Exploring the Relationship Between Conception of Language Learning and Foreign Language Learning Burnout: An Empirical Study Among University Students

Minghui Yang, Anhui Jianzhu University, China* Yuhui Zhai, Anhui Jianzhu University, China

ABSTRACT

This study explores the relationship between college students' conceptions of language learning and foreign language learning burnout and tries to solve the following problems: How does learners' conceptions of language learning affect their English learning burnout? How do you relieve English learning burnout? Data were collected through two questionnaires, English learning burnout and conception of language learning, among 363 non-English majors in two universities in central part of China. The findings provide empirical evidence linking college students' conceptions of language learning with their English learning burnout: "Testing" is the key factor that leading to burnout in English learning, which positively predicts "Exhaustion," "Apathy," and "Reduced self-efficacy"; "Memorizing" positively influences "Reduced Self-Efficacy" and negatively predicts "Apathy"; "Language Knowledge" negatively predicts "Exhaustion" and "Understanding and Seeing in a New Way" negatively predicts "Apathy."

KEYWORDS

Apathy, Exhaustion, Language Knowledge, Memorizing, Reduced Self-Efficacy, Testing, Understanding and Seeing in a New Way

INTRODUCTION

Burnout, a severe psychological syndrome, can affect an individual's well-being. Since its introduction to the field of second language acquisition (SLA), foreign language learning burnout has been considered an important factor that impacts learners' academic performance, interpersonal relationships, etc. (Asikainen et al., 2020; Ghadampour et al., 2016). Foreign language learning burnout consists of three basic phases: (1) exhaustion; (2) depersonalization; and (3) reduced personal accomplishment. In addition, Yang (2015) pointed out that, unlike general learning burnout, foreign language learning burnout is affected by factors related to foreign language learning activities, such as the memorization of vocabulary (Yang, 2015).

DOI: 10.4018/IJCINI.309133 *Corresponding Author

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

Acquiring a foreign language, especially English, is necessary for modern talents in China. Therefore, most Chinese students begin to learn English at a young age. Years of strenuous English learning does not necessarily gain expected achievements. Instead, many students experience varying degrees of language learning burnout. Researchers have found that foreign language learning burnout is related to foreign language anxiety, learning behaviors, and motivation (Xie & Huang, 2014). The conception of language learning is regarded as a high-order specific learning belief, referring to learners' attitudes toward the nature of learning.

Many studies have looked at the relationship between learners' conception and learning behaviors. Few empirical studies focus on the relationship between the conception of learning and burnout in the SLA field. Hence, this research attempts to explore the relationship and identify an effective solution to alleviate burnout in the English-learning process.

BACKGROUND

Foreign Language Learning Burnout

Burnout was first proposed by psychologist Freudenberg (1974) to describe pressures in the working environment characterized by extreme exhaustion, indifference, and effortlessness. According to Pines & Aronson (1988), learning burnout is the negative performance of learning, such as low enthusiasm and indifference when faced with long-term learning pressures. More scholars have tried to define the concept of learning burnout from different perspectives (Neumann et al., 1990). In fact, the measurement of learning burnout had been established by many scholars. Among them, the Maslach and Jackson (1981) burnout inventory's three-category division is the most adopted: (1) emotional exhaustion; (2) depersonalization; and (3) lack of personal accomplishment. To find a more suitable scale for foreign language learning burnout, the foreign language learning burnout inventory, coined by Yang (2010), was adopted. Yang (2010) then divided foreign language learning burnout into three additional types: (1) emotional exhaustion; (2) apathy; and (3) reduced self-efficacy.

Scholars have studied learning burnout through influencing factors, adverse effects, and effective interventions. Influencing factors include self-efficacy, self-esteem, and stress (Charkhabi et al., 2013; Rasheed-Karim, 2020; Sovitriana et al., 2019). Negative effects of learning burnout can impact a student's negative psychology, mental health, academic performance, and interpersonal relationships. It can even include substance abuse and the increased possibility of suicidal thoughts (Jackson et al., 2016). The gamified approach is proven effective in alleviating students' learning burnout and improving learning achievement (Mu & Guo, 2022).

Conception of Language Learning

Research on the conception of English learning of second language learners has received significant attention since the 1980s. Research on students' conceptions of learning traces back to the late 1970s and early 1980s. The notion of conceptions of language is proposed as a higher-level category specific beliefs (Benson, 1999). Therefore, the review of the conception of language starts with learning beliefs.

Learning beliefs refer to the common and, in some cases, erroneous and preconceived ideas that students hold about the nature of learning and teaching (Victori & Lockhart, 1995). Learning beliefs come from multiple sources, such as previous language learning experiences, cultural background, and personality traits. In the case of some learners, beliefs can have an apparent effect on learning outcomes because learners are able to act on their beliefs. Learning beliefs are dynamic and context specific. In other words, beliefs change over time as a product of new situational experiences.

To measure language learning beliefs, Horwitz (1988) created the beliefs about language learning inventory (BALLI), one of the most cited documents in this field. According to the BALLI scale, learning beliefs include five dimensions: (1) language learning ability; (2) language learning difficulty; (3) language learning nature; (4) language learning strategies; and (5) language learning

motivation and expectations. Tsai (2004) regarded the conception of science learning as a high-order belief, dividing it into seven categories: (1) memorizing; (2) preparing for tests; (3) calculating and practicing tutorial problems; (4) increasing knowledge; (5) applying; (6) understanding; and (7) seeing in a new way. Grant (2011) confirmed that conception of language learning is an essential determinant of learning behaviors. Based on Tsai's (2004) division, Zheng (2016) built the first questionnaire around the conception of English learning, listing eight dimensions by adding Grammar, Vocabulary, and Pronunciation. Many studies have confirmed that conception of language learning is an essential determinant of learning behaviors. Yokoyama and Miwa (2020) examined the relationship of goal orientation and the conception of learning on learning behaviors, which confirmed the mediation role of the conception of learning.

Conception of Language Learning and Foreign Language Learning Burnout

The conception of learning will affect learners' academic performance, learning strategies, and learning behaviors related to mathematics, English, and other subjects. Researchers found that language learning beliefs are the main reasons for learners' language anxiety.

Aslan et al. (2021) examined the possible relationship between learner beliefs and language anxiety in a Turkish English foreign language (EFL) context. Their study found that positive beliefs about language learning may reduce anxiety and boost confidence in language learning. The result mirrors previous studies. Although positive learning beliefs cannot guarantee the quality of learning, they can raise students' learning awareness. Conversely, negative learning beliefs hinder the process of learning.

Lynch (2020) identified the moderating role of emotional intelligence between teachers' social and emotional learning beliefs and burnout. Although learning burnout and the conception of English learning have been applied to various fields, few studies have addressed the correlation between language learning burnout and conception of English learning. This research attempts to address this research gap by exploring the relationship between Chinese students' language learning burnout and conception of English learning.

METHODOLOGY

Research Questions

Traditional ways of teaching English in China made college students feel burnt out. Moreover, the English language course within the university develops learners' overall English language competence with an emphasis on speaking and listening. Students in nonEnglish majors suffer burnout when learning English because their goal is to pass exams. Students' sense of English learning burnout is getting more serious; therefore, measures are needed to alleviate the problem.

The current study's survey data was collected from 363 nonEnglish major students from two universities in central China. First, it explores how learners' conceptions of English learning affect their burnout. Second, it discusses ways to relieve the effects of English learning burnout.

PARTICIPANTS

The study included 363 participants from two universities who were randomly selected and invited to participate. All participants were asked to complete a questionnaire anonymously. Most of the participants majored in telecommunications, engineering, or management (303 students in science and engineering, 62 in liberal arts). The study included 233 male students and 132 female students. Senior students are more likely to experience language learning burnout; therefore, they took up a large portion of participant slots (33.7%). There were 97 freshmen, 97 sophomores, and 48 junior students.

INSTRUMENT

This research employed a questionnaire to explore the relationship between conceptions of English and English learning burnout among nonEnglish learners. The first part of the questionnaire contained 18 items in three dimensions: five items for Exhaustion, seven items for Apathy, and six items for Reduced Self-Efficacy. The second part contained 30 items in seven dimensions: five for Testing, four for Memorizing, three for Drill and Practice, two for Grammar, Vocabulary, and Pronunciation, three for Increasing One's Knowledge, five for Application and Communication, four for Understanding, and four for Seeing in a New Way.

The questionnaire was adapted from two valid and reliable instruments. All questionnaire items were measured with a five-point Likert scale (1 = "complete disagreement" and 5 = "complete agreement").

QUESTIONNAIRE ABOUT ENGLISH LEARNING BURNOUT

Schaufeli et al. (2002) enumerated 132 possible burnout symptoms from individual, interpersonal, and organizational levels. Yang (2015) divided foreign language learning burnout into three dimensions:

- 1. **Emotional Exhaustion:** Sense of excessive pay and emotional resource consumption during foreign language learning
- 2. Apathy: Negative attitude toward foreign language learning
- 3. **Reduced Self-Efficacy:** Decrease in the evaluation of an individual's efficiency and achievement of foreign language learning

As shown in Table 1, there are 18 items on the scale, including five for Exhaustion, seven for Apathy, and six for Reduced Self-Efficacy.

QUESTIONNAIRE ABOUT CONCEPTION OF ENGLISH LEARNING

Zheng et al. (2016) based the first questionnaire on the conception of English learning to assess the conception of science learning by Lee et al. (2008). The eight dimensions included Memorizing, Testing, Drill and Practice, Grammar, Vocabulary, and Pronunciation, Increase One's Knowledge, Application and Communication, Understanding, and Seeing in a New Way. Drill and Practice and Grammar, Vocabulary, and Pronunciation dimensions are closely associated with the distinct feature of language learning (Zheng et al., 2016).

Al-Osaimi and Wedell (2014) noted that communicative competence is the primary purpose of learning a foreign language; hence, Application and Communication emphasizes the communication competence in real life. Understanding refers to the construction of comprehensive language and cultural knowledge. Seeing in a New Way represents the learner's new perspective on the language learning. Eight dimensions are listed and shown in Table 2.

Table 1. Questionnaire on English learning burnout

Factor Names	Numbers	Sample Items
1. Exhaustion	5	I feel sleepy in English class.
2. Apathy	7	It is annoying to remember so many new words.
3. Reduced self-efficacy	6	I doubt whether I can learn English.

Table 2. Questionnaire on conception of English learning

Factor Names	Numbers	Sample Items
1. Memorizing	4	Learning English means remembering what the instructor lectures about in class.
2. Testing	5	I mostly learn English because of the tests.
3. Drill and Practice	3	Learning English means the process of doing a series of drills.
4. Grammar, Vocabulary, and Practice	2	Learning English means acquiring new vocabulary and its appropriate pronunciation.
5. Increase knowledge	3	Learning English means speaking new words and sentences.
6. Application & Communication	5	Learning English means acquiring knowledge and skills to study abroad.
7. Understanding	4	Learning English helps me understand more about other cultures and societies.
8. Seeing in a new way	4	Learning English is a way to better understand multicultural phenomena.

DATA COLLECTION AND DATA ANALYSIS

The participants in this study responded voluntarily and completed the questionnaires anonymously. A total of 363 student responses were analyzed by evaluating the relationship between their conception of English learning and three latitudes of learning burnout.

The data analysis procedure involved the exploratory factor analysis of English learning burnout and the conception of language learning. Then, the correlation between the conception of language learning and English learning burnout was analyzed. Finally, stepwise regression analysis for predicting English learning burnout was conducted where the factors of conception of language learning were considered predictor variables.

RESULT

Exploratory Factor Analysis of English Learning Burnout and Conception of Language Learning

Previous questionnaires were adopted for this article's survey. There is controversy regarding the division of dimensions. Therefore, the topics of factor structure and reliability of investigation were retested. Table 4 shows the results of the exploratory factor analysis for the conception of learning instrument. Principal component analysis and Varimax with Kaiser normalization were used as extraction methods. To determine the conception of English learning, the weight of factor load on related factors should be greater than 0.4. All other factors should be less than 0.4. Thirty items for five factors were retained in the final version of the conception of learning, as shown in Table 3.

The way Chinese students learn English differs from that of international students because the learning of English knowledge starts from vocabulary before transitioning to sentence and grammar. Students must master what they have learned through continuous practice. In Table 3, practice, vocabulary, and knowledge factors are combined as Language Knowledge (LK) (a = 0.91, Mean = 3.67, S.D. = 0.62). Other factors include Memorizing (M) (a = 0.85, Mean = 2.71, S.D. = 0.74), Testing (T) (a = 0.86, Mean = 2.78, S.D. = 0.74), and Application (A) (a = 0.91, Mean = 3.35, S.D. = 0.71). In addition, Understanding and Seeing in a New Way (NEW) (a = 0.94, Mean = 3.56, S.D.

Table 3. Rotated factor loadings and Cranbach's alpha values for the seven factors related to conception of English learning (n = 363)

Factor 1: Memorizing a = 0.85, Mean = 2.71, S.D. = 0.74								
Memorizing 1	.820							
Memorizing 2	.820							
Memorizing 3	.727							
Memorizing 4	.790							
Factor 2: Testing a = 0.86, Mean = 2.78, S.D. = 0.74								
Testing 1		.752						
Testing 2		.745						
Testing 3		.784						
Testing 4		.840						
Testing 5		.608						
Facto	r 3: Language K	nowledge $a = 0.91$, Mean = 3.67, S	.D. = 0.62				
Practice 1			.772					
Practice 2			.746					
Practice 3			.766					
Vocabulary 1			.797					
Vocabulary 2			.729					
Knowledge 1			.655					
Knowledge 2			.701					
Knowledge 3			.525					
	Factor 4: Applica	tion a = 0.91, Me	an = 3.35, S.D. =	0.71				
Application 1				.641				
Application 2				.815				
Application 3				.820				
Application 4				.839				
Application 5				.755				
Factor 5: Und	erstanding and se	eeing in a new way	y a = 0.94, Mean	= 3.56, S.D. = 0.6	7			
Understanding 1					.749			
Understanding 2					.798			
Understanding 3					.808			
Understanding 4					.824			
Seeing in a new way 1					.739			
Seeing in a new way 2					.644			
Seeing in a new way 3					.752			
Seeing in a new way 4					.619			
Note: Overall alpha: 0.89; total variance explained: 70.33%								

= 0.67) were combined. The internal consistency was sufficient for statistical analysis. The total variance explained was 70.33%. The alpha coefficient of this study was around 0.61-0.92 for each factor (overall alpha = 0.89).

The exploratory factor analysis results for English learning burnout are demonstrated in Table 4. Again, the weight of factor load on related factors should be greater than 0.4 to retain items. Consequently, three items were deleted. The other 15 items were retained and grouped into three factors in the final version of the English learning burnout questionnaire. This totaled 70.33% of variation explained. The three factors were Exhaustion (E) (a = 0.89, Mean = 2.84, S.D. = 0.89), Apathy (A) (a = 0.85, Mean = 1.98, S.D. = 0.69), and Reduced Self-Efficacy (RS) (a = 0.89, Mean = 3, S.D. = 0.89). The alpha coefficient of this study was around 0.61-0.92 for each factor (overall alpha = 0.92), indicating satisfactory internal consistency of assessing students' English learning burnout.

Table 5 shows the reliability and validity test of all the variables in the questionnaire. The Cranach's coefficients of the variables are more significant than 0.7, which offers good scale reliability. The validity test is often adopted by convergent and discriminant validity tests. The convergent validity test calculates composite reliability (CR) and average extracted variance (AVE). The scale is indicated with a good convergent validity by CR greater than 0.7 and AVE greater than 0.5. Good discriminant validity required the square root of AVE must be greater than the correlation coefficient of each variable. Table 5 shows that all variables are between 0.85 and 0.94, AVE of all variables is between 0.63 and 0.72, which represents good convergent validity of the scale. In addition, Table 5 shows the square root of AVE of all variables is much greater than their correlation coefficients, which represent good discrimination validity.

Table 4. Rotated factor loadings and Cronbach's alpha values for the three factors related to English learning burnout

Factor 1: Exhaustion a = 0.89, Mean = 2.84, S.D. = 0.89					
Exhaustion 1	.680				
Exhaustion 2	.819				
Exhaustion 3	.709				
Exhaustion 4	.819				
Exhaustion 5	.769				
Facto	or 2: Apathy a = 0.85, Mea	an = 1.98, S.D. = 0.69			
Apathy 1		.824			
Apathy 2		.757			
Apathy 3		.757			
Apathy 5		.659			
Apathy 6		.717			
Factor 3: F	teduced Self-Efficacy a =	0.89, Mean = 3, S.D. = 0.8	89		
Reduced Self-Efficacy 1			.759		
Reduced Self-Efficacy 2			.777		
Reduced Self-Efficacy 3			.649		
Reduced Self-Efficacy 5			.757		
Reduced Self-Efficacy 6			.802		
Note: Overall alpha: 0.92; total variance explained: 70.33%					

Table 5. Reliability and validity of variables

Variable	Loading	Cronbach	CR	AVE
Exhaustion	0.79-0.87	0.89	0.92	0.70
Apathy	0.64-0.90	0.85	0.88	0.60
Reduced Self-Efficacy	0.77-0.91	0.90	0.92	0.66
Memorizing	0.77-0.87	0.85	0.89	0.69
Testing	0.55-0.89	0.86	0.90	0.65
Language Knowledge	0.71-0.87	0.91	0.93	0.63
Application	0.83-0.89	0.91	0.93	0.74
Understanding and Seeing in a New Way	0.79-0.90	0.94	0.95	0.72

CORRELATION BETWEEN CONCEPTION OF LANGUAGE LEARNING AND ENGLISH LEARNING BURNOUT

Pearson's coefficient was used to calculate the correlation between students' conception of English learning's relationship with English learning burnout. The result is shown in Table 6. The conception of learning Testing factor was significant concerning factors of English learning burnout. The coefficients of the correlation between this factor and all three dimensions of language learning burnout were 0.569~(p<0.01),~0.375~(p<0.01),~0.541(p<0.01),~respectively. The Memorizing factor in the conception of learning had a positive correlation with all the factors of the language learning burnout (except for Apathy). On the contrary, Understanding and Seeing in a New Way had a negative correlation with all the language learning burnout factors: Exhaustion (-0.257, p < 0.01), Apathy (-0.430, p < 0.01), and Reduced Self-Efficacy (-0.176, p < 0.01). Language Knowledge and Application also had a negative correlation with the factors of English learning burnout (except for Reduced Self-Efficacy).

The statistically significant positive correlation between Testing and all factors of English learning burnout reflected that the learners who conceptualized learning English as getting higher scores to pass examinations were more likely to experience all dimensions of learning burnout. Moreover,

Table 6. Correlation between conception of language learning and English learning burnout (n = 363)

	Exhaustion	Apathy	Reduced Self-Efficacy	Memorizing	Testing	Language Knowledge	Application	Understanding and Seeing in a New Way
Exhaustion	(0.83)							
Apathy	.490**	(0.77)						
Reduced Self- Efficacy	.620**	.506**	(0.81)					
Memorizing	.311**	.065	.379**	(0.83)				
Testing	.569**	.375**	.541**	.510**	(0.8)			
Language Knowledge	155**	257**	009	.057	084	(0.79)		
Application	145**	349**	082	.018	182**	.517**	(0.86)	
Understanding and Seeing in a New Way	257**	430**	176**	151**	337**	.674**	.678**	(0.84)

learners with a conception of Understanding and Seeing in a New Way were more likely to reduce their Exhaustion and Apathy. At the same time, these learners would enhance their Reduced Self-Efficacy. It may also show a tendency that Exhaustion and Apathy were reduced by Language Knowledge and Application. Additionally, if learners perceived that learning English is Memorizing, they were more likely to get bored during the learning of English.

STEPWISE REGRESSION ANALYSIS FOR PREDICTING ENGLISH LEARNING BURNOUT

Finally, this study's stepwise regression analysis used learners' conception of language learning to predict their English learning burnout. Table 7 shows the regression analysis results. It is interesting to see that Testing is a significant predictor for all factors of English learning burnout. Memorizing positively predicts Reduced Self-Efficacy ($\beta = 0.140$, sig. = .007) and negatively predicts Apathy ($\beta = -0.160$, sig = 0.003). Understanding and Seeing in a New Way is a negative factor in explaining Apathy ($\beta = -0.338$, sig = 0.00). Language Knowledge is also a negative predictor of Exhaustion ($\beta = -0.086$, sig = 0.048). Consistent with the correlation results, Memorizing plays different roles in predicting learning burnout.

In sum, the stepwise regression results suggest that Testing played influential roles in predicting learners' burnout. Memorizing is a double-edged factor for explaining learners' burnout. Understanding and Seeing in a New Way may be helpful when learners show apathy in language learning. Language Knowledge may reduce burnout when learners show exhaustion in studying English.

CONCLUSION

The results suggest the need to reinterpret learners' perceptions of testing because it may be a prerequisite for burnout in English learning. If learners view learning English as Testing, they may experience more English learning burnout.

English language learning has been influenced by the history of examinations in Chinese society. Succeeding in English tests was regarded as the most crucial purpose in language learning, further impacting learners' choice of language learning strategies. However, the present study suggests that both policymakers and English-language instructors should be aware of the side-effects of a test-

Table 7. Stepwise regress	ion model for prodicting	a otudonto' loornino	humaut (n = 262)
Table 1. Stepwise regress	ion model for bredicting	a students Tearning	i burnout (n – 303)

Learning Burnout		В	SD	β	Т	Sig	\mathbb{R}^2
Exhaustion	Testing	.588	.049	.525	11.915	.000	348
Exhaustion	Language Knowledge	123	.062	086	-1.986	.048	.355
	Constant	1.732	.286				
	Understanding and seeing in a new way	353	051	338	-6.929	.000	.194
Apathy	Testing	.291	.049	.332	5.891	.000	.247
	Memorizing	151	.050	160	-3.014	.003	.266
	Constant	2.781	.269				
Reduced Self- Efficacy	Testing	.519	.058	.466	8.886	.000	.293
	Memorizing	.168	.062	.140	2.728	.007	.307
	Constant	1.038	.215				

oriented culture on English learning. It may also negatively correlate with learning burnout. The formative assessment and comprehensive test, including speaking, should be encouraged. Language instructors should also place more emphasis on students' performance on the application of language.

Memorizing has both positive and negative impacts on learning burnout. It may be related to the Chinese social-cultural context. For Chinese students, memorizing is a very effective method for learning English. Students can learn English by memorizing new words, grammar rules, etc., which can relieve negative emotions and boost confidence in learning. However, by overusing such a learning strategy, learners get bored and lost in language learning, which will arouse negative emotions. Thus, the appropriate adoption of Memorizing at different learning stages is important. Memorizing might be an effective tool for beginners; however, it may be ineffective for advanced learners.

Language Knowledge and Understanding and Seeing in a New Way can alleviate learning burnout. Language can refresh learners and relieve burnout caused by exhaustion. Moreover, new perspectives of thinking can make learners more proactive. Hence, language learning should be filled with the practice of language skills; cross-cultural communication should be stressed to encourage learners to view the world in new ways.

ACKNOWLEDGMENT

This work was supported by General Project of the Humanities and Social Sciences oAnhui Universities 2020 "Research on the Influencing Mechanism of Conception of Foreign Language Learning on Foreign Language Learning Burnout" (SK2020JD09); Quality Teaching and Research Project of Anhui Province 2020 "Research on College English Online Teaching Based on POA Theory" (2020JYXM0346); Quality Teaching and Research Project of Anhui Jianzhu University 2020 "Research on College English Online Teaching Based on POA Theory" (2020JY72) and "Research on Coping Strategy to Improve College English online Teaching Quality" (2020JY82); and Quality Teaching and Research Project of Anhui Jianzhu University 2021 "Research and Practice of Blended Oral English Teaching Based on POA Theory" (2021jy77).

REFERENCES

Al-Osaimi, S., & Wedell, M. (2014). Beliefs about second language learning: The influence of learning context and learning purpose. *Language Learning Journal*, 42(1), 5–24. doi:10.1080/09571736.2012.661753

Asikainen, H., Salmela-Aro, K., Parpala, A., & Katajavuori, N. (2020). Learning profiles and their relation to study-related burnout and academic achievement among university students. *Learning and Individual Differences*, 78, 101781. doi:10.1016/j.lindif.2019.101781

Aslan, E., & Thompson, A. S. (2021). The interplay between learner beliefs and foreign language anxiety: Insights from the Turkish EFL context. *Language Learning Journal*, 49(2), 189–202. doi:10.1080/09571736.2018.1540649

Benson, P., & Lor, W. (1999). Conceptions of language and language learning. *System*, 27(4), 459–472. doi:10.1016/S0346-251X(99)00045-7

Charkhabi, M., Azizi Abarghuei, M., & Hayati, D. (2013). The association of academic burnout with self-efficacy and quality of learning experience among Iranian students. *SpringerPlus*, 2(1), 1–5. doi:10.1186/2193-1801-2-677 PMID:24386623

Freudenberg, H.J. (1974). Staff burn-out. *The Journal of Social Issues*, 30(1), 159–165. doi:10.1111/j.1540-4560.1974. tb00706.x

Ghadampour, E., Farhadi, A., & Naghibeiranvand, F. (2016). The relationship among academic burnout, academic engagement and performance of students of Lorestan University of Medical Sciences. *Research in Medical Education*, 8(2), 60–68. doi:10.18869/acadpub.rme.8.2.60

Grant, M. M. (2011). Learning, beliefs, and products: Students' perspectives with project-based learning. *The Interdisciplinary Journal of Problem-Based Learning*, 5(2), 6. doi:10.7771/1541-5015.1254

Horwitz, E. K. (1988). The beliefs about language learning of beginning university foreign language students. *Modern Language Journal*, 72(3), 283–294. doi:10.1111/j.1540-4781.1988.tb04190.x

Jackson, E. R., Shanafelt, T. D., Hasan, O., Satele, D. V., & Dyrbye, L. N. (2016). Burnout and alcohol abuse/dependence among US medical students. *Academic Medicine*, 91(9), 1251–1256. doi:10.1097/ACM.00000000001138 PMID:26934693

Lee, J., Johanson, R. E., & Tsai, C.-C. (2008). Exploring Taiwanese high school students' conceptions of and approaches to learning science through a structural equation modeling analysis. *Science Education*, 92(2), 191–220. doi:10.1002/sce.20245

Lynch, B. J. (2020). Teachers' social and emotional learning beliefs and burnout: The moderating role of emotional intelligence [doctoral dissertation]. Grand Canyon University.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99–113. doi:10.1002/job.4030020205

Mu, D., & Guo, W. (2022). Impact of students' online learning burnout on learning performance: The intermediary role of game evaluation. *International Journal of Emerging Technologies in Learning*, 17(2), 239–253. doi:10.3991/ijet.v17i02.28555

Neumann, Y., Finaly-Neumann, E., & Reichel, A. (1990). Determinants and consequences of students' burnout in universities. *The Journal of Higher Education*, 61(1), 20–31. doi:10.2307/1982032

Pines, A., & Aronson, E. (1988). Career burnout: Causes and cures. Free Press.

Rasheed-Karim, W. (2020). The effect of stressful factors, locus of control and age on emotional labour and burnout among further and adult education teachers in the UK. *International Journal of Emerging Technologies in Learning*, *15*(24), 26–37. doi:10.3991/ijet.v15i24.19305

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71–92. doi:10.1023/A:1015630930326

Sovitriana, R., Santosa, A. D., & Hendrayani, F. (2019). Teacher burnout and self esteem in Tangerang's Junior High School teachers. *International Review of Management and Marketing*, 9(2), 26.

International Journal of Cognitive Informatics and Natural Intelligence

Volume 16 • Issue 1

Tao, Y. (2015). Research on the Relationship between Foreign Language Learning Burnout and Motivation. Beijing: Science Press.

Tsai, C. C. (2004). Conceptions of learning science among high school students in Taiwan: A phenomenographic analysis. *International Journal of Science Education*, 26(14), 1733–1750. doi:10.1080/0950069042000230776

Victori, M., & Lockhart, W. (1995). Enhancing metacognition in self-directed language learning. *System*, 23(2), 223–234. doi:10.1016/0346-251X(95)00010-H

Xie, K., & Huang, K. (2014). The role of beliefs and motivation in asynchronous online learning in college-level classes. *Journal of Educational Computing Research*, 50(3), 315–341. doi:10.2190/EC.50.3.b

Yokoyama, M., & Miwa, K. (2020). Relationship between goal orientation, conception of learning, and learning behavior. In *Online teaching and learning in higher education* (pp. 23–39). Springer. doi:10.1007/978-3-030-48190-2 2

Zheng, C., Liang, J. C., Yang, Y. F., & Tsai, C. C. (2016). The relationship between Chinese university students' conceptions of language learning and their online self-regulation. *System*, *57*, 66–78. doi:10.1016/j. system.2016.01.005

Minghui Yang is currently a PhD student in University of Science and Technology in China and a lecturer in school of foreign studies in Anhui Jianzhu University. He received bachelor's and master's degree in Anhui University and his research covers a wide range including linguistics, higher education and foreign language teaching. Now he especially focused on the language research by digital tools and mathematical models and preferred the mixed approaches combining qualitative and quantitative study.

Yuhui Zhai is currently an associate professor in school of foreign studies in Anhui Jianzhu University. Her research interest covers foreign language teaching and comparative literature. She received her bachelor's degree in Anhui Agricultural University and bachelor's degree in Anhui University. Her research mainly focused on language and translation study. Her translated books had won a lot of readers and her publications also preferred language study by digital approaches.