

A Study on Elementary Schoolchildren's Participation Motivation, Social Support, Swimming Enjoyment, and Learning Satisfaction on Swimming

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Abstract: The study's objective is to understand the current situation of Chiayi elementary students' participation motivation, social support, swimming enjoyment, and learning satisfaction on swimming, as well as the background variables, canonical correlation, predictions, and the analysis over relation that affected. Based on 2012 elementary pupils in Chiayi, 487 questionnaires out of 520, or 93.6%, are valid. The results are as below: students scored higher than "acceptable" in motivation and satisfaction; social support and satisfaction are close to acceptable. Regarding gender, girls show more social support than boys. There is no significance in grades, but distinctive areas have significance in motivation, enjoyment, and satisfaction. The last factor, satisfaction, has the least score in plains. motivation, social support, and enjoyment relating to practice time are having significance. From canonical correlation, motivation to enjoyment and satisfaction, and social support to all the other factors have medium-high positive correlation. On prediction, in the parts where social support ties with all the other factors, and motivation to social support with the prediction of satisfaction, friends support scores the most. Skills factor scores the most when it comes to motivation to swimming enjoyment. To satisfaction, achievement scores the highest. And with enjoyment to the rest of the factors, sports benefit scores the highest. In influencing results, social support has direct positive influence on motivation, swimming enjoyment, and learning satisfaction. Motivation, on the other hand, has direct influence on swimming enjoyment and learning satisfaction. And swimming enjoyment has direct positive influence on learning satisfaction. The findings can be used by elementary school physical education teachers or swimming coach for future swimming courses planning.

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1. Introduction

Due to the soaring rate of children drowning, the ministry of education declared in student swimming enhancement program that elementary schools to high schools should implement swimming courses, emphasize lifesaving, and boost up students' swimming ability, so as to give children a safer and better foundation (Chen, 2002). Since students have a basic knowledge on swimming, they may further adopt this sport as a habit and even a hobby.

In physical education, it is inevitable that some students do not yet have the motivation, but they have learned fundamental skills; once they are motivated, it is more possible that they show more learning efficiency (Hsu & Huang, 2001). Some students may sense fear or failure: being the case, if they learn only to avoid such feelings, then their learning to swim is inefficient. According to past studies on sports participation motivation, girls are likely to be affected by the society and self-awareness than boys, and the latter desire victory more than the former (Gould, Medbery, & Tuffey, 2001; Tuffey, Medbery, & Gould, 2006). Gender and age makes a huge difference in sports participation motivation of elementary school

children (Barber, Sukhi, & White, 1999), and grade level, too (Lin, 2005; Hsu, 2006; Lin, 2009). Therefore, the study aims to understand student's needs in health, achievement, society, psychology, and skills in swimming using participation motivation scale.

The so-called "social support" is the overall support that the participant receives from his or her significant others: family, instructors, coach, peers, and teammates. The five types have positive influence ranging from little to medium (Carron, Hausenblas, & Mack, 1996). Social support is resourceful, and cause feelings of acceptance from people interactions. Such scenario is mainly based on people one feels close to, and those particular people have very essential roles (Chang, 2008). Thus, to school children, giving encouragement and positive comments is a key to affecting their habit on playing sports as well as their participation motivation (Beets, Vogel, Chapman, Pitetti, & Cardinal, 2007). 9-12 year-olds especially need family support (Bokhorst, Sumter, & Westenberg, 2010). Playing sports with companions and happiness induced by interactions are also important factors to stimulate and boost sport pleasure

(Young, Gittelsohn, Charleston, Felix-Aaron, & Appel, 2001). According to studies on children's social support on sports, it was found that for different background variables, gender and grade level caused significant difference (Lin, 2005; Hsu, 2006; Lin, 2009). The present study aims to use social support scale to understand the situations of family and friends support.

Because diverse styles of teaching may build up school children's motivation toward physical education, allowing them to feel the fun and thus learn the skills, therefore making swimming-teaching lively and entertaining is one way to overcome fears of water (Chang, 1998). In students' sport participation plan, swimming enjoyment was seen as necessary for it affects personal development and strengthen one's will in continuing the specific sports activity (Freedson & Rowland, 1992; Mandigo & Couture, 1996). Education units, during these years, have tried to educate and propagandize the use of diverse styles of teaching to coaches and sports instructors via workshops; for example, using comprehension or creativity. The purpose was to train teachers the ability to apply different ways in physical education (Chang & Chen, 2010). Salguero, González-Boto, Tueroc and Márquez (2003) proposed that Spanish female school children had higher swimming enjoyment than those of males. Consequently, the present study aims to understand students' reactions to class atmosphere, sports benefits, peers, sports performance, ability, and competition, using swimming enjoyment scale.

Swimming has already become one of the main agenda of physical education, and knowing how to help students learn using efficient methods is very essential in that it allows children to succeed and overcome fears (Chen, 2004). Lee (2008) asserted that swimming enjoyment was composed by five aspects: environment and facility, learning results, administration service and quality, interpersonal relationships, and teacher-student attitude. Teven and McCroskey (1997) proposed that teachers' concern directly influences students' learning and the former's observation of the latter, since learning satisfaction has to do with active, positive attitude. Studies had pointed out that genders and grade level affect satisfaction (Lee, 2002; Lai, 2004; Hsieh, 2006). Thus, the present study also aims to use learning satisfaction scale to realize teaching, facility, course syllabus, and teaching-administrating situation.

For related studies on motivation, support, enjoyment, and satisfaction, Weiss and Barber (1995) pointed out that parents, peers, teachers, and coaches have significant influence to school children's sports activity. Barber, Sukhi, and White (1999) asserted that when parents' intervention on children's condition

would have negative results. Study of Tsai conducted in 2009 on elementary school children and found out factors for social support and motivation had significant difference. And McCarthy, Jones, and Clark-Carter (2008) proposed that social support and enjoyment were highly related. Vlachopoulos and Karageorghis (2005) pointed out that motivation and enjoyment impacted on each other. For swimming enjoyment and learning satisfaction, Streat and Holt (2000) pointed out that teacher ought to enhance school children's learning satisfaction. Chen (2008), Chang and Chen (2010) pointed out that enjoyment has a relevant prediction to satisfaction, and Wu (2008) proposed that the two factors were significantly and positively related. From the above research, it is known that motivation, support, enjoyment, and satisfaction are connected; simultaneously, they influence each other.

As mentioned in the research background, the objective of present study is to understand the current situation of elementary students' participation motivation, social support, swimming enjoyment, and learning satisfaction on swimming in Chiayi city and nearby areas, as well as the background variables, canonical correlation, predictions, and the affected analysis. The study was based on elementary pupils in Chiayi, and hopes to give more information for physical education teachers or swimming coach.

1.1 Purpose of research

The purpose of research is to understand elementary school children's participation motivation, social support, swimming enjoyment, and learning satisfaction in swimming class in Chiayi city and nearby areas. Also, the present research aims to discuss the differences caused by background variables. Further, to find the relevance, prediction, and influence among factors.

1.2 Research questions

The study inquires the current situations of the five factors in Chiayi elementary school children's swimming class. In addition the present research tends to find out whether the differences made from particular background variables, and the possible relevance among factors? The study also tends to uncover the significant predictor from motivation, social support, swimming enjoyment, and learning satisfaction. Last, whether there were the effects caused by the four factors?

2. Methods

2.1 Participants

The study undergoes pilot study and the results are below: the pilot study questionnaires were issued in the 2012 September, and 120 pieces were sent and all of them were successfully returned. Two pieces are invalid, which leaves the validity rate at 98.3%. After

item analysis and reliability analysis were applied, the questionnaires become official. Fifth and sixth graders in elementary school of Chiayi areas are the subject of the study: the ratio for choosing county schools and city schools is 2:1, and homeroom classes are randomly picked. A total of 26 schools (28 classes) were selected with 20 children per class. Out of the 26 schools, 10 are from Chiayi city and 16 are from Chiayi county. For the city, 189 out of 200 questionnaires are valid; for the county, 298 out of 320 are good. The date of issuing the questionnaires was in 2012 November. 518 out of 520 are returned (99.6%), and the validity rate is 93.6% (487 are valid.)

2.2 Instruments

Students' basic personal information

The present study refers to Hsieh (2006) and Chen (2009). Students' genders, grade levels, and areas of schools are considered as the independent variables of the study.

Participation Motivation Scale

In present research, swimming participation motivation scale was modified from that proposed by Hsieh (2010) and Hsu (2006). The main focus is to test participants' participation motivation, after analysis, the modified version consists of 15 questions, the critical ratio value is at 13.59- 24.71, $p < .05$, and relativity factor is at $r = .54-.73$, $p < .05$; which means all the questions posed have discriminability. The scale will be analyzed by using exploratory factor analysis and principle factor analysis, and from Bartlett's test of sphericity it has shown that the scale provided is appropriate for factor analysis, with the value of chi square of 3288.47, with KMO value of 0.91. For all the questions in the scale, the factor loadings are above 0.66, the extracted eigenvalues is greater than 1, and the total variance explained for the five factors is 70.57%. As for reliability analysis, the subscale's value of Cronabach's α coefficient for each element is between .64-.85; the full-scale value of Cronabach's α coefficient is .90, indicating that the participation motivation scale has fine validity and reliability.

Social Support Scale

The swimming participation motivation scale of present study was modified after comparing to Chen's reference (2012) to that of House (1981) and Liao (2009). After analysis, the remade and modified version's critical ratio value of these 15 questions is 7.02-12.60, $p < .05$, and relativity factor is at $r = .60-.76$, $p < .05$; which means all the questions posed have discriminability. The scale is analyzed using exploratory factor analysis and principle factor analysis, and from Bartlett's test of sphericity it is shown that the scale provided is appropriate for factor analysis ($\chi^2 = 3288.47$, KMO value = 0.91). For all the questions in the scale, the factor loadings are higher

than 0.68, the extract eigenvalues is over 1, and the total variance explained for the five factors is 63.26%. As for reliability analysis, the subscale's Cronabach α value for each element is between .87 and .93; the full-scale Cronabach's α value is .93, indicating that the social support scale has fine validity and reliability.

Swimming Enjoyment Scale

The study's Swimming Enjoyment scale is made after referencing to Chuang, Chen and Chang (2007) and Chang and Chen (2010), and modified according to the motive and purpose of present study. After analysis, the present version's (25 questions) critical ratio value is ranging from 12.50 to 25.20, $p < .05$; and, relativity factor $r = .61-.76$, $p < .05$; which means all the questions posed have discriminability. The Swimming Enjoyment scale is analyzed using exploratory factor analysis and principle factor analysis, and from Bartlett's test of sphericity it is shown that the scale provided is appropriate for factor analysis ($\chi^2 = 7459.22$, KMO = .96). For all the questions in the scale, the factor loadings are higher than 0.53, the extract eigenvalues is over 1, and the total variance explained for the six factors is 62.76%. For reliability analysis, the subscale's Cronabach α value for each element is between .64 and .91; the full-scale Cronabach's α value is .95, indicating that the Swimming Enjoyment scale has fine validity and reliability.

Learning Satisfaction Scale

The study's swimming learning satisfaction scale is made after referencing to Hsieh (2006) and modified according to the motive and purpose of present study. The critical ratio value of these 13 questions' is ranging from 11.03 to 23.86, $p < .05$; and, relativity factor: $r = .48-.73$, $p < .05$; which means all the questions posed have discriminability. The Swimming Enjoyment scale is analyzed by using exploratory factor analysis and principle factor analysis, and from Bartlett's test of sphericity, it is shown that the scale provided is appropriate for factor analysis ($\chi^2 = 2801.56$, $p < .05$, KMO = .92). For all the questions in the scale, the factor loadings are higher than 0.66, the extract eigenvalues is greater than 1, and the total variance explained for the six factors is 68.05%. For reliability analysis, the subscale's Cronabach α value for each element is ranging from .63 to .84; the full-scale Cronabach's α value is .90, indicating that the learning satisfaction scale has fine validity and reliability.

2.3 Data analysis

The returned valid questionnaires of the study mainly include the following in statistics analysis: 1. Using item analysis and relativity analysis as the basis for choosing questions. 2. Construct the validity of the scales in the study by exploratory factor analysis, and

use Cronbach α reliability test to measure the study's reliability. 3. To analyze data from retrieved questionnaires, the present study uses SPSS 18.0 to perform descriptive statistics, t-test, one-way ANOVA, canonical correlation analysis (Cf value), and multiple regression analysis; using LISREL 8.80 to perform structural equation modeling. The significant level of statistic test was based on the benchmark of $\alpha = .05$.

3. Results

3.1 Basic data analysis

The sample of this study comprised 175 males (54%) and 149 females (46%) from 19 to 27 years old, among which 21 and 22 years old (208, 64.2%) accounted for the majority; as for sports properties, 107 athletes (33%) partake in physical contact sports and 217 in non-physical contact (67%). The present study used fifth and sixth grade elementary school children of Chiayi City in 2012 as participants. Valid questionnaires were 487 pieces: 247 boys (50.7%), 240 girls (49.3%); 182 of all were fifth-graders, and 305 of them were sixth-graders. 179 questionnaires (36.8%) were issued in the plains area, 59 (12.1%) in the mountainous area, 60 (12.3%) coastal, and 189 (38.8%) from the city. There were also various practice time: 424 school children practiced 2 hours (87.1%), 50 practiced 2-6 hours (10.3%), and 13 students practiced more than 6 hours (2.7%).

3.2 The current situation on participation motivation, social support, swimming enjoyment, and learning satisfaction

The average score for participation motivation of the participants was 4.04, which higher than "agreeable," and the average score for every component at medium-high, it indicated that most elementary school children have high motivation in swimming class. In the five components of motivation, health needs scores the highest, achievement needs scores higher than average, while skills needs, social needs, and psychological needs score lower than average. The average score for social support was 3.81, which close to "agreeable" and every component has an average score above medium-high, which signified that most students feel supported in swimming class. Friends' support scored higher while family scored lower than average. Swimming enjoyment scored an average of 3.87, and this value was close to "agreeable." Every component was at medium-high and showed that most school children felt positive. For the six components in this category, peers scored the most; sports benefit, class atmosphere, and competition enjoyment were also higher than average, but sports performance and ability scored lower than average. Learning satisfaction had an average score of 4.01, which was

higher than "agreeable." The average score for every component was at medium-high, indicates that most Chiayi school children were satisfied. Teaching scored the highest among the four component of this category, class contents was also higher than average, while facility and administration were below the average. See Table 1:

Table 1: Elementary school children's participation motivation, social support, swimming enjoyment, and learning satisfaction analysis

Component of participation motivation	M \pm SD	Number of questions	Order
Health needs	4.37 \pm .73	3	1
Achievement needs	4.13 \pm .81	3	2
Social needs	3.92 \pm .82	3	4
Psychological needs	3.91 \pm .86	3	5
Skills needs	3.97 \pm .76	3	3
Overall	4.04 \pm .64	15	
Component of social support	Average	Number of questions	Order
Family support	3.70 \pm .99	7	2
Friends support	3.92 \pm .83	8	1
Overall	3.81 \pm .81	15	
Component of swimming enjoyment	M \pm SD	Number of questions	Order
Class atmosphere	4.12 \pm .83	6	3
Sports benefits	4.16 \pm .73	6	2
Peers relationship	4.17 \pm .73	6	1
Sports performance	3.67 \pm .85	3	5
Sports ability	3.12 \pm 1.12	2	6
Competition enjoyment	3.97 \pm .93	2	4
Overall	3.87 \pm .69	25	
Component of learning satisfaction	Average	Number of questions	Order
Teaching	4.14 \pm .79	4	1
Facility	3.94 \pm .80	4	3
Class contents	4.05 \pm .86	2	2
Admin.	3.93 \pm .87	3	4
Overall	4.01 \pm .70	13	

3.3 The differences of background variables on participation motivation, social support, swimming enjoyment, and learning satisfaction

- (1) On different genders: There were no significant difference regarding boys and girls in Chiayi area on the overall motivation, enjoyment, and learning satisfaction. For the overall social support on different genders, there was significant difference, with the t-value was 2.57, $p < 0.5$, and girls tend to have higher social support than boys.
- (2) On different grades, there was no significant difference regarding fifth and sixth graders in Chiayi area on the overall motivation, social support, enjoyment, and learning satisfaction.
- (3) On different areas, for the overall motivation, enjoyment, and learning satisfaction on school children in distinct areas, the F-value were 3.58, 5.29, and 4.58, $p < 0.5$, which indicated significant

difference. The former two factors show that mountainous area was greater than plain area after Scheffe post-hoc test. For learning satisfaction: mountainous area and the city were greater than plain area. In overall social support, there is no significant difference regarding distinct areas.

- (4) Practice time: For the different practice time in the overall participation motivation, social support, and swimming enjoyment, the F-value were 3.99, 3.12, 8.31, $p < 0.5$, which indicates significant difference. Motivation and social support showed that group of 6 hours greater than group of 2 hours after post-comparison. Swimming enjoyment shows that 6 hours were also greater than 2 hours and 2-6 hours in post-comparison. There was no significant difference in the overall learning satisfaction affected by swimming practice time. See Table 2:

Table 2: Elementary school children's participation motivation, social support, swimming enjoyment, and learning satisfaction background variables

Variables	Participation motivation	Social support	Swimming enjoyment	Learning Satisfaction
	M±SD	M±SD	M±SD	M±SD
Gender				
Boys	4.05±.65	3.72±.84	3.90±.71	4.02±.71
Girls	4.03±.62	3.91±.76	3.84±.68	4.01±.69
t-value	.36	2.57*	.93	.33
Grade				
Fifth	3.98±.68	3.83±.75	3.84±.72	3.94±.71
Sixth	4.07±.61	3.80±.84	3.88±.68	4.06±.69
t-value	1.54	.48	.69	.59

Continue Table 2

	Area			
Plain	3.96±.64	3.70±.82	3.73±.70	3.87±.68
Mountainous	4.28±.58	3.90±.99	4.11±.61	4.19±.58
Coastal	4.05±.56	3.84±.70	3.87±.62	4.06±.67
City	4.03±.66	3.88±.75	3.92±.72	4.09±.74
F-value	3.58*	1.87	5.29*	4.58*
Scheffe	M>P		M>P	M, C >P
Practice time				
2 hours	4.01±.64	3.79±.77	3.83±.68	4.01±.67
2-6 hours	4.14±.62	3.80±1.05	3.98±.75	4.00±.83
6 hours or more	4.47±.54	4.36±.67	4.58±.54	4.46±.89
F-value	3.99*	3.12*	8.31*	2.65
Scheffe post-hoc	6>2 hours	6>2 hours	6>2, 2-6 hours	

* $p < .05$

3.4 Relations between participation motivation, social support, swimming enjoyment, and learning satisfaction in swimming class

The relations of participation motivation to swimming enjoyment

From table 3, it shown that participation motivation was the X variable, and swimming enjoyment was the Y variable. Three canonical factors

were chosen from the X variables (χ^1, χ^2, χ^3) and another three (η^1, η^2, η^3) were chosen from the Y group (display, appear, show.) All have shown significant difference, but since the second and the third group overlappable ratio did not reach 5% therefore lacked explaining capability in linear combination, the issue will not be further discussed. From the analysis of the degree of canonical correlation and variances that could be explained, the factor construct of motivation, through canonical variable of the first group, affects the factor construct of enjoyment, and the explaining capability value was 0.81. The degree that X variables can explain the sum of variables through χ^1, η^1 is 42.80%. Through the analysis of loading of canonical factors, in the participation motivation variable, "skills needs" was the higher one, with the loading value -0.86; for the rest, the absolute value of canonical loadings reached above 0.7. In the swimming enjoyment variable, "sports benefit" was the higher one, with the loading value -0.93; for the rest, the absolute value of canonical loadings reached above 0.6. Because the X variable and the Y variable had the same positive/negative value in canonical loading, there had positive correlation between each other.

The relations of participation motivation to learning satisfaction

From table 3, it shown that participation motivation was the X variable and learning satisfaction, the Y variable. One canonical factor was chosen from the X variables (χ^1) and another one (η^1) was chosen from the Y variables. Because only this group has significant difference, therefore the issue will be discussed furthermore. From the analysis of the degree of canonical correlation and variances that could be explained, the factor construct of motivation, through canonical variable of the first group, affects the factor construct of satisfaction, and the value of explaining capability was 0.62. The degree that X-independent variables explained the sum of variables through $\chi^1, \eta^1 = 26.55\%$, through the analysis of canonical factors loading, in the participation motivation variable, "achievement needs" was the higher one, with the loading value 0.87; for the rest, the absolute value of canonical composition loading reached above 0.7. In the learning satisfaction variable, "class contents" is the higher one, with the loading value 0.88; for the rest, the absolute value of canonical composition loading reached above 0.7. Because the X variable and the Y variable had the same positive/negative value in canonical loading, there was positive correlation between each other.

Table 3 Canonical correlation analysis of participation motivation to swimming enjoyment, and participation motivation to learning satisfaction

Participation motivation to swimming enjoyment			
X variable	Canon Cor.	Y variable	Canon Cor.
	χ_1		η_1
Health needs	-.70	Class atmosphere	-.88
Achievement needs	-.83	Sports benefit	-.93
Social needs	-.70	Peers relationship	-.89
Psychological needs	-.82	Sports performance	-.81
Skills needs	-.86	Sports ability	-.60
		Competition enjoyment	-.68
Extracted variable %	60.47		64.79
Overlappable %	41.27		42.80
P ²	.66		
p	.81***		
Participation motivation to learning satisfaction			
X variable	Canon Cor.	Y variable	Canon Cor.
	χ_1		η_1
	.77	Teaching	.87
Achievement needs	.87	Facility	.82
Social needs	.71	Class contents	.88
Psychological needs	.78	Admin.	.74
Skills needs	.84		
Extracted variable %	63.74		69.28
Overlappable%	24.43%		26.55%
P ²	.38		
p	.62***		

***p<.001

The relations of social support to participation motivation

From table 4, it shown that social support as the X variable, and participation motivation, the Y variable. One canonical factor is chosen from the X variable (χ^1) and another one (η^1) chosen from the Y group. Because only this group has significant difference, therefore the issue will be discussed. From the analysis of the degree of canonical correlation and variances that could be explained, the factor construct of social support, through canonical variable of the first group, affected the factor construct of motivation, and the value of explaining capability was 0.62. The degree that X variable can explain the sum of variables through χ^1 , η^1 was 23.90%. Through the loading analysis of canonical factors, in the social support variable, "friends support" was the higher one, with the loading value of -0.96; for the rest, the absolute value of canonical composition loading reached above 0.7. In the participation motivation variable, "achievement needs" was the higher one, with the loading value -0.91; for the rest, the absolute value of canonical composition loading reached above 0.6. Because the X variable and the Y variable have the same positive/negative value in canonical loading, there was positive correlation between each other.

The relations of social support to swimming enjoyment

From table 4, it shown that social support was the X variable, and swimming enjoyment, the Y variable. Two canonical factors were chosen from the X variables (χ^1 , χ^2) and another two (η^1 , η^2) from the Y variable. Since the second group's overlappable ratio did not reach 5% therefore lacked explaining capability in linear combination, the issue wouldn't be further discussed. From the analysis of the degree of canonical correlation and variances that could be explained, the factor construct of social support, through canonical variable of the first group, affects the factor construct of enjoyment, and the explaining capability value was 0.69. The degree that X variables can explain the sum of variables through χ^1 , η^1 was 29.72%. Through the loading analysis of canonical factors, in the social support variable, "friends support" was the higher one, with the loading value -0.94; for the rest, the loading absolute value of canonical composition reached above 0.8. In the swimming enjoyment variable, "peer relationship" was the higher one, with the loading value -0.91; for the rest, the loading absolute value of canonical

composition reached above 0.6. Because the X variable and the Y variable have the same positive/negative value in canonical loading, there was positive correlation between each other.

Table 4: Canonical correlation analysis of social support to participation motivation, and social support to swimming enjoyment

Social support to participation motivation			
X variable	Canon Cor.	Y variable	Canon Cor.
	χ_1		η_1
		Health needs	-.69
Family support	-.77	Achievement needs	-.91
		Social support	-.82
Friends support	-.96	Psychological needs	-.75
		Skills needs	-.72
Extracted variable %	76.02		60.74
Overlappable %	29.91		23.90
P ²	.39		
P	.62***		
Social support to swimming enjoyment			
X variable	Canon Cor.	Y variable	Canon Cor.
	χ_1		η_1
		Class atmosphere	-.73
Family support	-.82	Sports benefit	-.84
		Peers relationship	-.91
Friends support	-.94	Sports performance	-.90
		sports ability	-.63
		Competition enjoyment	-.66
Extracted variables %	77.61		61.69
Overlappable%	37.39		29.72
P ²	.48		
P	.69***		

***p<.001

The relations of social support to learning satisfaction

From table 5, it shown that social support was the X variable and learning satisfaction, the Y variable. One canonical factor was chosen from the X variable (χ^1) and another one (η^1) from the Y variable. Because only this group had significant difference, therefore the issue would be further discussed. From the analysis of the degree of canonical correlation and variances that could be explained, the factor construct of social support, through canonical variable of the first group, affecting the factor construct of learning satisfaction, and the explaining capability value was 0.64. The degree that X variable can explain the sum of variables through χ^1 , η^1 = 28.82%; through the loading analysis of canonical factors, in the social support variable, “friends support” was the higher one, with the loading value of -0.94; for the rest, the absolute value of canonical composition loading reached above 0.8. In the learning satisfaction variable, “class contents” was the higher one, with the loading value of -0.88; for the rest, the absolute value

of canonical composition loading reached above 0.7. Because the X variable and the Y variable have the same positive/negative value in canonical loading, there was positive correlation between each other.

Table 5: Canonical correlation analysis of social support to learning satisfaction, and swimming enjoyment to learning satisfaction

Social support to learning satisfaction			
X variable	Canon Cor.	Y variable	Canon Cor.
	χ_1		η_1
Family support	-.82	Teaching	-.85
		Facility	-.77
Friends support	-.94	Class contents	-.88
		Admin.	-.86
Extracted variables %	77.28		70.40
Overlappable %	31.63		28.82
P ²	.41		
p	.64***		
Swimming enjoyment to learning satisfaction			
X variable	Canon Cor.	Y variable	Canon Cor.
	χ_1		η_1
Class atmosphere	-.86	Teaching	-.90
Sports benefit	-.95	Facility	-.75
Peers relationship	-.91	Class contents	-.91
Sports performance	-.80	Admin..	-.74
Sports ability	-.48		
Competition enjoyment	-.61		
Extracted variables %	61.75		68.76
Overlappable %	39.13		43.62
P ²	.63		
P	.70***		

***p<.001

The relations of swimming enjoyment to learning satisfaction

From table 5, it is shown that swimming enjoyment is the X variable and learning satisfaction, the Y. Two canonical factors were chosen from X variables (χ^1 , χ^2) and another two from the Y variables (η^1 , η^2). Since the second group's overlappable ratio did not reach 5% therefore lacked explaining capability in linear combination, the issue wouldn't be further discussed. From the analysis of the degree of canonical correlation and variances that could be explained, the factor construct of swimming enjoyment, through canonical variable of the first group, affects the factor construct of satisfaction, and the explaining capability value was 0.70. The degree that X variables can explain the sum of variables through χ^1 , η^1 is 43.62%. Through the analysis of canonical factor loadings, in the swimming enjoyment variable, “sports benefit” was the higher one, with the loading value -0.95; for the rest, the absolute value of canonical composition loading reached above 0.6. In the learning satisfaction variable, “class contents” was the higher one, with the loading value -0.91; for the

rest, the loading absolute value of canonical composition reached above -0.7. Because the X variable and the Y variable have the same positive/negative value in canonical loading, there was positive correlation between each other.

3.5 The prediction analysis of participation motivation, social support, swimming enjoyment, and learning satisfaction on swimming

Shown below is the prediction analysis of every component factor on the overall score (of variables). From table 6 it shown that by using multiple regression analysis, the present study found out that in the components of social support to participation motivation, friends and family both had the significant equation: $F(2, 484)=142.33, R^2=.37, p<.05$. It shows that such equation can sufficiently explain the amount of explanation of variance is 37.0% in participation motivation of the school children, with friends support having the greatest prediction $\beta=.46$.

In the components of social support to swimming enjoyment, friends and family both had the significant equation: $F(2, 484)=187.09, R^2=.44, p<.05$. It shows that such equation can sufficiently explain the amount of explanation of variance is 44.0% in swimming enjoyment of the school children, with friends support having the greatest prediction $\beta=.46$.

In the components of social support to learning satisfaction, friends and family both had the significant equation: $F(2, 482)=166.60, R^2=.41, p<.05$. It shows that such equation can sufficiently explain the amount of explanation of variance is 41.0% in learning satisfaction of the school children, with friends support having the greatest prediction $\beta=0.46$.

In the components of participation motivation to swimming enjoyment, skills needs, achievement needs, psychological needs, and social needs had the significant equation: $F(4, 482)=230.89, R^2=.66, p<.05$. It shows that such equation can sufficiently explain

the amount of explanation of variance is 66.0% in swimming enjoyment of the school children, with skills needs having the greatest prediction $\beta=.33$.

In the components of participation motivation to learning satisfaction, achievement needs, skills needs, social needs, and psychological needs had the significant equation: $F(4, 482)=71.92, R^2=.37, p<.05$. It shows that such equation can explain the amount of explanation of variance is 37.0% in learning satisfaction of the school children, with achievement needs having the greatest prediction $\beta=.27$.

In the components of swimming enjoyment to learning satisfaction, sports benefit, social relationship, and sports performance had the significant equation: $F(3, 483)=249.77, R^2=.61, p<.05$. It shows that such equation sufficiently explains the amount of explanation of variance is 61.0% in learning satisfaction of the school children, with sports benefit having the greatest prediction $\beta=.44$.

In the components of social support and swimming enjoyment to participation motivation, sports benefit, social relationship, friends support, class atmosphere, sports performance, and competition enjoyment had the significant equation: $F(6, 480)=146.98, R^2=.65, p<.05$. It shows that this equation sufficiently explain the amount of explanation of variance, which is 65.0% in swimming enjoyment of the school children, with sports benefit having the greatest prediction $\beta=.27$.

In the components of participation motivation and social support to learning satisfaction, friends support, skills needs, family support, and achievement needs had the significant equation: $F(4, 482)=113.96, R^2=.49, p<.05$. Such equation can sufficiently explain the amount of explanation of variance is 49.0% in learning satisfaction of the school children, with friends support having the greatest prediction $\beta=.32$.

Table 6: Regression analysis of participation motivation, social support, swimming enjoyment, and learning satisfaction

Component of social support to participation motivation		Component of social support to swimming enjoyment	
Prediction variable	β	Prediction variable	β
Friends support	.46*	Friend support	.46*
Family support	.22*	Family support	.28*
R ²	.37*	R ²	.44*
Component of social support to learning satisfaction		Component of participation motivation to swimming enjoyment	
Prediction variable	β	Prediction variable	β
Friends support	.46*	Skills needs	.33*
Family support	.25*	Achievement needs	.30*
		Psychological needs	.23*
		Social needs	.12*
R ²	.41*	R ²	.66*
Component of participation motivation to learning satisfaction		Component of swimming enjoyment to learning satisfaction	
Prediction variable	β	Prediction variable	β
Achievement needs	.27*	Sports benefit	.44*
Skills needs	.25*	Social relationship	.19*
Social needs	.11*	Sports performance	.23*
Psychological needs	.11*		
R ²	.37*	R ²	.61*

Continue Table 6:

Component of social support and swimming enjoyment to participation motivation		Component of participation motivation and social support to learning satisfaction	
Prediction variable	β	Prediction variable	β
Sports benefit	.27*	Friends support	.32*
Social relationship	.16*	Skills needs	.24*
Friends support	.15*	Family support	.19*
Class atmosphere	.18*	Achievement needs	.14*
Sports performance	.11*		
Competition enjoyment	.09*		
R ²	.65*	R ²	.49*

*p<.05

3.6 The affecting relationships between participation motivation, social support, swimming enjoyment, and learning satisfaction

Evaluation of the SEM model

The result of the overall model goodness of fit analysis showed that the absolute fit indicator (χ^2 (113) = 400.22, $p = .00$) reached a level of significance. This finding implies that a discrepancy or deviation exists between the covariance matrix of this model and the covariance matrix of the empirical data. On the basis of this result, the model is rejected because it is easily affected by large samples. Conversely, The RMSEA value (.08) is less than the minimum acceptance value (.08); the SRMR value (.06) is less than the minimum acceptance value (.08); therefore, the model is acceptable. Regarding relative fit measures, the NNFI value (.94) is greater than the acceptance value (.90); therefore, the model is acceptable. The CFI value (.95) is greater than the acceptance value (.90), which indicates that the model is acceptable. Regarding parsimonious fit measures, the PNFI value (.78) is greater than the acceptance value (.50), the model is acceptable. The model is acceptable since the PGFI value (.59) is shown greater than the acceptance value (.50). On the basis of the test results of all model fit indicators, this present model passed the fitness test; therefore, it is an acceptable model.

Estimation of parameters

Six research hypothesis models were proposed in this study. Based on the model standardized parameter estimation values in Fig. 1, the following can be discovered:

- H1 : Event spectator's social support has a direct positive effect on participation motivation. The standardized coefficient of .71 ($t = 11.60$, $p < .01$) achieves the level of significance; therefore, the hypothesis is supported.
- H2 : Event spectator's social support has a direct positive effect on swimming enjoyment. The standardized coefficient of .14 ($t = 2.61$, $p < .01$)

achieves the level of significance; therefore, the hypothesis is supported.

- H3 : Event spectator's social support has a direct positive effect on learning satisfaction. The standardized coefficient of .46 ($t = 6.85$, $p < .01$) achieves the level of significance; therefore, the hypothesis is supported.
- H4 : Event spectator's participation motivation has a direct positive effect on swimming enjoyment. The standardized coefficient of .81 ($t = 11.52$, $p < .01$) achieves the level of significance; therefore, the hypothesis is supported.
- H5 : Event spectator's participation motivation has a direct positive effect on learning satisfaction. The standardized coefficient of .33 ($t = 2.38$, $p < .01$) achieves the level of significance; therefore, the hypothesis is supported.
- H6 : Event spectator's swimming enjoyment has a direct positive effect on learning satisfaction. The standardized coefficient of .80 ($t = 5.95$, $p < .01$) achieves the level of significance; therefore, the hypothesis is supported.

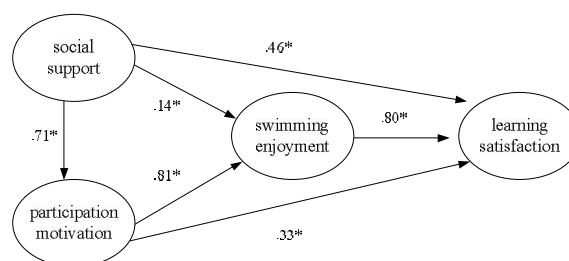


Figure 1. Overall Model of Standardized Parameters
Note: *p<.05

4. Conclusions

According to related references and data of measuring components, in Chiayi area, elementary school children's current situation on participation motivation, social support, swimming enjoyment, and learning satisfaction of swimming is stated as follow: children's motivation in swimming class is higher than "agreeable;" health needs scored the highest, and achievement needs contains score above average. The

results corresponded with that of research conducted by Lin (2005), which suggested that health needs is the most important in elementary school students swimming, yet did not apply to the result found by Chen (2009), who pointed out that skills needs is the most important in table tennis. The overall score for social support is close to “agreeable,” which indicates that most students feel the support needed. Friends support scored the highest, and such result is different from that of Lin (2005), who indicates that family would be the highest scored. The score for swimming enjoyment is also close to “agreeable,” and peers relationship scored the most in this part, while sports benefit, class atmosphere, and competition enjoyment are also higher than average. The results differed from Chang and Chen (2010), who suggested that sports benefit is the highest. The overall score for learning satisfaction is higher than “agreeable,” and teacher’s teaching had the highest score while class contents scored above average. The result is as same as what Chang and Chen (2010) suggested, and also similar to finding of Chen (2003).

From related references and collected data, the differences of background variables are listed below: in gender, the study’s result shows that genders do not affect school children’s swimming participation motivation, which is different from research results of Salselas, Gonzalez-Boto, Tuero, and Marquez (2007) on Portugal’s school children and teenagers, and also different from result of Wu (2004) too. But, it is similar to research result conducted by Lin (2005). In social support, the study found out that girls tend to have more significant support than boys. The result of present study is different from result of study conducted by Salselas and Marquez (2009), but similar to research from Sirard, Pfeiffer, and Pate (2006), and also Lin (2005). The present study found that there is no significant difference in swimming enjoyment between boys and girls, which is distinct from the findings of Salguero, González-Boto, Tuero, and Márquez (2003) but the same as Chang and Chen (2010). The result on learning satisfaction is different from what Chang and Chen (2010) had pointed out, who claimed that there was significant difference between boys and girls on their learning satisfaction. In grades, the study found no significant difference in participation motivation between children of different grades, which is similar to the result from Salselas, Gonzalez-Boto, Tuero, and Marquez (2007) on Portugal’s school children and teenager’s swimming, and is the same as Lin (2005) research finding. The study found no significant difference in social support between different grades, which is the same as finding from Lin (2005) and similar to that of Salselas and Marquez (2009). The results of the study on swimming enjoyment and

learning satisfaction is distinct from finding of Chang and Chen (2010), which indicated that there was significant difference of the two different grades. For contrasting areas, there are significant differences in participation motivation, swimming enjoyment, and learning satisfaction. The results are different from what Chang and Chen (2010) proposed that there wouldn’t have any impact on students’ learning satisfaction regarding class specialty or contents. For the practice time, the study found significant difference of motivation, social support, and swimming enjoyment. The result is similar to finding from Salselas, Gonzalez-Boto, Tuero, and Marquez (2007).

According to relating references and data of the components, the correlations of participation motivation, social support, swimming enjoyment, and learning satisfaction on school children’s swimming are stating as follow: participation motivation and swimming enjoyment have the same canonical loading quantity, which indicates that as motivation lowers, children will also feel less enjoyable in sports. The affected result corresponded to finding of research conducted by Vlachopoulos and Karageorghis (2005), which shows that motivation and enjoyment are highly related. Participation motivation and learning satisfaction have the same canonical loading quantity, indicating that motivation and satisfactory have positive relationship, higher the motivation, more satisfaction students feel in learning. Elementary school children’s social support and participation motivation have the same canonical loading quantity, which indicate a positive correlation and suggest that as the social support lowers, motivation for children also lowers. The finding is the same as what Isaksson, Lexell, and Skaer (2007) suggested: that social support may enhance abilities in jobs, surrounding, and knowledge of a person. The result also correspond with research conducted by Lin (2005) and Hsu (2006), the motivation and the support is positively related, so do participation and support. Social support and swimming enjoyment have the same canonical loading quantity, which indicates positive correlation and implying that as social support for swimming class lowers, then the lower the swimming enjoyment. The result remain the same as the idea that Stuntz and Weiss (2010) suggested: one finds swimming enjoyment by participating in activities; if one finds the activity positively related to social support, and then he or she will continue to participate in such activity. Social support and learning satisfaction have the same canonical loading quantity, which forms positive correlation, and also indicates that as support for swimming class lowers, learning satisfaction lowers, too. Swimming enjoyment and learning

satisfaction have the same canonical loading quantity, which indicates a positive correlation, suggests that as swimming enjoyment for swimming lowers, learning satisfaction lowers, too. The result is the same as Chen (2008) had proposed: every relating component in swimming enjoyment and learning satisfaction is positively related.

According to relating references and data of the components, predictions of participation motivation, social support, swimming enjoyment, and learning satisfaction on school children's swimming are as below: in every component of social support to participation motivation, friends support has the most predictive power, and this result is the same as what Ullrich-French and Smith (2009) pointed out, and also corresponds with research result from Lin (2005), that teammates' support can predict sports motivation. For every component of social support to swimming enjoyment, friends support has the most predictive power; the result is similar to what McCarthy, Jones, and Clark-Carter (2008) had pointed out. The prediction analysis of every component of social support to learning satisfaction found that friends support has the highest predictive power, which explains the fact that support between friends is an important element. For every component of participation motivation to swimming enjoyment, skills need has the best predictive power. The result is similar to result Stuntz and Weiss (2010) had found: participating in sports activities may enhance motivation and maintain participants' physical, social, and psychological health. It is also similar to research result that Ashford, Biddle, and Goudas (1993) had conducted. In the prediction analysis of every component of participation motivation to learning satisfaction, achievement needs has the most predictive power, which explains that students are eager to gain achievement. For the prediction of every component of swimming enjoyment to learning satisfaction, sports benefit has the best predictive power; the result is different from Chang and Chen (2010), who states that class atmosphere scored the highest. In social support and swimming enjoyment to participation, sports benefit also has the highest predictive power, and the result is similar to Stuntz and Weiss (2010)'s study results. For the prediction analysis of every component on motivation and social support to learning satisfaction, it is found that friends support has the highest predictive power, which explains that such support is one essential element.

According to the measured data, the affected relationships between participation motivation, social support, swimming enjoyment, and learning satisfaction of Chiayi area school children's swimming class are below: the study found that social support positively affects participation motivation,

which supports the previous finding of Weiss and Barber (1995) that social support has significant difference over school children's motivation. Social support has positive influence on swimming enjoyment; the result is consistent with McCarthy, Jones, and Clark-Carter (2008)'s finding that there is significant effect between social support and swimming enjoyment. Social support also positively affects learning satisfaction. Participation motivation positively affects swimming enjoyment; the result supports the previous finding of Vlachopoulos and Karageorghis (2005). Participation motivation also has a positive influence on learning satisfaction. Swimming enjoyment has a positive effect on learning satisfaction, which supports the previous finding of Chang and Chen (2010). From the evaluation of the SEM model of the present study, it found that if the six hypotheses are all established, then the research results of the study will be supportive.

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References

1. Ashford B, Biddle S, Goudas M. Participation in community sports centres: Motives and predictors of enjoyment. *Journal of Sports Sciences* 1993; 11(3): 249-256.
2. Barber H, Sukhi H, White SA. The influence of parent-coaches on participant motivation and competitive anxiety in youth sport participants. *Journal of Sport Behavior* 1999; 22(2):162-173.
3. Beets MW, Vogel R, Chapman S, Pitetti KH, Cardinal BJ. Parent's support for children's outdoor physical activity: Do weekdays and weekends matter? *Sex Roles* 2007; 56: 125-131.
4. Bokhorst CL, Sumter SR, Westenberg PM. Social support from parents, friends, classmates, and teachers in children and adolescents aged 9 to 18 years: Who is perceived as most supportive? *Social Development* 2010; 19(2): 417-426.
5. Carron AV, Hausenblas HA, Mack D. Social influence and exercise: A meta-analysis. *Journal of Sports and Exercise Psychology* 1996; 18(1): 1-16.
6. Chang CM, Chen CC. The study of correlation between sport enjoyment and learning satisfaction in physical education toward elementary school students in Nantou County. *Journal of Sport, Leisure and Hospitality*

- Research 2010; 5(2): 141-157.
7. Chang CY. Explore the recreation sports experiences for the older adults: A qualitative research of social network approach. Unpublished master's thesis, National Taiwan University of Physical Education and Sport, Taoyuan, Taiwan, 2008.
 8. Chang WY. The amused P.E. teaching for swimming courses. *National Sports Quarterly* 1998; 20(4): 4-6.
 9. Chen CC, Wu CC, Chang CM. The study of learning satisfaction towards physical education course of elementary school children in the Nantou County. *Journal of Chung Jen College of Nursing, Health Sciences and Management* 2007; 1: 55-66.
 10. Chen CC. The study of correlation between sport enjoyment and learning satisfaction in physical education toward elementary school students in Nantou County. Unpublished master's thesis, National Chiayi University, Chiayi, Taiwan, 2008.
 11. Chen CH. A study on participation motives for elementary school table tennis teams from both the Tainan City. *Journal of Physical Education of National University of Tainan* 2009; 4: 49-63.
 12. Chen JZ. Application of swimming noodles in swimming course. *Physical Education of School* 2004; 14(4): 29-35.
 13. Chen KJ. The application of the mid-term program of students swimming ability enhancement. *National Society of Physical Education of the Republic of China* 2002; 16(1): 129-136.
 14. Chen ML. The effect of psychological-need and social-support on sport-enjoyment of recreation participant. Unpublished master's thesis, National Yunlin University of Science and Technology, Yunlin, Taiwan, 2012.
 15. Chen WC. An investigation of the implementation of swimming teaching in elementary schools in Pingtung County. Unpublished master's thesis, National Pingtung University of Education, Pingtung, Taiwan, 2003.
 16. Chuang HY, Chen CC, Chang CM. The development of the sport enjoyment scale towards physical education course of elementary school children. *Yuntech Sport Journal* 2007; 10: 111-122.
 17. Freedson PS, Rowland TW. Youth activity versus youth fitness: Let's redirect our efforts. *Research Quarterly for Exercise and Sport* 1992; 63: 133-136.
 18. Gould D, Medbery R, Tuffey S. Sources of fun and motivation in age group swimmers. *Journal of Swimming Research* 2001; 15: 1-11.
 19. House JS. *Workstress and social support*. MA: Addison-Wesley, 1981.
 20. Hsieh MY. Tainan city country elementary student health and the sports study ambit. Study degree of satisfaction to investigate. Unpublished master thesis, National University of Tainan, Tainan, Taiwan, 2006.
 21. Hsieh WL. The study of the effect of perceived teacher leadership behavior, motivation on sport enjoyment toward higher grade student participated in sport clubs in Nantou County. Unpublished master's thesis, Chaoyang University of Technology, Taichung, Taiwan, 2010.
 22. Hsu PC. Research on participation motivation and social support learning achievements by students of elementary school handball teams in Taipei County. Unpublished master's thesis, University of Taipei, Taipei, Taiwan, 2006.
 23. Hsu YH, Huang YT. *Pedagogy in physical education*. Taiwan, Taipei: Yi Hsien Publishing Co., Ltd, 2001.
 24. Isaksson G, Lexell J, Skaer L. Social support provides motivation and ability to participate in occupation. *The Occupational Therapy Journal of Research, Occupation, Participation and Health* 2007; 27 (1): 23-30.
 25. Lai JT. The Study of elementary school students' learning satisfaction with physical education in Taipei County. Unpublished master's thesis, National Taiwan University of Physical Education and Sport, Taoyuan, Taiwan, 2004.
 26. Lee CT. A study on the physical-mental health and learning satisfaction with physical education in primary school children. Unpublished master's thesis, National Pingtung University of Education, Pingtung, Taiwan, 2002.
 27. Lee YJ. A study of the influence of instructional innovation on learning satisfaction and study achievement. *The Journal of Human Resource and Adult Learning* 2008; 4(2): 43-54.
 28. Liao JY. A study of leisure attitude and social support on leisure voluntary performance behavior of biker. Unpublished master's thesis, National Yunlin University of Science and Technology, Yunlin, Taiwan, 2009.
 29. Lin CH. A study of the participation motivation and social support of tchoukball players in elementary school in Taiwan. Unpublished master's thesis, University of Taipei, Taipei, Taiwan, 2009.
 30. Lin HI. Research on participation motivation and social support by students of swimming teams in Tainan City elementary school.

- Unpublished master's thesis, University of Taipei, Taipei, Taiwan, 2005.
31. Mandigo JL, Couture RT. An overview of components of fun in physical education, organised sport and physical activity programs. *Avante* 1996; 2(3): 56-72.
 32. McCarthy PJ, Jones MV, Clark-Carter D. Understanding enjoyment in youth sport: A developmental perspective. *Psychology of Sport and Exercise* 2008; 9(2): 142-156.
 33. Salguero A, González-Boto R, Tuero C, Márquez S. Development of a spanish version of the participation motivation inventory for young competitive swimmers. *Perceptual Mot Skills Journal* 2003; 96(2): 637-646.
 34. Salselas V, Gonzalez-Boto R, Tuero C, Marquez S. The relationship between sources of motivation and level of practice in young Portuguese swimmers. *The Journal of sports medicine and physical fitness* 2007; 47(2): 228-233.
 35. Salselas V, Marquez S. Perceptions of the motivational climate created by parents of young portuguese swimmers. *Perceptual Motor Skills Journal* 2009; 108(3): 851-861.
 36. Sirard JR, Pfeiffer KA, Pate RR. Motivational factors associated with sports program participation in middle school students. *Journal of Adolescent Health* 2006; 38(6): 696-703.
 37. Strean WB, Holt NL. Coaches', athletes', and parents' perceptions of fun in youth sports: Assumptions about learning and implications for practice. *Avante* 2000; 6(3): 83-98.
 38. Stuntz CP, Weiss MR. Motivating children and adolescents to sustain a physically active lifestyle. *American Journal of Lifestyle Medicine* 2010; 4(5): 433-444.
 39. Teven JJ, McCroskey JC. The relationship of perceived teacher caring with student learning and teacher evaluation. *Communication Education* 1997; 46(1): 1-9.
 40. Tsai CH. A study on Keelung City elementary school students' motivation for joining sports teams and their social support. Unpublished master's thesis, University of Taipei, Taipei, Taiwan, 2009.
 41. Tuffey S, Medbery R, Gould D. Kids tell us what is fun. *USA Swimming and The U.S. Ski and Snowboard Association* 2006; 1-8.
 42. Ullrich-French S, Smith AL. Social and motivational predictors of continued youth sport participation. *Psychology of Sport and Exercise* 2009; 10(1): 87-95.
 43. Vlachopoulos, SP, Karageorghis CI. Interaction of external, introjected, and identified regulation with intrinsic motivation in exercise: Relationships with exercise enjoyment. *Journal of Applied Biobehavioral Research* 2005; 10(2): 113-132.
 44. Weiss MR, Barber H. Socialization influences of collegiate female athletes: A tale of two decades. *Journal of Sex Roles* 1995; 33(1/2): 129-140.
 45. Wu CC. A study of correlation between different learning styles, sport enjoyment and learning satisfaction in physical education. Unpublished master's thesis, National Yunlin University of Science and Technology, Yunlin, Taiwan, 2008.
 46. Wu CM. A study on elementary school students' team sport participation and social support in Taipei County. *Sport Pedagogy International Conference* 2004; 191-199.
 47. Young DR, Gittelsohn J, CharIeston J, Felix-Aaron K, Appel LJ. Motivation for exercise and weight loss among African-American women: Focus group results and their contribution towards program development. *Journal of Ethnicity and Health* 2001; 6(3/4): 227-245.

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