

Learning analytics to identify the influence of leadership on the academic performance of work teams

Individual grade (leader)	0.60	0.002 (<0.01)
Individual grade (teammates)	0.65	0.000 (<0.01)
Teamwork grade	0.40	0.049 (<0.05)

Regarding transparency, the results show only a positive correlation between grades and ALQ3 (Table 4).

Table 4. Correlation between ALQ3 and grades

Variable	Rho	p-value
Leader final grade	0.54	0.005 (<0.01)
Messages average	0.51	0.009 (<0.01)
Teamwork grade	0.50	0.005 (<0.01)
Leader individual grade	0.46	0.096 (<0.01)

In order to discover the influence of authentic leadership on individual student behavior, we also analyzed the exchange of messages within the groups –from the LA tool– and found interesting relationships between some of the variables that form the dimensions of authentic leadership.

Table 5. Linear regression model

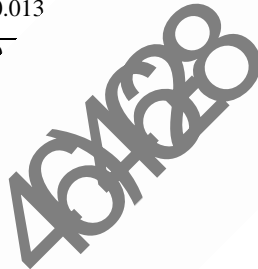
	Estimate	Std Err.	t-value	Pr(> t)
(Intercept)	-5.183	22.803	-0.220	0.823
ALQ1	-3.582	1.624	-2.206	0.042
ALQ2	4.628	1.656	2.795	0.013
ALQ4	2.857	1.484	1.925	0.060
ALQ6	4.194	1.607	2.610	0.011
ALQ9	-3.335	1.297	-2.571	0.012
ALQ11	-3.996	1.487	-2.688	0.009
ALQ14	7.823	1.796	4.355	<0.0001
ALQ15	-3.821	1.654	-2.310	0.023

The LA system analyzes student behavior and builds a linear regression model to predict answers to the ALQ (see Table 5).

The model obtained in Table 5 explains the variance of the variable "number of messages sent per user in a group", and Figure 5 shows the basic graphical adjustment of the

model in the LMS system. With data generated by the LA system, the research aims to predict the number of messages per user sent in a group based on

the variance of the variable "number of messages sent per user in a group", and Figure 5



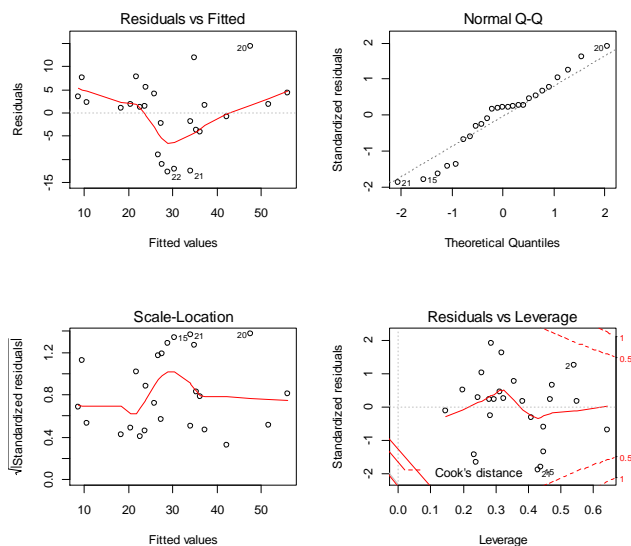


Figure 5: Linear regression model total posts

5. CONCLUSIONS

The results presented in Table 2 support H0 because coordinators have the characteristics of authentic leadership: the lowest average obtained in one of the dimensions is 7.4 over 10 (self-awareness). Therefore, we can conclude that CTMTC contributes to the formation of authentic leadership.

Table 3 shows that there is a strong positive correlation between self-awareness and coordinator and group grades. Other evidences support the conclusion that, albeit not that strong, there is influence between transparency and coordinator and group grades (Table 4). These results support H1, and therefore leaders who exhibit characteristics of authentic leadership achieve better grades in teamwork. The results of the test are a bit better than those obtained by [21] and [16].

The linear regression model (Table 5) contains components of each of the 4 dimensions of authentic leadership, the achieved model. This model may be used to predict the number of messages exchanged by students according to the results of the ALQ, and supports H2. Furthermore, and since there is a relationship between the number of messages and the characteristics of true leadership, it could be possible to identify authentic leaders from the number of messages exchanged because higher leadership scores correspond to generation of higher number of messages.

One of the future work lines is based on identifying processes and activities associated to authentic leadership in the academic teamwork.

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