

# Diagnose current university education from a teacher's perspective

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**Abstract.** In the beginning of 21 century, there is dramatically change in education, whatever students' age, all enthusiastic in cell-phone and game playing, as my experience teaching in the university of OIT, how can I draw students' attention in the class is difficult. This article is from the perspective of a teacher to understand the current teaching problems. Including the two courses I taught, economic and management, I used the comparison of average score and standard deviation, which have a slowly upward. I also compare students' learning questionnaires which I conducted in 2014-2017, it reflects students' learning dilemmas, these deserves our in-depth study. Why students skip classes? Why their learning effectiveness decreasing, also the problems emerges and this point to school teachers, I inspect teachers' performance in the paper to assure if there is room for teachers' improvement.

## 1 Introduction

US-China trade war is on the rise, the storm continues to expand, and the impact is everywhere. It is real that after entering the 21st century, different thinking takes place, but one thing for sure that is the goal of higher education is to foster talented people to develop the country's economic growth; however, those politicians only interest in the eye. The conflict in the world continues to emerge, it affects young people's learning in all respects. Young people's problem continues to happen again, the status of young people and the prospects for the future is worrisome. Ji and Zhang[9] found the positive correlation between study conditions and mental stresses of college students. An online survey by Votta and Benau[21] found that academic concerns were a primary source of stress. When stress is perceived negatively or becomes excessively, it can affect both health and academic performance[4]. University students often attempt to control and reduce their stress through avoidance, religious and social support, or positive reappraisal[15]. Another research[2] indicated that secondary school students had a medium level of stress and the significant sources of stress included academic, intra-personal and environmental. An investigation by Beiter et al.[3] indicated that the top three concerns were academic performance, pressure to succeed, and post-graduation plans.

Recently, I tried to figure out students' learning archives of two subjects, one is economics and another is management. The data I collected from school in the past 6 years, and found some interesting phenomenon, these analysis shows in Table 1 And Table 2. The average score around 60-70, but deviation head down slowly, and in some range shows as Figure 1 And Figure 2. The following research was author's long-term study of interaction between teachers and students in Technical & Vocational Schools(OIT). The 3 combinations are teacher-student, teachers and students. The investigation was taken in 2014-2017, 358 college students joined the survey[22]. We use a questionnaire to investigate the reaction of students learning in class.

From campus students' questionnaire survey, we extracted 6 factors and it shows there were interactional deficiency between teachers and students. Social network analysis was another way to assess the performance of teachers, quantifying teachers' publication in campus. Collaborations among school teachers with different skills and backgrounds are shown on co-authors paper published. The argument is that the co-authorship network is compatible with social-linkage, and the hidden power embedded in the co-authorship network.

Performance appraisal is an inevitable function of management. In universities, Teachers' assessment can divide into three parts, namely, teaching, counseling and

writing. Interaction with students will happen in teaching and counseling, the third part to review the performance of teachers, quantifying their publication activities are used as a good measure for the performance. With the development of science, more and more researches have to be completed by the cooperation of multiple scientists. The growing complexity of science and its specialization require that research be based on collaborations among teachers with different skills and backgrounds [5]. Research collaboration is a key mechanism for knowledge diffusion within research communities [7]. Studies find that research collaboration can be influenced by numerous. Some researchers define it as a process of integrating different bodies of knowledge. Integration also entails social interaction, including negotiation of conflict and arguments.

A working model of transdisciplinary scientific collaboration was proposed by Stokols, et al [19]. This working model includes three major faces: antecedents, intervening processes, and outcomes. Stokols, et al. [19] indicated that the intervening processes have received little or no empirical attention in studies. The intervening processes include the influence of social or interpersonal cohesion among center members on their efforts to achieve intellectual or scientific integration of their ideas.

Members in a department are working in an evolving network of communication from which interactive learning and knowledge leading to innovations. Koseoglu [10] indicated the collaboration could strengthen the network of the research community to consolidate the disciplines, disseminate knowledge, and shift expansion and transformation in the discipline. In recent years, a number of studies have been conducted to reveal the evolution of collaboration and networks and to identify key actors as either individuals or groups and to demonstrate the relationships among these actors, or relationships between indicators of these networks and actors' outputs. The collaboration based on knowledge domain has been assessed in a number of studies via qualitative and quantitative methods. These research methods posit the tension exists between the organization and its environment, and individuals and their relations within the organization [6].

Abbasi, Chung, and Hossain [1] revealed that scholars with efficient collaboration networks who maintain a strong co-authorship relationship with one primary co-author within a group of linked co-authors perform better than those researchers with many relationships to the same group of linked co-authors. Li, Liao, and Yen [12] found that co-authoring with prolific scholars helps researchers develop centralities and, in turn, generate higher numbers of citations. They also indicated that researchers with longer publishing tenure tend to have higher degree centrality, and when they collaborate more with different scholars, they achieve more closeness and betweenness centralities, but risk being distrusted by prolific scholars and losing chances to co-author with them.

Social network analysis stems from investigations by Moreno [17] and Lewin [11] on the social relations and

network characteristics of individuals. It is one robust method for studying the mechanisms of communication and collaboration among members in a department. It has been widely utilized in various fields, such as sociology [18], anthropology [20], and political science [9]. In the past three decades, social network analysis has been increasingly advocated as a key approach to addressing network organization issues in management [20]. A visual representation of a network provides a rich understanding of complex academic researcher groups.

Li, Zhang, Luo, and Jiang [14] indicated that interpreting the formation of co-author networks is an interesting task since it can uncover the human behavior reasons why the co-author network can form. In this research, not only the visualization of the co-authorship network is illustrated, but it also takes into consideration the latent daily interaction. Networks can be analyzed to look for information about the network as a whole, or to look for individuals of interest, such as which person is most central or marginalized in a network. We tended to evaluate our graphs for information about individual behavior and as a whole at the network level.

## 2 Method

### 2.1 Subject of management

Table 1 And Table 2 record students' performance in 6 years of the course I taught, the average score around 60-70 interval, but deviation rise slowly, shows as Figure 1 And Figure 2.

**Table 1.** Analysis of management

Year	Students	Fail	Average	S.D.	Highest	Lowest
106-I	50	9	64	16.77	95	18
105-i	47	13	57	15.22	87	30
104-i	49	12	58	18.73	93	0
103-i	58	10	64	10.67	87	32
102-i	53	15	67	15.88	90	45
101-i	62	10	67	11.37	85	40

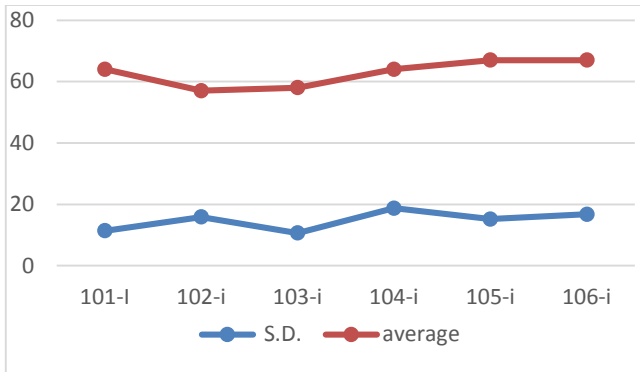


Figure 1. Analysis of management S.D.

## 2.2 Subject of Economic

Table 2. Analysis of economic

Year	students	Fail	Average	S.D.	Highest	Lowest
106-i	42	12	57	18.12	87	12
105-i	41	6	65	15.3	94	16
104-i	53	11	61	15.01	88	26
103-i	55	8	63	9.59	90	41
102-i	54	7	68	11.31	88	30
101-i	59	8	64	11.21	83	30
100-i	60	8	66	12.28	89	30

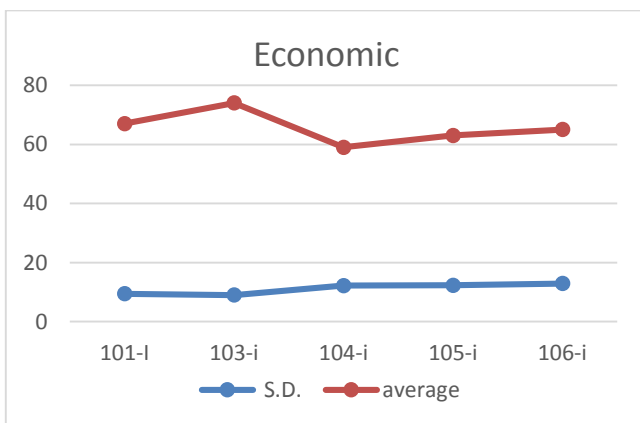


Figure 2. Analysis of S.D.

## 2.3 Source of stress

This research targets on the academic institution(OIT) located at north part of Taiwan, it has 5000 students. I conducted students' stress survey to investigate under higher education system, students bear what kind of psychological pressure. The psychology scale developed by Chang [8].

Teachers in campus also bear some kinds of stress, the quantity of paper published means that he can get higher

evaluation. Our choice of teaching units has been established for nearly 50 years, a wealth of teaching experience inherited between the inter-department. Our research focus on statistical database of co-author group membership consists of 59 members. Although teaching staff is 10 members right now, but as time in and time out, someone joined the staff in sometime while some other left the unit, all journal papers survey accumulated was 85.

## 3 Results and Discussion

### 3.1 Discussion the source of stress

From factor analysis, we extracted six variables. The percentage of cumulative variance was 59.19% (Table 3). We found that students' problem in the first factor "communication with the teacher" is the highest percentage of all, it means that students care most about the interaction with teachers, the other 5 factors are: learning anxiety, students' confidence, about curriculum, part-time job and social environment, it shows in Table 5.

Table 3. Total Variance Explained

component	Capture the square and loaded		
	total	variance%	accumulate%
1	20.47	34.13	34.13
2	5.08	8.47	42.60
3	3.10	5.17	47.77
4	2.65	4.42	52.19
5	2.18	3.64	55.84
6	2.01	3.35	59.19

Table 4. Students' communication with teachers

Component 1		
item	%	teachers' problem
22	0.777	teachers and students do not two-way communication
25	0.773	teachers seldom provide students with positive feedback
23	0.767	teachers' teaching content cannot be expressed clearly in class
24	0.747	teachers offer little helping to their trouble
38	0.745	bridging courses between unsatisfactory
21	0.735	teacher lectures and textbooks vary widely
31	0.73	teachers seldom encourage students to think

Table 4 was extracted from factor analysis, Arrangement is based on loading value level of component 1. Students care about the time they communicate with teacher, they also expected there will be positive feedback. Most teachers know that they need to be patient and listen to students' voice. In Table 5, we compare these six factors and found that there are some other problems students got to face, three factors were higher than 4, it means that school authority should pay attention to them and solve these problems.

**Table 5.**Source of stress comparison

Source of stress	Mean	SD
communication with teachers	3.0403	1.42141
learning anxiety	4.0649	1.61952
Students' confidence	3.8149	1.34274
about curriculum	4.1390	1.56369
part-time job	3.2190	1.26174
social environment	4.1937	1.58896

### 3.2 Description of the Participants

Then we turn to the topic of teachers' stress, the research participants came from a teaching unit. Their publications in recent 2 decades were collected from the bibliographic search on website. For each article, the authors' names were collected for co-authorship network analysis. As table 6 shows, two of these 59 participants are prolific. They have published 24 and 31 papers, over half of all the published papers. There were 33 persons having no papers published as the first author.

Network relationships reveal collaboration between members, it forming strategic partnerships and alliance, in the same time; also it has the function of communication, offer information, problem solving and innovation that is why people choose move toward this bondage. For exploring their collaboration, further analysis shown on Table 7. It presents the frequencies of in-degree, out-degree, and betweenness. Maximum of in-degree and out-degree is 30 and 55 respectively. Since we use in-degree as an indicator of invitation, it means there is one person having received 30 invitations as a co-author. Out-degree used as an indicator of inviting others to be as a co-author, and it means the highest prolific member has invited 55 persons as co-authors during these 2 decades. Obviously, the prolific members are the star of co-authorship network.

The variable betweenness is between 0 and 7.63. Interactions between two nonadjacent actors have to depend on the other actors. The persons with higher betweenness are these "other actors". In addition, these "other actors" potentially have some control over the interactions between

the two nonadjacent actors. As figure 3, these "other actors" are the one between the others. Obviously, they have some control over paths in the graph. Since they are between the others, they are more central and play most important roles in the network.

**Table 6.**Papers published

No. of paper	Frequency	%
0	33	55.9
1	10	16.9
2	6	10.2
3	2	3.4
4	2	3.4
5	1	1.7
6	2	3.4
9	1	1.7
24	1	1.7
31	1	1.7

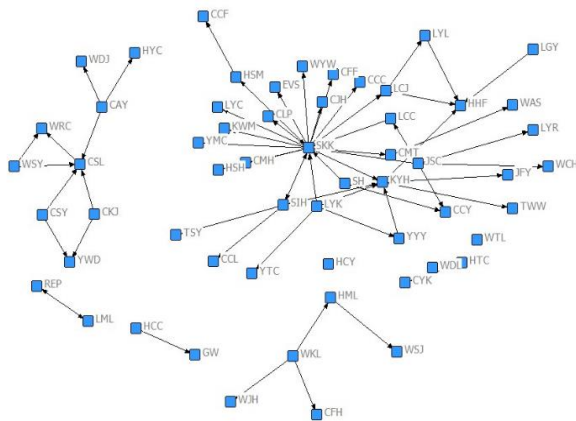
**Table 7.**Frequencies of in-degree, out-degree, and betweenness

Variables	Min	Max	Mean	SD
In-degree	0	30	3.51	6.00
Out-degree	0	55	3.51	8.66
Betweenness	0	7.63	0.47	1.39

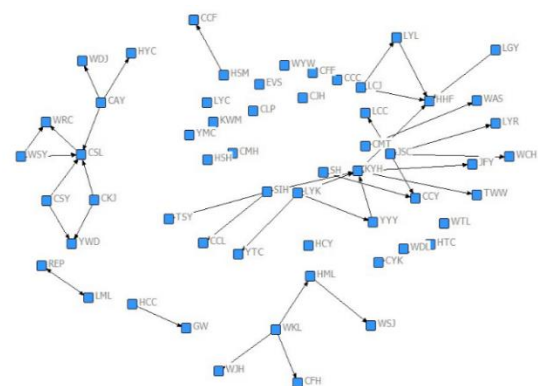
**Table 8.**Frequency of in-degree

In-degree	Frequency	%
0	8	13.6
1	23	39.0
2	11	18.6
3	2	3.4
4	5	8.5
5	2	3.4
6	1	1.7
7	1	1.7
8	1	1.7

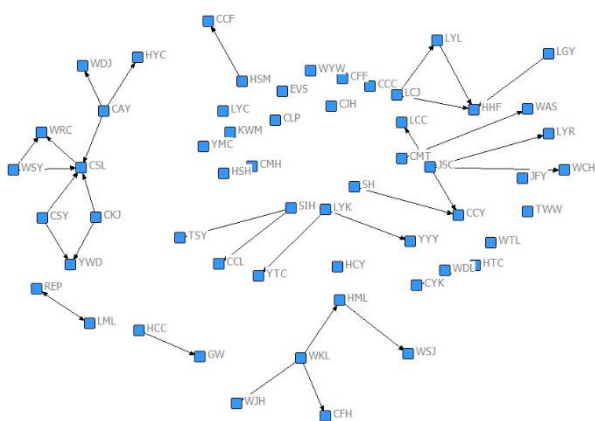




**Figure 4.**Co-authorship network (the highest betweenness deleted)



**Figure 5.**Co-authorship network (the 2nd high betweenness deleted)



**Figure 6.**Co-authorship network (the 3rd high betweenness deleted)

Key persons as LDS, SKK, YYY and KYH play as the roll of stars in this department. If they left, what would happen? Figure 4, 3 and 4 will tell us the results. As Figure 4, when the person with the highest betweenness is deleted, 5 isolates appear and the original largest group (46 persons)

separates into 2 groups (5 persons and 35 persons). These 5 isolated persons have not any connection with others.

When we continue to delete the 2nd high betweenness, in Figure 5, 16 isolates, 2 pairs, and 1 triangle appear. There are still 3 groups, with less persons.

When we continue to delete the 3rd high betweenness, in Figure 6, more isolates, pairs, and triangles appear. If all these four higher betweenness are deleted, 21 isolates, 5 pairs, 2 triangles, and 3 groups left. It has no influence on the original 2 pairs, and 9-person group. They exist in the same state. The result shows that the stars as a leadership in an organization are crucial and irreplaceable. This result summarized as Table 11.

Generally, teaching unit in academic is different in network society, leader of the unit plays either communication role or convey the message from hierarchical level. It also can be bottleneck when the leader is not full engagement and de-energizing. In the circumstance as this all members in the teaching unit turn out to be isolated and peripheral. All crews did his own research or teaching without knowing what happens in the outside world. Sometimes it may jeopardize the whole community.

**Table 11.**Summary of the evolution network

Deleted	group	isolate	pair	triangle	total
None	2 (9, 46)	0	2	0	59
1 <sup>st</sup>	3 (9, 5, 35)	5	2	0	58
2 <sup>nd</sup>	3 (9, 5, 16)	16	4	1	57
3 <sup>rd</sup>	3 (9, 5, 4)	18	4	4	56

$$\text{Total} = 9 + 46 + 2*2(\text{pair}) = 59$$

$$\text{Total (1}^{\text{st}}) = 9 + 5 + 35 + 5(\text{isolate}) + 2*2(\text{pair}) = 58$$

$$\text{Total (2}^{\text{nd}}) = 9 + 5 + 6 + 6(\text{isolate}) + 2*4(\text{pair}) + 3*1(\text{triangle}) = 57$$

$$\text{Total (3}^{\text{rd}}) = 9 + 5 + 4 + 18(\text{isolate}) + 2*4(\text{pair}) + 3*4(\text{triangle}) = 56$$

### 3.4 Campus interactional deficiency

From above we find out the relationship between teacher and student in school seems not good at all, students attributed all problems to their teachers. Students think about their teachers as:” Teachers often give a negative evaluation - blaming or criticizing”, “Teachers treat students with a lack of respect “, “Teachers will not accept the views of students”, “Relationship with teachers is unfriendly”. Whether teachers know the reaction of students or they just concentrate on their paper publishing. Teachers contribute their energy to specific field of publication, and the authority also encourage them to do so, let the students fall

into the disappointment of frustration. If teachers do not join the co-authors network social-linkage, individuals can become isolated and trapped in helpless peripheral.

## 4 Conclusion

Publication is required in academic society and technical & vocational schools recently in Taiwan and elsewhere of the world. Crewmembers of teaching unit joining co-authorship are for the purpose to increase the quality and quantity of papers. When the trend is forming, everyone is chasing the link. However, the premise is that there is a good teacher-student relationship. The priority is: first teaching, the second is counseling, then is research. The current developments have confused us all. Students are also helpless; no wonder the school will fall into chaos.

The author's intention in writing this essay is to awaken public awareness so as to eliminate the lack of interaction between teachers and students, enabling students to learn happily and scholars to concentrate on research.

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