

## INFLUENCES OF GENDER AND ACADEMIC RANK ON THE RELATIONSHIPS BETWEEN FACULTY STRESS AND BURNOUT FOR COLLEGE TEACHERS IN TAIWAN

**Ya-Ling Chang**  
National Chung Hsing University

**Tsai-Wei Huang**  
(Corresponding Author)  
Department of Counseling, National Chiayi University,  
Chiayi, Taiwan.  
Email: [tw Huang@mail.ncyu.edu.tw](mailto:tw Huang@mail.ncyu.edu.tw)

**Shu-Yu Lin**  
Department of Counseling, National Chiayi  
University, Chiayi, Taiwan.

**Hsiao-Yu Tseng**  
Department of Counseling, National Chiayi University,  
Chiayi, Taiwan.

### ABSTRACT

**M**any studies have mentioned that the relationship between faculty stress and burnout; however, few of them revealed the influences of gender and academic rank on this relationship. The study aimed to examine the influences of gender and academic rank on the relationships between faculty stress and burnout for college professors in Taiwan. There were 583 college teachers in Taiwan participated in the Maslach Burnout Inventory and the Faculty Stress Scale. Through the analyses of canonical correlation and structural equation modeling, we found that female associate professors and lecturers in Taiwan may be at the highest risk of experiencing burnout, especially when experiencing symptoms of emotional exhaustion. Their stress appears to stem from mostly time consuming and demanding administrative matters and heavy workloads, but is unrelated to professional identity.

**Keywords:** Faculty stress, burnout, canonical correlation; structural equal modeling

## Introduction

With the rapid changes in social, political, and economic life inherent of a global society, college professors often encounter high levels of stress, including academic pressures, emotional distress, role ambiguity, achievement stress, value conflict, and stress from promotions. Excessive stress not only imposes a negative impact on teachers, but also exposes teachers to the risk of burnout.

Although teaching is the primary responsibility of college professors, it is not their main source of stress (Taris, Schreurs, & Van Iersel-Van Silfhout, 2001); instead, their main sources of anxiety include academic research, performance evaluation, and society contribution. Through the Faculty Stress Index Scale (FSI) examined in the United States with five indexes of stress (student interaction, professional identity, departmental influence, time constraints, and reward and recognition), the index with the highest association with stress was “professional identity” (Gmelch, Wilke, & Lovich, 1986). A reasonable explanation for this phenomenon is that college professors face facets of stress such as evaluation and promotion, which are key factors that influence one’s professional identity (Todd, Madill, Shaw, & Bown, 2008). Because performance in this field is usually evaluated by the quality and quantity of research and articles published, additional stress may be felt due to time limitations affecting one’s research output, therefore making the stress associated with “professional identity” the highest among the five indexes (Taris et al., 2001). Conversely, according to Gmelch, Lovich, and Wilke, (1984a, 1984b), among the responsibilities of professors, teaching-related stress is perceived higher than research and contribution in the United States. However, this result may be different for other cultures.

Excessive exposure to stressful situations could lead to burnout, a work-related syndrome that causes physiological, emotional, and psychological exhaustion. Maslach, Jackson, and Leiter (1996) categorized burnout among professors into three levels: emotional exhaustion (EE), depersonalization (DP), and low accomplishment (LA). Burnout has an especially high probability of occurring to those who are engaged in professions that require human interaction (Farber, 1991). It not only affects one’s physiological and mental health, but also leads to a decrease in the quality of service provided. To make matters worse, burnout can also obstruct professors from succeeding in their teaching duties (Byrne, 1998).

The literature reveals that burnout is related to the concept of irrationality. In the case of college professors, they are not only required to teach, conduct research, publish articles, and undergo evaluation—they also carry a heavy administrative workload. Additionally, the working environment does not offer reciprocal rewards and, under the influence of other factors such as lack of support and feedback from colleagues and administrators, burnout is most likely to occur (Farber, 1998; Pines, 2002). Asimeng-Boahene (2003) posits that the lack of resources and support from the administration, oversized classes, inappropriate educational training, an unfriendly political atmosphere, and foreseeing no opportunities for promotion in their profession will lead professors to feel powerless and frustrated.

Aside from relating to irrationality, burnout could also be seen in many common situations. While multiple roles such as instructor, researcher, and leader may lead professors to feel upset and exhausted (Taylor, Zimmer, & Womack, 2005), so too may the increasing perception of environmental and extrinsic stress. Furthermore, research shows that personal characteristics also affect the formation of stress (Brouwers & Tomic, 2000). A common stress and exhaustion-provoking situation that relates to personal characteristics would be when a professor doubts his or her teaching ability. Professors with a strong feeling of self-worth tend to be more adaptable in educational environments, and being able to adapt to one’s work environment has a negative correlation to burnout (Evers, Brouwers, & Tomic, 2002). Professors with low self-worth might not be able to achieve satisfaction from their career, thereby inducing work stress and leading gradually to burnout (Evers, Gerrichhauzan, & Tomic, 2000).

Burnout is most obvious in one's attitude toward work, where symptoms including absence from work, searching for new employment opportunities, behaving unconscientiously, and experiencing a low sense of personal achievement can be seen (Van Dierendonck, Schaufeli, & Buunk, 1996). A professor experiencing burnout tends to experience strong emotions such as anger, anxiety, depression, and guilt. Furthermore, burnout may be reflected in physical fatigue, lack of energy, psychosomatic illness, and increased use of alcohol and drugs (Friedman, 1991; Moya-Albiol, Serrano, & Salvador, 2010; Shukla, Trivedi, 2008). It is also important to realize that burnout affects not only professors but also students, in that they might decide that they cannot handle the stress and choose to abandon their teaching career (Taylor et al., 2005).

#### *Recent research on gender and academic ranks*

Men and women might have different perceptions of work stress and burnout. Steel (1988) found that women felt more severe work stress than did men. A study by Doyle and Hind (1998) found similar results among college educators, in which female professors perceived more stress in all the five dimensions of the FSI than their male colleagues. Comparable findings have been reported in burnout research. Tumkaya (2006) found that female professors felt more serious emotional exhaustion than their male counterparts did. However, some studies found that although men perceive more depersonalization than women do (Doyle & Hind, 1998; Bilge, 2006), there were no differences between genders in the dimension of personal achievement (Tumkaya, 2006).

Higher academic ranks were associated with lower stress in an original national study by Gmelch, et al. (1986). Bilge (2006) found that research assistants felt lower levels of emotional exhaustion and personal achievement than did professors and lecturers. However, Tumkaya (2006) reported that professors felt the least amount of emotional exhaustion compared to other academic ranks, and that there were no differences in depersonalization. Unfortunately, few studies revealed the influence of gender and academic rank on the relationship between faculty stress and burnout for college professors in Taiwan.

Thus, the purpose of this study was to examine the influences of gender and academic rank on the relationships between work stress and burnout among college professors in Taiwan. Three questions were proposed: 1) what is the relationship between work stress and burnout in college professors in Taiwan; 2) if this relationship exists, how does it differ between genders; and 3) how does it differ between the various categories of college educators?

## **Method**

### *Participants*

A stratified random sampling method was adopted for the sampling procedure, which was based on eight fields of college study, including Education (4%); Humanities and Art (15%); Social Science, Commerce, and Law (25%); Science (8%); Engineering and Manufacturing (26%); Agronomy (2%); Medicine, Hygiene, and Social Welfare (14%); and Service (6%). We sent invitations to 2100 professors; 583 valid samples were collected (return rate, 27.62%), including 394 men (68%) and 189 women (32%). Of the sample, 126 were professors (22%), 183 were associate professors (31%), 202 were assistant professors (35%), and 72 were lecturers (12%). All of these participants were serving in universities and colleges in Taiwan, including public, private, and technological colleges.

### *Instrument*

The survey used in this research was composed of three parts: the first part was basic information about gender (1 for male, 2 for female), academic ranks (1 for professor, 2 for associate professor, 3 for assistant professor, and 4 for lecturer), schools, and professional fields. The second part was the Faculty Stress Scale (FSS), which was revised based on the dimensions of the FSI by job analyses of college professors in Taiwan. The third part was the Maslach Burnout Inventory-Educator Survey (MBI-ES), which was translated into Chinese under permission.

#### *Faculty Stress Scale (FSS)*

Twenty-seven items were dispersed among the five dimensions of the FSS, including student interaction (SI, 5 items), professional identity (PI, 7 items), departmental influence (DI, 5 items), time constraints (TC, 5 items), and workload (WL, 5 items). The first four dimensions were the same as those in the FSI, but the last was special for college educators in Taiwan. The instrument consisted of 27 items rated on a seven-point Likert scale. The higher the score, the larger the perceived faculty stress. With 200 pretesting samples participating in and under the analyses of principal factoring procedure and Promax rotation method, the KMO value was .908 and the value of the spherical chi-square was  $\chi^2 = 1481.98$  ( $p < .001$ ), indicating that the data are suitable for exploratory factor analysis. Factor loadings ranged from .56 to .91 for the SI dimension; from .57 to .88 for PI; from .56 to .88 for DI; from .49 to .81 for TC; and from .52 to .84 for WL. The cumulative variance extracted by these five factors was 66.67%; Cronbach's  $\alpha$  coefficients for SI, PI, DI, TC, and WL were .927, .878, .808, .885, .822, respectively, and .942 for the whole scale.

#### *Maslach Burnout Inventory (MBI-ES)*

The researchers had been permitted to translate the MBI-ES into Chinese before the study began. For the translating procedure, we asked three experts in English to translate the MBI-ES into Chinese and then asked another English expert, who had not seen the MBI-ES before, to translate the Chinese version back into English in order to ensure that the meanings of the items were consistent between the two languages. In total, there were 22 questions distributed across three factors of the MBI-ES: emotional exhaustion (EE, 9 items), depersonalization (DP, 8 items), and low accomplishment (LA, 5 items). Participants were asked to choose one option on a seven-point Likert scale, which was the closest to their real experience. Because the meaning of personal accomplishment was opposite to the other two scales, the scores of "personal accomplishment" had to be recorded reversely so that the higher the score recorded, the stronger the degree of job burnout perceived.

With the same samples and procedures conducted previously, the KMO value was .874 and the value of the spherical chi-square was  $\chi^2 = 2324.82$  ( $p < .05$ ) for the translated MBI-ES. Factor loadings ranged from .53 to .92 for the EE dimension, from .44 to .78 for the DP dimension, and from .30 to .76 for the LA dimension. The cumulative variance extracted by these three factors was 41.27%; Cronbach's  $\alpha$  coefficients for the EE, DP, and LA dimension were .894, .823, .756, respectively, and .823 for the whole scale.

#### *Analysis*

To answer the first question, canonical correlation analysis was used to explore the relationships between faculty stress and burnout. To answer the second and the third questions, AMOS 5.0 software was used to estimate the structural relationship between stress and burnout and to compare parametric differences (loadings and regression weights, respectively) between genders or academic ranks under the same acceptable model. If the values of the critical ratios for differences between parameters were greater than 1.96 or less than -1.96, then there existed statistically significant differences between groups (Arbuckle & Wothke, 1999).

## Results

### Canonical correlation analysis

Table 1 shows that two significant functions were derived in the summary of the canonical correlation analysis. There was a significant relationship between the canonical variates formed from variables of burnout and the canonical variates formed from variables of faculty stress. The canonical correlation coefficients of two canonical functions were .649 and .313 ( $p < .05$ ), respectively.

**Table 1.** Summary of the result of the canonical correlation analysis

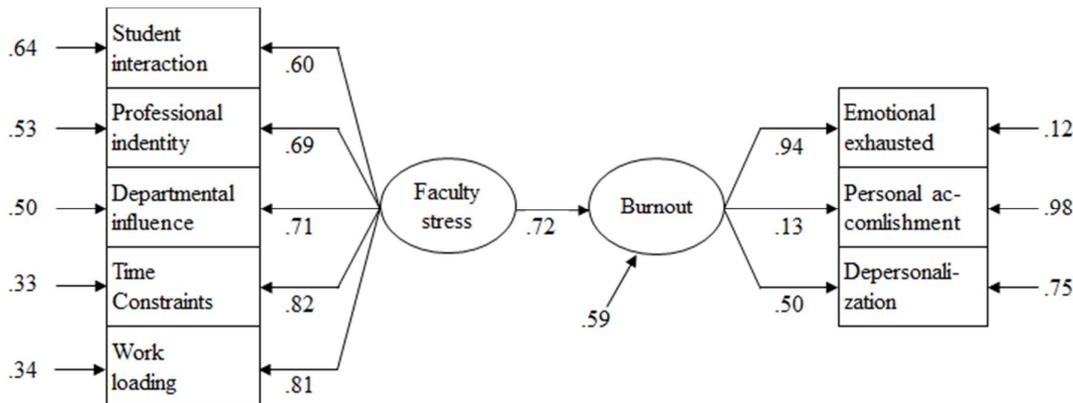
| X Variables             | Canonical variables |          | Y Variables                     | Canonical variables |          |
|-------------------------|---------------------|----------|---------------------------------|---------------------|----------|
|                         | $\chi^1$            | $\chi^2$ |                                 | $\eta^1$            | $\eta^2$ |
| Student interaction     | -.724               | -.298    | Emotional exhaustion            | -.992               | .027     |
| Professional identity   | -.660               | .189     | Personal accomplishment         | -.031               | -.555    |
| Departmental influence  | -.742               | -.500    | Depersonalization               | -.515               | -.827    |
| Time constraints        | -.903               | .377     |                                 |                     |          |
| Work loading            | -.788               | -.028    |                                 |                     |          |
| Percentage of variation | .589                | .103     |                                 | .417                | .311     |
| Overlap (%)             | .248                | .010     |                                 | .176                | .032     |
|                         |                     |          | $\rho^2$                        | .421                | .098     |
|                         |                     |          | Canonical correlation( $\rho$ ) | .649                | .313     |

In the first canonical correlation structure, we can tell that college professors with lower faculty stress scores also scored lower on the factors related to burnout; that is, the lower the degree of faculty stress experienced by professors, the more trivial the burnout symptom were in all aspects. Note that the redundancy indexes between the two variates were .248 and .176, which means that there were 24.8% of the variance of observed variables of FSS can be explained by a variate of  $\eta^1$  (burnout) through a variate  $\chi^1$  (called faculty stress), and in contrast, there were almost 17.6 % of the variance of observed variables of MBI-ES could be explained by the variate of  $\chi^1$  (faculty stress) through the variate  $\eta^1$  (burnout). This indicated that the strength of the first association between the two variates was mild.

The second correlation coefficient was weaker than the first. Not all variables were significantly related to each variate. The two variables with high canonical loadings for  $\chi^2$  were “departmental influence” and “time constraints.” “Personal accomplishment” and “depersonalization” had high canonical loadings for  $\eta^2$ . Results in this function show that college professors who scored lower in “departmental influence” and higher in “time constraints” had lower scores in “personal accomplishment” and “depersonalization.” Note that the redundancy indexes between the two variates were .010 and .032, they were all more trivial than the first canonical relationship.

### SEM analysis

An SEM analysis showed a fair fitting between the data and the model of faculty stress affecting burnout ( $\chi^2 = 229.776$ ,  $p < .001$ ,  $GFI = .904$ ,  $CFI = .882$ ,  $PNFI = .592$ , and  $PCFI = .598$ ). In the measurement model of college professor's stress, the largest value of factor loadings was for time constraints (TC,  $\lambda = .82$ ), followed by workload (WL,  $\lambda = .81$ ), departmental influence (DI,  $\lambda = .81$ ), professional identity (PI,  $\lambda = .69$ ), and finally, student interaction (SI,  $\lambda = .60$ ).



**Figure 1.** SEM of faculty stress and burnout

Note that the standardized regression weight of faculty stress' effect on burnout showed in Figure 1 was  $.72$  ( $p < .05$ ). This indicated that college professors' perceptions of faculty stress strongly influenced their perceptions of burnout. When faculty stress increased, professors experienced some burnout symptoms. This outcome supports the hypothesis that "the degree of faculty stress significantly affects the degree of burnout in college professors." Specifically, the components of burnout that college educators feel might come from the perceptions of emotional exhaustion ( $\lambda = .94$ ), then depersonalization ( $\lambda = .50$ ), and finally, personal low accomplishment ( $\lambda = .13$ ). This might indicate, as previous discussed, that college professors felt that wasting a lot of time in administrative services made them experience emotional exhaustion, depersonalization, and low personal accomplishment. Next, we were concerned with the differences in the stress-burnout association between gender and between academic ranks.

### Association differences between Genders

When we examined the difference between faculty stress and burnout between gender (**Figure 2**), we found that men and women perceived a similar relationships between faculty stress and burnout ( $C.R. = 0.148$ ). Specifically, women perceived more emotional exhaustion than men did ( $C.R. = 3.567$ ). The other subscales of faculty stress and burnout between genders were not significantly different. This indicated that the impact of the relationship between faculty stress on burnout was similar for both genders, but women tended to perceive higher levels of emotional exhaustion when they faced faculty stress.

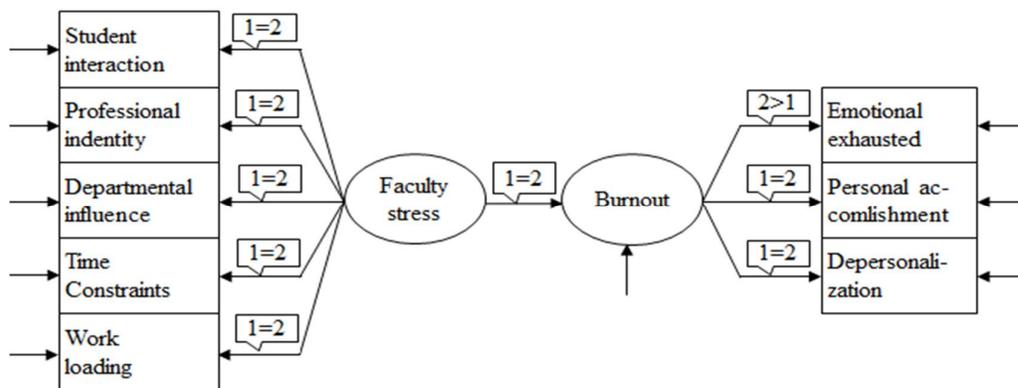


Figure 2. SEM for faculty stress and burnout for gender

Association differences between academic ranks

Figure 3 shows the differences in the relationship for faculty stress on burnout between academic ranks. It showed that professors and assistant professors perceived the influence of faculty stress on burnout less than did associate professors and lecturers in Taiwan ( $C.R.s = 2.094_{(2-1)}, -0.678_{(3-1)}, 1.887_{(4-1)}, -2.508_{(3-2)}, 0.665_{(4-2)},$  and  $2.190_{(4-3)}$ ). This sounds reasonable for professors because they might not need to be promoted, might have the ability to reject unwanted work, or even perceive less emotional exhaustion. However, interestingly, assistant professors in Taiwan still experienced less influence of faculty stress on burnout. This might be due to their young age and ease in interacting with students ( $C.R.s = -2.026_{(3-1)}, -2.849_{(3-2)},$  and  $1.623_{(4-3)}$ ).

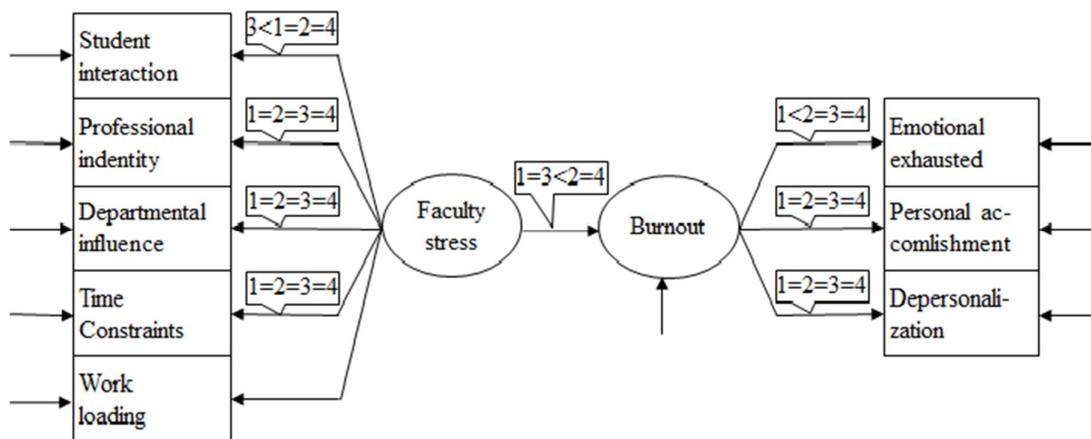


Figure 3. SEM of faculty stress and burnout for academic rank

## Discussion

The study aimed to examine the influences of gender and academic rank on the relationships between faculty stress and burnout for college professors in Taiwan. By applying canonical correlation analysis and SEM, we found that college professors perceived greater stress from time constraints and workload than from their professional identity or with student interactions, and felt more emotional exhaustion than depersonalization or low achievement. The findings were not consistent with Gmelch et al. (1984a, 1984b), in which the stress stemming from professional identity was the highest. This might be because college educators in Taiwan need to deal with a lot of administrative matters (e.g., heavy workloads and time constraints), and thus feel their heavy workloads more unacceptable than the stress from their professional identity, thereby perceiving high levels of emotional exhaustion.

The findings also showed that a strong significant relationship existed between faculty stress and burnout. The lower the faculty stress, the lower the burnout. This result is similar to the studies of Steel (1988), Etzion and Westman (1994), as well as van Dick and Wagner (2001). In addition, the relationships between stress and burnout for college professors in Taiwan were similar across genders but different across academic ranks. Women perceived more influences of stress on burnout than did men on the dimensions of time constraints, professional identity, and emotional exhaustion. The reasons may be that female professors felt more stress from both their jobs and their families compared to their male colleagues (Doyle & Hind, 1998). They not only have time constraints at work, but also have to devote time and effort to their families. Under these situations, women may have difficulty progressing in their professional fields. High levels of stress might lead female educators to perceive more emotional exhaustion. In addition, career women might also face role conflicts. If they experience more role conflicts, they may have lower job satisfaction (Eckman & Kelber, 2010).

On the other hand, college teachers with different academic ranks might experience different levels of faculty stress and burnout. To develop academically, they must speed up their field development, improve their professional knowledge, and conform to the requirements of evaluation on professional development. Prolonged high stress might lead college professors to gradually lose their ability to succeed at their jobs and manage their stress, and ultimately enter a state of burnout (Tumkaya, 2006).

We found that female associate professors or lecturers in Taiwan may be at the highest risk of experiencing burnout, especially when experiencing symptoms of emotional exhaustion. Their stress appears to stem from mostly time consuming and demanding administrative matters and heavy workloads, but is unrelated to professional identity. Therefore, in order to avoid suffering from burnout, reducing these faculty stressors is important. Terry (1997) suggested that professors should enroll in stress management courses or physical and spiritual growth courses. Additionally, a good support system of family and friends is important to provide comfort and encouragement (Botwinik, 2007). Because faculty stress is inevitable, educational departments and schools should also be responsible for providing sufficient resources for professional development to keep their educators from suffering from burnout.

## References

1. Arbuckle, J., & Wothke, W. (1999). *AMOS 4.0 User's Guide*. Chicago: Smallwaters Corporation, Inc.
2. Asimeng-Boahene, L. (2003). Understanding and preventing burnout among social studies teachers in Africa. *Social Studies*, 94(2), 58-62.
3. Bilge, F. (2006). Examining the burnout of academics in relation to job satisfaction and other factors. *Social Behavior and Personality*, 34, 1151-1160.
4. Brouwers, A., & Tomic, W. (2000). *Disruptive student behavior, perceived self-efficacy, and teacher burnout*. Paper presented at the Annual Meeting of the American Psychological Association. (ERIC Document Reproduction Service No. ED450 120)
5. Byrne, J. J. (1998). Teacher as hunger artist: burnout Its causes, effects, and remedies. *Contemporary Education*, 69(2), 86-91.
6. Doyle, C., & Hind, P. (1998). Occupational stress, burnout and job status in female academics. *Gender, Work & Organization*, 5(2), 67-82.
7. Eckman, E. W., & Kelber, S. T. (2010). Female traditional principals and co-principals: Experiences of role conflict and job satisfaction. *Journal of Educational Change*, 11, 205-219.
8. Etzion, D., & Westman, M. (1994). Social support and sense of control as moderators of the stress-burnout relationship in military careers. *Journal of Social Behavior and Personality*, 9, 639-656.
9. Evers, W. J., Gerrichhauzan, J., & Tomic, W. (2000). The prevention and mending of burnout among secondary school teachers. Technical Report. Retrieved July 28, 2007 from EBSCOHOST database on the World Wide Web: <http://www.ebsco.com>
10. Evers, W. J., Brouwers, A., & Tomic, W. (2002). Burnout and self-efficacy: A study on teachers' beliefs when implementing an innovative educational system in the Netherlands. *British Journal of Educational Psychology*, 72, 227-243.
11. Farber, B.A. (1998). *Tailoring treatment strategies for different types of burnout*. Paper presented at the Annual Convention of the American Psychological Association. (ERIC Document Reproduction Service NO. ED424 517)
12. Friedman, I. A. (1991). High-and Low- Burnout schools: School culture aspects of teacher burnout. *Journal of Educational Research*, 84, 325-333.
13. Gmelch, W. H., Lovich, N. P., & Wilke, P. K. (1984a). Sources of stress in academic: A national perceptive. *Research in Higher Education*, 20, 477-490.
14. Gmelch, W. H., Lovich, N. P., & Wilke, P. K. (1984b). A national study of stress among university faculty members. *Phi Delta Kappan*, 65, 367.
15. Gmelch, W. H., Wilke, P. K. & Lovich, N. P. (1986). Dimensions of stress among university faculty: factor-analytic results from a national study. *Research in higher Education*, 24, 266-286.
16. Maslach, C., Jackson, S.E., & Leiter, M.P. (1996). *Maslach burnout inventory manual* (3<sup>rd</sup> ed.). Palo Alto, CA: Consulting Psychologists Press.
17. Moya-Albiol, L., Serrano, M. Á., & Salvador, A. (2010). Burnout as an important factor in the psychophysiological responses to a work day in teachers. *Stress and Health*, 26, 382-393.
18. Pines, A.M. (2002). Teacher burnout: a psychodynamic existential perspective. *Teachers & Teaching*, 8(2), 121-140.
19. Shukla A., & Trivedi T. (2008). Burnout in Indian Teachers. *Asia Pacific Education Review*, 9, 320-334.
20. Steel, R. P., (1988). Effect of social support on the stress-burnout relationship. *Journal of Business and Psychology*, 3(1), 67-73.

21. van Dick, R., & Wagner, U. (2001). Stress and strain in teaching: a structural equation approach. *British Journal of Educational Psychology*, 71, 243-259.
22. Taris, T. W., Schreurs, P. J. G., & van Iresel-van Silfhout, I. J. (2001). Job stress, job strain, and psychological withdrawal among Dutch university staff : towards a dual process model for the effects of occupational stress. *Work & Stress*, 15, 283-296.
23. Taylor, b., Zimmer, C., & Womack, S.T. (2005). Strategies to prevent teacher stress and burnout: Online Submission. Retrieved July 28, 2007 from EBSCOHost database on the World Wide Web: <http://www.ebsco.com>
24. Terry, P. M. (1997). *Teacher Burnout: Is It Real? Can We Prevent It?* Paper presented at the Annual Meeting of the North Central Association of College and Schools. (ERIC Document Reproduction Service No. ED408258)
25. Todd, Z., Madill, A., Shaw, N., & Bown, N. (2008). Faculty Members' Perceptions of How Academic Work is Evaluated: Similarities and Differences by Gender. *Sex Roles*. Restrieved July 1, 2008 from SpringerLink E-Journals on the World Wide Web: <http://www.springerlink.com> DOI 10.1007/s11199-008-9480-9
26. Tumkaya, S. (2006). Faculty Burnout in Relation to Work Environment and Humor as a coping Strategy. *Educational Sciences: Theory & Practice*, 6(3), 911-921.
27. van Dierendonck, D., Schaufeli, W. B., & Buunk, B. P. (1996) Inequality among human service professionals: Measurement and relation to burnout. *Basic and Applied Social Psychology*, 18, 429-451.

### **Acknowledgments**

We are grateful to the editor and anonymous reviewers for their helpful comments and suggestions to improve the quality of the article.

Running Head:

***Faculty stress and burnout for college teachers in Taiwan***