In J. E. Grunig (Ed), *Excellence in public relations and communication management* (pp 117-157). New York: Routledge.

Harper, D., (2000). "Communication". Online Etymology Dictionary. Retrieved on Sept 19, 2016 from https://en.wikipedia.org/wiki/Communication

Karmin, A. (2016). Communication: Sending and Receiving Messages. Retrieved on Jan 2, 2017, from https://blogs.psychcentral.com/anger/2016/01/communication-sending-and-receiving-messages/

Lasswell, H. D. (1948), The structure and function of com-munication in society, In L. Bryson (Ed) *The Communication of Ideas* (pp. 37-51). New York: Harper, 37-51.

Lang, K., & Lang, G. E. (1961). *Collective dynamics*. New York: Crowell.

Lippmann, W. (2004). *Public opinion*. New York, Dover Publications.

McCombs, M. E., Shaw, D. L., & Weaver, D. H. (1997). *Communication and democracy: Exploring the intellectual frontiers in agenda-setting theory.* New York, Routledge.

McQuail, D., & Windahl, S. (2015). *Communication models for the study of mass communications.* New York, Routledge.

Rogers, E. M. (1995). *Diffusion of innovations.* New York, Free Press.

Schramm, W., (1973), *Men, messages, and media: a look at human communication.* NewYork: Harper & Row.

Thurman, W. (1988). Face it: Pr pablum fools none of the people none of the time. *American School Board Journal, 175*(3).

Yılmaz, V. (2004). Lisrel ile yapısal eşitlik modelleri: Tüketici şikayetlerine uygulanması. *Sosyal Bilimler Dergisi, 4*(1), 77-90.

Yılmaz, V., Çelik, H. E., & Yağızer, C. (2009). Çevresel duyarlılık ve çevresel davranışın ekolojik ürün satın alma davranışına etkilerinin yapısal eşitlik modeliyle araştırılması. *Anadolu Üniversitesi Sosyal Bilimler Dergisi, 9*(2), 1-14.

Whaley, K. W. (1989). *Perceptions of school principal communication effectiveness and teacher satisfaction on the job.* Unpublished master's thesis, San Jose: San Jose State University.

Westley, B. H., & MacLean, M. S. (1957). A conceptual model for communications research. *Journalism & Mass Communication Quarterly, 34*(1), 31-38.