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Empirical research on the psychological contract of physical education teachers in high school of China

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ABSTRACT

Purpose: based on the currently complex psychological contract issues of physical education (P.E.) teachers in high school, we intend to discuss with our peers about how to improve their mental health. Methods: with a total of 16 experts and 80 PE teachers as experimental subjects, analysis was made on scores of their psychological contract index by means of literature, interviews, questionnaires, comparative analysis, mathematical statistics and logical reasoning. Conclusions: psychological contracts of high school PE teachers include "responsibilities of high school PE teachers" and "responsibilities of high schools"; responsibilities of high school PE teachers involve three dimensions, namely transactional norm contract, interpersonal relation contract and innovation contract, while responsibilities of high schools involve basic benefit contract, development contract and balance contract; the overall situation for the psychological contracts of high school PE teachers is just so-so, ranked in the following order based on importance: development contract, basic benefit contract, transactional norm contract, interpersonal relation contract, balance contract and innovation contract.

KEYWORDS

China; High school; Physical education teachers; Psychological contract.



INTRODUCTION

The development of psychological contract can date back to Hawthorne experiments by Professor Mayo in 1920s^[1]. Prior to that, what assumed dominance was Taylor's scientific management concept, which linked one's work with income out of the assumption of "economic man". However, many studies later show that, one's work is also influenced by other factors, such as morale, sense of belonging and effective management. The concept of "psychological contract" was first introduced by Argyris in his book "Understanding Organizational Behavior" composed in 1960^[2]. It was meant to describe the relationship between employees and employers. But Argyris didn't give clear definitions of "psychological contract", nor did he define its scope. After investigating its definitions given by former researchers, we assume that psychological contract is a subjective mutual agreement on individuals' contributions to organizations and organizations' return to them. Specifically, when it comes to the PE teachers in general high school, the psychological contract means the responsibilities and obligations shouldered by school for individuals and vice versa, as well as the rights enjoyed by the two sides. For the relativity of the rights and obligations between the two sides, the mutual responsibilities and obligations are supposed to be the core of the psychological contracts of high school PE teachers. Based on such understanding, we assume the psychological contracts include two aspects of responsibilities and obligations on the part of high schools and PE teachers respectively^[3]. These two aspects of responsibilities and obligations are subjective ones instead of objective or actual ones. Researches on the psychological contract of high school PE teachers in China fall into three types: firstly, there is a certain proportion of researches in terms of the importance, necessity, strategies and suggestions of the psychological contract of high school PE teachers in China; secondly, there is a certain number of local researches conducted in terms of the psychological contract of high school PE teachers under different cultural backgrounds; thirdly, there is quite limited number of the series of empirical researches on the psychological contract of high school PE teachers. Hopefully, this paper, which conducts empirical research on indexes constituting dimensions of the psychological contract of high school PE teachers, is designed to offer help to organizations, experts and leaders concerned^{[4] [5] [6]}.

RESEARCH OBJECTS, METHODS AND DATA ACQUISITION

Research objects

Research objects for special and expert interviews

16 experts from four universities (Beijing Sport University, Shanghai University of Sport, Shenyang Sport University and Guangzhou Sport University) were selected according to their popularity among the sport universities in China and geographical advantage distribution in Zhejiang Province. Interview surveys were made on 16 subjects including experts and leaders in these universities with the experts there taken as research objects (Table 1).

Table 1: Basic Features of the Specially Interviewed Personnel (n=16)

Index	Category	Subject Number	Proportion (%)
Universities	Beijing Sport University	6	37.5
	Shanghai University of Sport	5	31.25
	Shenyang Sport University	3	18.75
	Guangzhou Sport University	2	12.5

Research objects for questionnaires

80 PE teachers from 16 high schools (Nanchang No.2 Middle School, Ji'an No.1 High School, Yongxin Ren Bishi High School, the Attached Middle School to Jiangxi Normal University, Nanjing Foreign Language School, Wuxi No.1 Senior High School, Changzhou Senior High School of Jiangsu Province, Shenyang Hong Qiao Middle School, An Shan No.1 Senior Middle School, Dalian No.8 High School, Hainan Middle School, Sanya No.1 Middle School, the High School Affiliated to Renmin University, Beijing No.2 Middle School, High School Affiliated to Fudan University, Shanghai High School) in four provinces and two municipalities (Jiangxi Province, Jiangsu Province, Liaoning Province, Hainan Province, Beijing Municipality and Shanghai Municipality) were selected based on the reasonable geographical distribution of China and for research convenience. Pre-test questionnaires were conducted on these 80 PE teachers with the PE teachers in the 16 high schools taken as research objects (Table 2).

Table 2: Basic Features of Personnel for the Pre-test Questionnaires (n=80)

Index	Category	Subject Number	Proportion (%)
Gender	Male	56	70
	Female	24	30
Age	under 30	16	20
	31-40	26	32.5
	41-50	28	35
	above 51	10	12.5
Title	Senior Teacher	4	5
	First-Grade Teacher of Secondary School	12	15
	Second-Grade Teacher of Secondary School	48	60
	None	16	20
Educational Background	Master	4	5
	Bachelor	45	56.25
	Junior College	26	32.5
	Technical Secondary School or below	5	6.25

RESEARCH METHODS

Literature method

This paper tries to acquire research literature at home and abroad as much as possible and absorb and digest existing achievements about psychological contract from the literature. In this way, we can gain further understanding of the frontier and development of theories about psychological contract, especially the theories and methods adopted by foreign scholars. We have also learned from existing research results and methods. Under these conditions, we put forward the theoretic framework and hypothesis of this paper and look for useful reference for measurement scale data of each concept in this empirical research.

Interview method

Interview is mainly used to make preliminary verification of the psychological contract design and make further adjustments by learning from the experience of experts and other personnel concerned. The interview results and suggestions proposed later lay solid foundations for the effectiveness of questionnaire content in this paper.

Questionnaire method

Questionnaire is an important research method. We discussed the measurement scales of each variable constituting the empirical research of this paper, with large scale of questionnaires used to verify the research design. Therefore, the establishment and results of this paper are provided with reliable guarantee. Each item is scored based on a scale of 1 to 5 where 1 means very unimportant, 2 means unimportant, 3 means average, 4 means important and 5 means very important. In another word, scores increase with the importance.

Comparative analysis method

Comparison is the most common thinking method for humans to know, distinguish and identify the differences and similarities of matters so as to reveal their essence. In this paper, we get to know different psychological contracts of population with different features by means of comparison.

Mathematical statistics method

This method is mainly used to judge the value of collected data so as to verify the theoretic hypothesis. According to the needs of research purpose, statistical analysis tools employed in this research mainly include Statistical Package for the Social Sciences (SPSS) 16.0, EXCELL and LISREL8.51, involving reliability and validity analysis, variance analysis, correlation analysis, confirmatory and exploratory factor analysis, factor analysis and so on^[7].

Logical reasoning method

Contrast, deduction, induction, analysis and inference are employed to make logical analysis of the statistical significance and results of data so as to achieve relevant theoretic conclusions.

DATA ACQUISITION AND ANALYSIS

Data acquisition for special interviews

16 relevant experts were interviewed in this research, mainly conducted in the following two ways: firstly, induction and summary were made on the existing content and measurement of psychological contracts; semi-structured interviews

were conducted with the results recorded, analyzed and summarized, after which researchers arranged some new indexes based on interviews. Meanwhile, frequency analysis and ranking were conducted on the interview indexes, resulting in the psychological contracts of “responsibilities of high school PE teachers” and “responsibilities of high schools”. The former has 42 items and the latter 40 items. The higher the frequency is, the higher the ranking is, and so is the importance of the index (Table 2 and Table 3).

Table 2: League Table for the “Responsibilities of High School PE Teachers” Psychological Contract Index Frequency (n=16)

Content Index	Frequency	Ranking	Competency Index	Frequency	Ranking
Sound Eloquence	15	1	Offering Reasonable Suggestions to School	14	2
Certain Sports Specialty	14	2	Management Work as Sports Management Personnel	13	3
Versed in Sports and Erudite	15	1	Good Psychological Adjustment Ability	11	5
Quick Response Strategies	15	1	Loyal to School and College	9	7
Dare to Innovate in Physical Education	12	4	Management of Student Guidance	10	6
Voluntary to Engage in Social Sports Work	11	5	Modest, Honest and Faithful	9	7
Good Sports Research Capacity	9	7	Incorruptible, Self-disciplined and Decent in Teaching Style	12	4
Never Concerned about Personal Gains and Losses	10	6	Good Writing Skills	9	7
Management of Student Guidance as a Head Teacher	8	8	Mentally Healthy	10	6
Practical and Rigorous in Physical Education	9	7	Physically Healthy	11	5
Interdisciplinary Communication Capabilities	9	7	Strong Sense of Motivation for Achievement	10	6
Cherishing Sports Facilities and Teaching Resources	11	5	Taking the Physical Education Seriously	11	5
Elegant Appearance and Highly Qualified in Speech and Deportment	12	4	Taking into Consideration the Overall Situation of School and College	11	5
Focusing on Physical Education	11	5	Informing in Advance before Transferring from Teaching Work	9	7
Keen and Active on Physical Education	10	6	Compliant with Instructions and Decisions of School	9	7
Proficient and Efficient in Physical Education and Research	11	5	Competent in Physical Education Demonstration	14	2
Voluntary to Further Learning	12	4	Careful and Responsible towards Work	12	4
Offering Help to Colleagues and Students	13	3	Accepting Adjustments in Teaching Work	9	7
Open to Advanced Cultural Philosophy	12	4	Highlighting Real Evidence in Sports Research	10	6
Good Cooperation Ability	14	2	Ability to Maintain Image of PE Teachers	11	5
Accomplishing Physical Education with Both Quality and Quantity Assured	11	5	Management of Sports Facilities	10	6
Capable of Building Nice Relationship with Colleagues	14	2	Working Overtime to Accomplish the Work Designated by Leaders	10	6

Table 3: League Table for the “Responsibilities of High Schools” Psychological Contract Index Frequency (n=16)

Content Index	Frequency	Ranking	Competency Index	Frequency	Ranking
Timely Feedback about Performance Evaluation and Investigation Results	15	1	Providing Space for Development	14	2
Creating Sound Working Environment and Atmosphere	14	2	Helping Solving Life Difficulties	11	5
Constantly Improving Teaching Environment	14	2	Fair Treatment	13	3
Caring about Health and Life	14	2	Offering Challenging Job	9	7
Moderate Sports Research	11	5	Performance Evaluation on Fair and Open Basis	12	4
Open Management Affairs of Leadership	10	6	Reasonable Basic Salary	13	3
Abundant Teaching Resources	9	7	Public Communication between Leaders and Teachers	12	4
Offering Opportunities to Other Schools for Communication and Learning	10	6	Offering Related Benefits	14	2
Offering Internal Teaching Training and Post Communication	9	7	Regular Training and Communication by School	10	6
Timely Publication of Work Performance	9	7	Basically Balanced Physical Work Load	11	5
Reward to Advanced Worker	9	7	Reasonable Utilization of Sports Talent	11	5
Caring about Growth of Teachers	11	5	Timely Feedback about Working Performance	11	5
Offering Autonomous Right to Work	12	4	Improving Happiness Index	11	5
Reasonable Calculation of Physical Work Load	11	5	Making Clear Job Responsibilities of Teachers	9	7
Diverse and Specific in Physical Education Work	10	6	Offering Work Guidance	9	7
Discriminating in one's Rewards and Punishments	11	5	Assuring Teaching Security	14	2
Reasonable Performance-related Payment	12	4	Approval and Trust from Leaders	12	4
Conferring Professional Titles on Fair and Open Basis	15	1	Soliciting Suggestions before Making Decisions	9	7
Requiring Teachers to Have Moderate Rest	12	4	Opening Appeal Channel for Teachers	10	6
Reward to Outstanding Physical Education Workers	12	4	Offering Training on Sports Skills	11	5

Data analysis of measurement questionnaires for “responsibilities of high school PE teachers” psychological contract

Each of the selected 16 high schools was distributed with 8 official measurement questionnaires totaling 128, with 90 recovered and a recovery ratio of 70.3%. Eliminating 10 invalid questionnaires, the valid questionnaires totaled 80 with a valid ratio of 88.9%. SPSS16.0 was used to conduct factor analysis of questionnaire results. Common factors were extracted by principal component analysis and selected with the eigenvalue above 2. The analysis results for the 16 relevant items of “responsibilities of high school PE teachers” are shown in Table 4: the total variance explained by 3 common factors accumulates as 61.183% with the first common factor accounting for 24.593%, the second one 20.567% and the third one 16.023%. The KMO value of the scale is 0.833, suggesting its fitness for exploratory factor analysis. Meanwhile, the Bartlett’s Test of Sphericity turned out to be 1632.736, $df=210$ and $P=0.000$. The data of scale items show significant difference, suggesting the items are interdependent and are closely related to the values. Therefore, it’s very suitable for factor analysis.

For research convenience, the results are shown in Table 5: the first common factor is named as “transactional norm contract” of PE teachers’ responsibilities, including 4 indexes, namely “Versed in Sports and Erudite”, “Quick Response Strategies”, “Elegant Appearance and Highly Qualified in Speech and Deportment” and “Competent in Physical Education and Training Demonstration”; the second common factor is named as “interpersonal relation contract” of PE teachers’ responsibilities, including 4 indexes, namely “Offering Help to Colleagues and Students”, “Good Cooperation Ability”,

“Capable of Building Nice Relationship with Colleagues” and “Offering Reasonable Suggestions to School”; the third common factor is named as “innovation contract” of PE teachers’ responsibilities, including 4 indexes, namely “Practical and Rigorous in Physical Education”, “Good Sports Research Capacity”, “Interdisciplinary Communication Capabilities” and “Highlighting Real Evidence in Sports Research”. Obviously, the “responsibilities of high school PE teachers” psychological contract is constituted by three dimensions, each of which is determined by 4 indexes.

Table 4: Total Variance Explained (n=80)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.164	24.593	24.593	5.164	24.593	24.593
2	4.499	20.567	45.160	4.499	20.567	45.160
3	3.125	16.023	61.183	3.125	16.023	61.183

Table 5: Exploratory Factor Analysis of “Responsibilities of High School PE Teachers” (Rotated Component Matrix ^a, n=80)

Index			
	1	2	3
Versed in Sports and Erudite	0.897		
Quick Response Strategies	0.828		
Elegant Appearance and Highly Qualified in Speech and Deportment	0.816		
Competent in Physical Education Demonstration	0.789		
Offering Help to Colleagues and Students		0.879	
Capable of Building Nice Relationship with Colleagues		0.824	
Offering Reasonable Suggestions to School		0.773	
Good Psychological Adjustment Ability		0.751	
Good Sports Research Capacity			0.792
Practical and Rigorous in Physical Education			0.788
Interdisciplinary Communication Capabilities			0.761
Highlighting Real Evidence in Sports Research			0.753

Data of formal measurement questionnaires for “responsibilities of high schools” psychological contract

The analysis results for the 12 relevant items of “responsibilities of high schools” are shown in Table 6: the total variance explained by 3 common factors accumulates as 68.731% with the first common factor accounting for 31.159%, the second one 19.940% and the third one 17.632%. The KMO value of the scale is 0.848, suggesting its fitness for exploratory factor analysis. Meanwhile, the Bartlett’s Test of Sphericity turned out to be 3081, df=467 and P=0.000. The data of scale items show significant difference, suggesting the items are interdependent and are closely related to the values. Therefore, it’s very suitable for exploratory factor analysis.

Table 6: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.859	31.159	31.159	3.859	32.159	31.159
2	2.273	19.940	51.098	2.273	18.940	51.098
3	2.081	17.632	68.731	1.996	16.632	68.731

The analysis results for the 12 relevant items of “responsibilities of high schools” are shown in Table 7: the first common factor is named as “basic benefit contract” of high schools, including 4 indexes, namely “Reasonable Performance-related Payment”, “Conferring Professional Titles on Fair and Open Basis”, “Performance Evaluation on Fair and Open Basis” and “Offering Related Benefits”; the second common factor is named as “development contract” of high schools’ responsibilities, including 4 indexes, namely “Offering Opportunities to Other Schools for Communication and Learning”, “Offering Internal Teaching Training and Post Communication”, “Reward to Physical Education Worker with Strong Research Capabilities” and “Regular Training and Communication by School”; the third common factor is named as “balance contract” of high schools’ responsibilities, including 4 indexes, namely “Diverse and Specific in Physical Education Work”, “Offering Challenging Job”, “Basically Balanced Physical Work Load” and “Assuring Teaching Security”. Obviously, the “responsibilities of high schools” psychological contract is constituted by three dimensions, each of which is determined by 4 indexes.

Table 7: Factor Analysis of “Responsibilities of High Schools” (Rotated Component Matrix ^a)

Index	Component		
	1	2	3
Reasonable Performance-related Payment	0.889		
Conferring Professional Titles on Fair and Open Basis	0.876		
Performance Evaluation on Fair and Open Basis	0.871		
Offering Related Benefits	0.734		
Offering Opportunities to Other Schools for Communication and Learning		0.878	
Offering Internal Teaching Training and Post Communication		0.816	
Reward to Physical Education Worker with Strong Research Capabilities		0.754	
Regular Training and Communication by School		0.732	
Diverse and Specific in Physical Education Work			0.893
Offering Challenging Job			0.787
Basically Balanced Physical Work Load			0.691
Assuring Teaching Security			0.652

The overall situation for the psychological contract of high school pe teachers is relatively good, but not so promising

The questionnaires on PE teachers' psychological contract were conducted on 80 high school PE teachers. SPSS16.0 was used for T-test on each sample, and analysis results are shown in Table 8: in the responsibility contract of high school PE teachers, the mean value for transactional norm contract is 3.71 and the standard deviation is 0.88 with the statistical parameter ($T=124.11$, $P=0.000<0.01$) inside the group, the mean value for interpersonal relation contract is 3.62 and the standard deviation is 0.89 with the statistical parameter ($T=146.13$, $P=0.000<0.01$) inside the group, and the mean value for innovation contract is 2.55 and the standard deviation is 0.91 with the statistical parameter ($T=90.56$, $P=0.000<0.01$) inside the group; in the responsibility contract of high schools, the mean value of basic benefit contract is 3.91 and the standard deviation is 0.90 with the statistical parameter ($T=107.78$, $P=0.000<0.01$) inside the group, the mean value of development contract is 3.92 and the standard deviation is 0.89 with the statistical parameter ($T=113.28$, $P=0.000<0.01$) inside the group, and the mean value of balance contract of 3.51 and the standard deviation is 0.92 with the statistical parameter $T=123.11$, $P=0.000<0.01$) inside the group; the ranking based on mean value is as follows: development contract, basic benefit contract, transactional norm contract, interpersonal relation contract, balance contract and innovation contract. First of all, all the T value is very big along with the $P=0.000<0.01$, indicating a significant difference among psychological contracts of high school PE teachers, which is worth deep considerations by leaders concerned; secondly, none of the mean values for PE teachers' psychological contracts reaches 4, a relatively good level. Apart from the innovation contract on a poor average level, other contracts are on a common level. Obviously, the overall situation is just so-so, and not so promising. Development contract in the responsibility contracts of high schools ranks at the top of the list while the innovation contract in the responsibilities of high school PE teachers ranks the lowest. The sharp contrast between the two items shows that it's urgent for school to improve PE teachers' development. In fact, the development of PE teachers is indeed quite unpromising, worthy of attention from leaders and departments concerned.

Table 8: Overall Analysis Results for the Psychological Contracts of High School PE Teachers (n=80)

Index		N	Mean Value	Standard Deviation	Ranking	T-Value	P-Value
Responsibility Contracts of High School PE Teachers	Transactional Norm Contract	80	3.71	0.88	3	124.11	0.000
	Interpersonal Relation Contract	80	3.62	0.89	4	146.13	0.000
	Innovation Contract	80	2.55	0.91	6	90.56	0.000
Responsibility Contracts of High Schools	Basic Benefit Contract	80	3.91	0.90	2	107.78	0.000
	Development Contract	80	3.92	0.89	1	113.28	0.000
	Balance Contract	80	3.51	0.92	5	123.11	0.000

MAIN CONCLUSIONS

The psychological contracts of high school PE teachers include “responsibilities of high school PE teachers” and “responsibilities of high schools”.

Responsibilities of high school PE teachers involve three dimensions, namely transactional norm contract, interpersonal relation contract and innovation contract; responsibilities of high schools involve three dimensions, namely basic benefit contract, development contract and balance contract.

The overall situation for the psychological contracts of high school PE teachers is just so-so, ranked in the following order based on importance: development contract, basic benefit contract, transactional norm contract, interpersonal relation contract, balance contract and innovation contract.

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