The Influencing Mechanism of Psychological Empowerment on Learning Satisfaction and Learning Performance in Blended Learning Environment – An Empirical Analysis

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Abstract. Gen Z students are very different compared to the previous generations' students. The traditional teaching methods can no longer meet their learning needs instead by learning through the Internet. Therefore, teachers must use the Internet to create an environment suitable for their learning. The blended teaching method is a new model that can meet the learning needs of Gen Z. This study aims to explore how the four dimensions of psychological empowerment can be used in a blended learning environment to improve students' creativity, learning satisfaction, and learning performance. The study collected 356 valid questionnaires, the proposed conceptual model was validated using the structural equation model. The reliability of this study is greater than 0.7, and the validity is tested by CR and AVE, which meet the requirements of scholars. The results show that in the four dimensions of psychological empowerment. Firstly, enhancing students' learning competence, and understanding the meaning and impact of learning can help improve students' satisfaction. Secondly, enhancing students' learning competence, learning self-determination, and learning impact has a positive impact on students' creativity. Thirdly, when students have higher learning competence and impact, it helps to improve students learning performance. Fourthly, when students are more creative and have learning satisfaction with the course, they can improve their learning performance.

Keywords: psychological empowerment · learning competence · self-determination · learning impact · learning satisfaction · students' creativity · learning performance

1 Introduction

Each generation of students has its own characteristics. Today's college students belong to the first year of the Internet, which is Generation Z (born after 1997). They are very different from the students in the past because they belong to the Internet generation, they are very used to communicating, sharing, and learning with others in the online world, but they do not like to communicate with people face-to-face, so traditional teaching methods are no longer suitable for this generation of students. Scholars have proposed a

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blended learning method that combines online and offline, using online teaching videos to allow students to flexibly arrange their study time, and using group discussions and presentations in the classroom to promote students' higher-order thinking skills and knowledge construction [12].

When designing the teaching environment, teachers should stimulate students' enthusiasm for learning and let students gain a sense of achievement in the course. That said, it is important for teachers to create an empowering environment. In higher education in particular, empowerment can be used to improve the learning experience for students. However, most colleges and universities are more concerned with engagement and even consider empowerment to be engagement. Furthermore, learning performance and creativity are variables that are valued when discussing learning. Many scholars have proposed that blended learning can help improve academic performance [25]. However, few scholars have explored the impact of psychological empowerment and creativity on learning performance in blended learning, so this study hopes to supplement the deficiencies of this part of the theory. Learning satisfaction has been an important variable when discussing learning performance, and we were included in this study.

The subsequent sections of this study first review the related literature that propose the theoretical foundation. Then the research hypotheses and data collection method are presented. After that, the results and findings are reported, and conclusions are drawn.

2 Literature Review and Hypotheses Development

2.1 The Positive Effects of Psychological Empowerment on Learning Satisfaction

The definition of psychological empowerment is to increase the internal work motivation of the individual, through the individual's evaluation or cognition of the meaning of the work, so that the individual can actively and continuously complete the organizational goals. Psychological empowerment includes four dimensions: work meaning, work competence, self-determination, and impact [21].

Psychological empowerment has been actively used in corporate research and less used in teaching, but schools are small societies, and students' work in schools is learning. Therefore, this study introduces psychological empowerment into teaching and divides its dimensions into (1) Learning meaning (LM) represents the degree to which personal values and beliefs conform to curriculum requirements [7]. (2) Learning competence (LC) refers to the skills that an individual believes he or she can complete course tasks [3]. (3) Learning self-determination (SD) refers to an individual's initiation and ongoing autonomy over curriculum behaviour and curriculum procedures [4]. (4) Learning impact (LI) refers to the degree of influence that individuals have on the strategic direction, implementation procedures of the course group, and results of group operations in the curriculum [2].

Learning satisfaction (LS) is the degree to which liking for learning activities, or the degree to which desires and needs are satisfied. That's students' feelings, sensations, or emotional responses to their learning [19]. Researchers have shown that psychological empowerment makes people feel pleasurable and becomes more productive, thus having a positive effect on learning satisfaction [15]. In the blended learning course, the teacher's authorization enables students to truly participate in the learning process, to meet the

needs of different students, psychologically they will feel recognized and motivated to learn, and they will have a positive attitude in learning. Therefore, this study proposes:

H1: Psychological empowerment has a positive influence on learning satisfaction.
H1-1: Learning meaning has a positive influence on learning satisfaction.
H1-2: Learning competence has a positive influence on learning satisfaction.
H1-3: Learning self-determination has a positive influence on learning satisfaction.
H1-4: Learning impact has a positive influence on learning satisfaction.

2.2 The Positive Effects of Psychological Empowerment on Student's Creativity

The far-reaching effect of psychological empowerment is to stimulate students' creativity. Scholars have also demonstrated that psychological empowerment has a positive effect on employee creativity [26]. When students' creativity improves, it can be shown in the improvement of students' ability to discover, solve, and comprehensively apply. It helps to promote students' higher-order thinking skills and knowledge construction. Since most scholars discuss the impact of psychological empowerment on creativity, and few scholars discuss the impact of psychological empowerment on creativity, including the learning meaning, learning competence, learning self-determination, and learning impact of four construct, this study is based on scholars who proposed that psychological empowerment will affect creativity. Based on that, we boldly hypothesize that the four construct of psychological empowerment will have a positive impact on creativity. This study proposes the following hypotheses:

H2: Psychological empowerment has a positive influence on students' creativity.
H2-1: Learning meaning has a positive influence on students' creativity.
H2-2: Learning competence has a positive influence on students' creativity.
H2-3: Learning self-determination has a positive influence on students' creativity.
H2-4: Learning impact has a positive influence on students' creativity.

2.3 The Positive Effects of Psychological Empowerment on Learning Performance

Many studies have suggested that psychological empowerment can help improve learning performance (e.g.: Tseng et al. [24]). When employees use psychological empowerment to improve the motivation process of employees' intrinsic motivation, it is a process of coordinating the external behaviour and intrinsic motivation of authorized employees through the encouragement of the organization, which will help to improve work performance. However, most scholars have explored the impact of overall psychological empowerment on performance, and less explored the impact of the four constructs of psychological empowerment on learning performance. Therefore, because that psychological empowerment can help improve learning performance, this study puts forward the following hypotheses:

H3: Psychological empowerment has a positive influence on learning performance.
H3-1: Learning meaning has a positive influence on learning performance.
H3-2: Learning competence has a positive influence on learning performance.

H3-3: Learning self-determination has a positive influence on learning performance.
H3-4: Learning impact has a positive influence on learning performance.

2.4 The Positive Effects of Learning Satisfaction and Students' Creativity on Learning Performance

Learning satisfaction refers to the sense of satisfaction and positive emotions in the learning process. It emphasizes students' individual subjective feelings about course content, teaching methods, learning process and results [8]. As a younger generation, students value equal opportunities, enjoy the personal growth brought by opportunities, and like clear direction and autonomy [11]. In curriculum learning, psychological empowerment enables these to be realized, and the improvement of learning satisfaction also effectively improves students' leadership, enabling them to perform learning tasks more effectively, improving learning efficiency, and having a positive impact on learning performance [20]. Therefore, this study proposes:

H4: Learning satisfaction has a positive influence on learning performance.

Creativity includes the ability to result in new-born solutions [14], that is, the ability of students to apply what they have learned to generate novel solutions in their learning. Its constituent skills need to be practiced through course group activities to enhance their abilities [18]. Creativity is a process of being able to identify a problem, find a solution, make a guess or make a hypothesis, try to find a result, and finally communicate the result [17]. Students who have mastered this ability are more likely to excel in their studies by applying knowledge in courses and putting forward their own views and solutions. Therefore, this study proposes the following hypothesis.

H5: Student's creativity has a positive influence on learning performance.

3 Research Methodlogy

3.1 The Measures

This study utilization the measurement items from former studies and all scales included multiplex items. First, the measurement of psychological empowerment is divided into four dimensions, comprises 12 items that were used in the research of Spreitzer [22]. Second, the measurement of students' learning satisfaction comprises 3 items that were used in the research of Ghiselli et al .[6]. Third, students' creativity was measured by 4 items adopt from Tierney et al. [22]. Lastly, learning performance is measured using 3 item scale rewrites from Kuvaas et al. [13]. A total of 22 measurement items for the four constructs shown in Table 1 were measured using seven-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree).

3.2 Data Collection and the Sample

In terms of curriculum design, first, before the formal class, teachers should explain to students that the use of psychological teaching is to enable students to understand the

meaning of learning, to cultivate students' ability to collect information, solve complex problems and teamwork, and to achieve consensus, let students understand the planning meaning and arrangement of the course. Second, let students choose their own course group members. Third, divide the weekly teaching content into 3–4 videos, each video no longer than 15 min. Students will need to view these course content on the learning website prior to class. Fourth, leave 1–3 questions after watching each video. Enquire students to discuss in groups and come up with solutions before class. Fifth, the content of the textbook is first discussed in the class and a consensus is reached, then the groups share the problems/solutions they encountered in the group discussion with the other groups and discuss again for better solutions.

Data for this study were collected at a university in Guangzhou, China. Students studying in business schools constitute the target group for this study. A total of 366 students completed the survey. All students are from four different classes but study the same subject (Strategic Management) in the same semester (i.e., September 2021 to December 2021). This course uses the same syllabus, teachers and learning outcomes. The questionnaire for this study was anonymous. According to research ethics, investigators will not force respondents to fill out questionnaires if they have distrust about the study and are reluctant to answer. A total of 356 valid questionnaires were recovered in this study, with a recovery rate of 97.3%. Among them, 10 respondents had missing values, and further analysis was abandoned due to incomplete answers.

4 Empirical Results

4.1 The Measurement Model

Confirmatory factor analysis was used to verify the factor loadings of the study variables in this study and to evaluate the model fit (see Table 1). The reliability and validity of the study are very important. In this study, Cronbach's α test reliability was used, and the value was between 0.818 and 0.726, and the α value greater than 0.7 met the requirements [16].

In the validity section, this study used CR and AVE for examination. The CR estimates for this study ranged from 0.749 to 0.821, with all estimates greater than 0.7. The AVE values between 0.527 and 0.733 were all greater than 0.5 [1], all in line with the requirements of Hair et al. Also, greater than the squared correlation of the correlated variables. Therefore, discriminant validity is also important [5]. The above analysis represents that the measurement model had very good convergent validity (see Table 2).

The CFA model was considered fitting to conform to the standards suggested by Hu and Bentler [9]. Besides, the χ^2/df ratio of less than 3.0 was used as the common decision rule of an appropriate model suitable. Other measures of goodness of fit as recommended by Kline [10]. (RMSEA = 0.059, GFI = 0.88, IFI = 0.97, RMR = 0.073) indicate that the hypothesized model evident the well of empirical data.

4.2 The Structural Model

This research used the SEM to examines the model as relationships between psychological empowerment, learning satisfaction, and students' creativity as well as learning

Table 1. Measurement model and confirmatory factor analysis.

Factor Cronbach's α	Items/ Standardized Factor Loadings		AVE	CR	Mean	SD
Learning satisfaction α = 0.820	LS1	0.855	0.733	0.813	5.82	0.670
	LS2	0.847			5.76	0.781
	LS3	0.868			5.74	0.744
Students' creativity α = 0.818	SC1	0.818	0.647	0.821	5.37	1.064
	SC2	0.790			5.63	1.159
	SC3	0.854			5.58	1.124
	SC4	0.754			5.39	1.122
Learning performance α = 0.812	LP 1	0.844	0.726	0.816	5.81	0.821
	LP 2	0.890			6.03	0.854
	LP 3	0.823			5.70	0.863
Learning meaning α = 0.749	LM1	0.709	0.619	0.796	5.18	1.030
	LM2	0.815			4.90	0.993
	LM3	0.832			4.99	1.072
Learning competence α = 0.770	LC1	0.758	0.591	0.749	5.77	1.185
	LC2	0.738			6.10	1.137
	LC3	0.796			6.20	1.129
Learning Self-determination α = 0.726	SD1	0.829	0.527	0.768	5.66	0.991
	SD2	0.835			5.18	1.067
	SD3	0.747			5.15	1.042
Learning Impact α = 0.783	LI1	0.847	0.696	0.785	5.68	1.172
	LI2	0.857			5.90	1.184
	LI3	0.799			5.58	1.132

performance. The outcome of the analysis is as follow: the RMSEA 0.058, under the cut-off point of 0.08, the chi-square/degrees of freedom(χ^2/df) ratio of 2.15, which is less than 3, the CFI is 0.97, and NFI is 0.96, both of which are over of 0.90 [9]. Therefore, the measurement model showed a satisfactory goodness-of-fit index. Among 4 hypotheses are not supported (Table 3).

First, Self- determination has no significant effect on learning satisfaction. Due to the majority decision-making in group discussions, it is difficult for someone personal opinions to always gain the dominance of the group, which will inevitably make students feel frustrated, thus they cannot feel the learning satisfaction of the course. Therefore, it is assumed that H1-3 does not support, and H1 is partially supported.

Second, learning meaning has no significant effect on creativity, which is not supported by hypothesis H2-1. When students cannot understand the significance of their

Table 2. E correlation of study variables.

Constructs	1	2	3	4	5	6	7
Learning meaning	0.572						
Learning competence	0.214	0.608					
Self-determination	0.106	0.229	0.592				
Learning impact	0.110	0.297	0.285	0.752			
Students' creativity	0.095	0.113	0.114	0.039	0.923		
Learning performance	0.099	0.376	0.120	0.245	0.059	0.733	
Learning satisfaction	0.091	0.265	0.077	0.320	0.071	0.468	0.791

Table 3. Hypothesis test results.

Hypothesized path	Standardized estimate	Hypothesis supported
H1-1: LM → LS	0.22**	YES
H1-2: LC → LS	0.55*	YES
H1-3: SD → LS	0.25	NO
H1-4: LI → LS	0.19*	YES
H2-1: LM → SC	0.69	NO
H2-2: LC → SC	0.76***	YES
H2-3: SD → SC	0.49***	YES
H2-4: LI → SC	0.32*	YES
H3-1: LM → LP	0.63	NO
H3-2: LC → LP	0.89**	YES
H3-3: SD → LP	0.42	NO
H3-4: LI → LP	0.30*	YES
H4: LS → LP	0.69*	YES
H5: SC → LP	0.65***	YES

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

existence to the group and the course in group activities, they don't recognize their own abilities and feel that they have not contributed to the group, which will reduce their affirmation of their own creativity. Third, learning meaning and self-determination have no effect on learning performance. Because when students cannot understand the meaning of learning strategic management to them in the course and group discussion, in this way that they don't understand the meaning of existence in the group, and their opinions cannot be recognized by other group members, student's will confidence was

undermined, and felt that couldn't learn the course well, like this student's learning performance would be poor. Therefore, assuming that H3-1 and H3-3 are not supported, H3 is partially supported.

5 Conclusion, Implications, Limitations and Future Research

5.1 Conclusion

The generation Z has entered the university, they are very different from the previous generation students, especially they are used to living in the online world, they like to arrange learning matters on their own, expect a sense of achievement, and teachers need to use theirs familiar teaching methods to improve learning performance effectively. Therefore, this study combines online and offline blended learning environments to explore the learning meaning, learning competence, learning self-determination, learning impact, and other aspects of psychological empowerment, as well as the impact of learning satisfaction and student creativity on learning performance.

This study found that in the psychological empowerment on learning satisfaction, teachers should be good at using learning meaning, learning competence, and learning impact to improve students' learning satisfaction. Furthermore, when students feel that their learning competence has improved, they have self-determination and learning impact in the group, they will feel that they are essential in the organization, and their willingness to assist the group succeed in the course will help improve students' creativity. Moreover, students learning competence and impact will help to improve their learning performance.

5.2 Theoretical Implications

Current generation Z students like to learn knowledge through social media. The challenges faced by teachers are how to use blended learning to create a learning environment that generation Z students like, and how to use psychological empowerment to increase students' interest in learning in order to have good learning performance. First, in the course design part, it is recommended that teachers record the course within 15 min every week and place it on the online learning platform so that students can understand the main content of the course before class. Teacher can use 3–4 questions to let students discuss in groups before class so that students can work together to find suitable answers and share or discuss with other groups during the class, which helps to improve students' understanding of the content of the class. Second, students' self-influence should be used well, because influence has a significant impact on satisfaction, creativity, and learning performance. Gen Z students are also more concerned than students of other generations about whether they can be active in the community and whether they are important in the community, thus teachers can make students feel that they have influence and control over group activities. Allowing them to feel recognized in the course will help improve student satisfaction, creativity, and learning performance.

5.3 Limitations and Future Research

This study strives to be rigorous and comprehensive in all respects but still has the following limitations: First, this study specifically examined the impact of psychological empowerment on the academic performance of Gen Z students in a blended learning environment, so this study can only explore the current research framework. Second, the selection of only Gen Z students from a university in Guangzhou in this study also resulted in another limitation of the relatively small sample size. Third, geographic and time constraints are also limitations of the study. Although the model has a good ability to predict students' learning performance in a blended learning environment, other factors can be added to enhance the predictive ability of the proposed model. Finally, the research focused on strategic management courses, and results may vary from course to course.

References

1. Anderson, J. C. & Gerbing D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. J. Psychological Bulletin. 103(3), 411-423.
2. Ashforth, B, E. (1989). The experience of powerlessness in organizations. J. Organizational Behavior and Human Decision Processes. 207–242.
3. Bandura, A. (1989). Human agency in social cognitive theory. J. American Psychologist. 44(9), 1175 – 1184.
4. Deci, E. L., Connell, J. P. & Ryan, R. M. (1989). Self-determination in a work organization. J. Journal of Applied Psychology. 74(4), 580–590.
5. Fornell, C. & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. J. Journal of Marketing Research. 18(1), 39-50.
6. Ghiselli, R. F., La Lopa, J. M. & Bai B. (2001). Job satisfaction, life satisfaction, and turnover intent. J. Cornell Hotel and Restaurant Adminstration Quarterly. 42(2), 28–37.
7. Hackman, J. R & Oldham, G. R., 1980. Work redesign. MA: Addison-Wesley.
8. Huang, C. H. (2021). Using PLS-SEM model to explore the influencing factors of learning satisfaction in blended learning. J. Education Sciences. 11(5), 249.
9. Hu, L.T. & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. J. Structural Equation Modeling: A Multidisciplinary Journal. 6(1): 1–55.
10. Kline, R.B., 1998. Principles and Practice of Structural Equation Modeling. Guilford Press, New York.
11. Kong, H., Sun, N. & Yan, Q. (2016). New generation, psychological empowerment: Can empowerment lead to career competencies and career satisfaction?. J. International Journal of Contemporary Hospitality Management. 28(11), 2553–2569.
12. Kong, S. C. (2014). Developing information literacy and critical thinking skills through domain knowledge learning in digital classrooms: An experience of practicing flipped classroom strategy. J. Computers & Education. 78, 160–173.
13. Kuvaas, B. & Dysvik, A. (2009). Perceived investment in employee development, intrinsic motivation and work performance. J Human Resource Management Journal. 19, 217-236.
14. Lubart, T. & Guignard, J. H., 2004. The Generality-Specificity of Creativity: A Multivariate Approach. In: Sternberg, R. J., Grigorenko, E. L., Singer, J. L. (Eds.), Creativity: From potential to realization. American Psychological Association, Washington.
15. Muthu, K. K. & Rama, M. (2015). An Investigation of Relationship between Psychological Empowerment and Job Satisfaction. J. Journal of Contemporary Research in Management. 10(1), 1–15.

16. Nunnally, J.C., 1978. Psychometric Theory, McGraw-Hill. New York, 2nd ed.
17. Penick, J.E., 1992. Teaching for Creativity. In: Reay, J., George J. (Eds), Education in Science and Technology for Development: Perspectives for the 21st Century Trinidad and Tobago. ASBIT, Germany..
18. Runco, M. A.,2004. Creativity as an Extracognitive Phenomenon. In: Shavinina, L. V., Ferrari M. (Eds.), Beyond Knowledge: Extracognitive Aspects of Developing High Ability. Mahwah, N.J. : L. Erlbaum Associates, NJ.
19. Smith, P. C., Kendall, L. M. & Hullin, C. L., 1969. The measurement of satisfaction in work & retirement, RandMcnally. Chicago.
20. Solansky, S.(2013). Wisdom Development: A Fear of Foolishness Framework for Leaders. J. Academy of Manegement. 2013(1).
21. Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. J. Academy of management Journal. 38(5), 1442-1465.
22. Spreitzer, G.,2008. Taking Stock: A Review of More Than Twenty Years of Research on Empowerment at Work. In: Barling, J., Cooper, C. L. (Eds.), The SAGE Handbook of Organization Behavior: Volume One: Micro Approaches. SAGE Publications Ltd, UK.
23. Tierney, P., Farmer, S. M. & Graen, G. B. (1999). An examination of leadership and employee creativity: the relevance of traits and relationships. J. Personnel Psychology. 52(3), 591-619.
24. Tseng, L.Y., Wei, C.F. & Zhang, Y.Y., 2021. Exploring the influence of psychological empowerment on student's learning performance in a blended learning environment based on the structural equation model. J. *2nd International Conference on Artificial Intelligence and Education (ICAIE)* .Dali, China.
25. Victoria. L. M., Carmen, P. M. & Rodriguez-Ariza, L. (2011). Blended learning in higher education: students' perceptions and their relation to outcomes. J. Comput. Educ. 56, 818–826.
26. Zhang, X., & Bartol, K. M. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. J. Academy of Management Journal. 53(1), 107-128.