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Construction and Validation of Students' Representations Questionnaire of Sport (SRQS)

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Abstract

The purpose of the present investigation is to evaluate the psychometric properties of the French version of the Students' Representations Questionnaire of Sport (SRQS). It aims to construct and validate a Questionnaire for teenager Students designed to assess the extent of their representations to practice the sport of pole vaulting in educational environment. For this purpose, the SRQS was applied to 361 students (175 girls and 186 boys; age ranges between 15 and 18 years) participated in our study. The Confirmatory Factor Analysis showed that the French Questionnaire SRQS maintains good psychometric properties, supporting the representation of students for the practice of pole vault sport at school. Regarding factor analysis, the correlations between the Questionnaire subscales were accepted; internal consistencies were good; and the pole vault interest indexes were consistent with previous researches. Therefore, it is concluded, that the findings corroborate the application of SRQ-S as a psychometric useful measure of the students' representations of the practice of pole vault sport in educational setting, highlighting its validity and reliability. The integration of Pole Vaulting in physical education might be a gain.

Keywords: Validation; Questionnaire; Representations; Assessment; Students; Sport

Introduction

The concept of representation undertakes a position in social psychology and perception of sports activities. This notion was developed and assigned by Durkheim in his social psychology study as a concept of individual and collective representations. The theory of social representation might be able to offer a creative approach for studying how the school and sports' culture construct collective and educational issues. Indeed, Moscovici [1] examined the method in which scholarly discourse is transformed into a commonsense discourse. It means the system path from theoretical concepts to representations. In psychosocial investigate, quantitative study process is suitable when authentic data are requisite to answer the research inquiry of perceptions, attitudes, representation, beliefs and preferences [2]. Whereas, qualitative methods are used to reply issue concerning experience, meaning and perspective as a point view of the contributor, answering to concerns with 'what' 'why' and 'how' questions rather than 'how many [3,4]. For example, the good questionnaire should present the design which depends on whether the researcher needs to collect exploratory information as qualitative information for the issues of enhanced understanding or the generation of hypotheses on a topic or quantitative information to examine specific hypotheses that have been operationalized before.

A gradual number of studies are beginning to indicate that students' representations of different educational topics can collaborate to shed light on how the teaching of these topics may be more meaningful [5] as well as educators' conception [6,7] and psychometric properties for sport [8]. The study that will be described here will be concerned with student's representations of interest in the practice of pole vaulting in school environments. So, the need of doing this research is to understand the nature of the student's awareness of the sport activity and provides answers to the current problematic. It was aimed at understanding participant belief or attitude that has been tested for validity and reliability. There have been limited studies to investigate the importance of representation assessment on new adopted sport of performance for its implementation in physical education program. This questionnaire or tool might be providing baseline data of students' level on physical education and would help to identify types of representation that students are still lacking.

Representations of Students to The Practice of Pole Vault Sport

The purpose of this study was twofold:

a. Construct a French version of a questionnaire determining five students' representations scales, for the integration of the sport of pole vaulting into the educational environment.

b. To study the exploratory analysis through the factorial structure of the questionnaire, the internal consistency and the correlations between the determined variables.

Study 1

Participants and procedure

The number of participants for this study is 147 volunteers (83 girls and 74 boys), aged between 15 and 18 years old. They attend permanent EPS courses. They are informed that the questionnaire is anonymous and that it is not a test. Each student must mention their age and gender for the interest of the research. All data remains confidential. Participants are asked to complete the questionnaire for a period of 10 to 15 minutes.

Questionnaire to adolescent students. The Questionnaire before the cycle will be intended to bring out several variables (perceived risk, sensation of practice, interest to the activity, body image and activity value).

a) The students' perception regarding their perceived risk to pole vault practice;

b) The students' sensations to pole vault in general;

c) Their interests to the pole vault lesson;

d) The body image;

e) The activity values.

Results and discussion

a) Factor analysis: The observation of the factorial structure was determined using the varimax rotation. This analysis concerns the five factors of students' conception of the integration of sports activity, the pole vault, and the school environment. It has been possible to consider that the eigen value is greater than 1 [9], as well as developing 83% of the total variance. This value is adequate according to [10] (Table 1).

Table 1: Principal component analysis of inquired factors with oblique rotation.

	Factors				
Items Measuring Students' Representations	**Perceived Risk**	**Sensation**	**Interest**	**Body Image**	**Activity Value**
I1	0.887				
I2	0.776				
I3	0.816				
I4	0.875				
I5		0.761			
I6		0.943			
I7		0.944			
I8		0.792			
I9			0.96		
I10			0.959		
I11			0.963		
I12			0.864		
I13				0.577	
I14				0.691	
I15				0.789	
I16				0.8	
I17					0.881
I18					0.888
I19					0.789
I20					0.876

b) Average internal consistency and correlation between subscales: The results in Table 2 show that the five factors of students' conceptions showing positive saturation values, greater than 0.5. This is approved by [11]. Results indicate very high average values for sensation factors (pleasure), learner interests, and the value of pole vault activity. But the average

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values associated with the representations and the image of the body are close to the average of the scale. Whereas for the internal consistencies of the five subscales, we find that they vary between 0.78 and 0. 8 4. Hence the alpha values [12], are acceptable, and this is confirmed by [13].

The results observed in Table 2 determine the nature of correlation between the different subscales, which determine the different components of students' representations of pole-vaulting sport. Overall, the correlation indices are significant relationships between the five factors studied.

Table 2: Averages, standard deviation, internal consistency and correlation between subscales.

Subscales								
	M	SD	Cronbach's Alpha	1	2	3	4	5
Perceived Risk	3.03	1.075	0.786	_				
Sensation	3.07	1.145	0.845	.421 **	_			
Interest	2.89	1.105	0.796	.637 **	.450 **	_		
Body image	3.24	1.155	0.785	.755 **	.464 **	.627 **	_	
Activity Value	3.53	1.094	0.834	.491 **	.387 **	.496 **	.453 **	_

Factor validity of the instrument

The objective of this study was threefold:

a) Determine the confirmation of the questionnaire factor structure and the internal consistency between the five instrument factors for a larger population of students.

b) Validate the relationships between the subscales determined in the first study.

c) Evaluate the influence of gender on student responses in this questionnaire.

Study 2

Participants and procedure

The sample was constructed of 361 participants (175 girls and 186 boys), the age varies between 15 and 18 years. They take EPS courses in high school. The procedure for passing the questionnaire is like that used in previous studies. Initially, students responded to the factors measuring risk and feel at the pole vault. In the second stage of the assignment, students were asked to complete the questionnaire measuring the interest of learners in this practice. And finish by answering the questionnaire measuring the value of the activity and the image of the body.

Measures

This study is based on the construction and validation of questionnaires on students' representations of PSE. As well as theories of students' representations of sports practices.

a) Perceived risks: these are four items (e.g., "Pole vaulting is a very risky sporting activity").

b) Sensations felt during the practice of pole vault: (e.g., "If I practice pole vault, I feel enthusiastic").

c) Interest to the activity of pole vault: (e.g., "a sport that develops, in a global way, my driving ability").

d) Body image: (e.g., "If I practice pole vault, I will have a well-balanced body").

e) Values of the activity: (e.g., "a very useful sport").

The Students' representations questionnaire was expressed on the scale of Likert adapted in five points. [1]: not at all agree, [5]: completely agree.

Table 3:Confirmative factor analysis.

Factor Loadings	X^2 Chi Square	df	X^2/df	P	CFI	NNFI	RMSEA	RMSEA [90% CI]	SRMR
From 0.64 to 0.92	231.46	87	2.66	< 0.01	0.95	0.93	0.061	[0.056–0.076]	0.047

Note: RMSEA (90% CI) = Root Mean Square Error of Approximation with Confidence Interval; SRMR = Standardized Root Mean Square Residual; CFI = Comparative Fit Index; NNFI = Non-Normed Fit Index.

Results and discussion

a) Confirmatory factor analysis and internal consistency of the measurement tool: Confirmatory factor analysis was performed using the Lisrel 8.4 software [14]. Thus, compared to Study 1, there was a concordance in the results obtained in the two studies. However, the hypothetical model suggests that any statement of each factor of the instrument had to fill in their specific confidential variable. As a result, a correlational matrix is obtained that raises the responses examined in terms of observed variables [15]. And therefore, the results confirm the factorial validity of the hypothetical model through (X2, p <.001); (CFI, GFI, EVCI and NNFI, range from 0.91

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to 0.95). As well as RMSEA = .06; this is the confidence interval for RMSEA = .056 / .076. In addition, the estimated saturation standard coefficients are greater than .62 as well as significant. For the remaining dimensions we can observe some linear significant relations in Table 3. Usually, it is considered that the fit is good when Chi Square/df < 3=acceptable; CFI ≥0.90=good fit; SRMR and RMSEA ≤ 0.08 = adequate fit) [16,17], and X 2/df < 3 [18].

b) Analysis of the temporal reliability of the tool:

This study has two objectives:

i. Test the temporal fidelity of the instrument.

ii. Confirm the internal consistency of each parameter of the questionnaire.

Study 3

Participants and procedure

This study presented 49 volunteers (28 girls and 21 boys). The age of the population varies between 15 and 18 years. They participate in PES lessons. The procedure of passing the questionnaire, like that of previous studies, is repeated twice in a row on the same population. The passing of the second questionnaire, was there after fifteen days after the first one (test 2 = initial test + 15 days).

Results and discussion

The results of the correlational analysis confirmed the temporal stability of the student design measurement tool (Table 3). The Spearman correlation obtained is greater than 0.60. This was confirmed by an academic study of [19]. The internal consistencies of each factor in the students' conceptions were like those of the observed responses. In addition, these alpha values are between 0.84 and 0.95. And this confirms the previous studies.

The reliability of the SRQ-S subscales and of each of their items can be esteemed moderate or high (Table 4). The Raykov [20] rho composite reliability coefficient of each of its five factors has values ranging between 0.64 and 0.92 [20]. Also, the internal consistency of subscales (perceived risk, sensations, interests, body image and activity value) can be considered moderate or high and are respectively (0.76, 0.89, 0.86, 0.73, and 0.92).

Table 4: Reliability and internal consistency between inquired subscales in the test-retest assessment.

	Internal Consistency Chronbach's Alpha		Reliability Test- Retest ρ
	T1	T2	T1-T2 15 days
Perceived Risk	0.84	0.91	0.72
Sensation	0.9	0.95	0.64
Interest	0.94	0.92	0.66
Body Image	0.92	0.89	0.68
Activity Value	0.86	0.87	0.92

Note: ρ = Raykov's rho coefficient (composite reliability) Test-retest reliability evaluates reliability across time; Internal consistency reliability: It evaluates individual inquiries in comparison with one another for their ability to give consistently appropriate results.

Conclusion

Our findings show important properties of validity and reliability of students' representations questionnaire to specific sport. First, consistency of questions of representation may be well estimated in the questionnaire summarizing the perceived five subscales for the dichotomy of questions. Second, Items of the questionnaire were filtered to twenty statements as reliable measure of a specific sport preferred. Third, reliability of the attitudinal scales was substantially acceptable. Reliability is an important part of the questionnaire validation and highlight applicability of the questionnaire.

Limitations of the Present Work

A limitation of this work consists in the needs to generalization of our findings to wide population or regions, for achieving more reliability. Another limit of this study might be related to the student motivation profile [21,22] or his attraction to some sports (Table 5).

Table 5: Students' Representations Questionnaire of Sport (SRQS).

Items et Sous-échelles Mesurant les Représentations des Élèves	1	2	3	4	5
Risque Perçu					
1) La pratique de ce sport est risquée, mais je peux me protéger					
2) J'ai souvent la répugnance et la paresse à l'effort physique					
3) Ce sport est une activité dangereuse					
4) La pratique de ce sport est risquée					
Sensation à la Pratique					
5) J'éprouve de plaisir et de la satisfaction à apprendre des nouvelles techniques de cette pratique					
6) Je m'oublie en pratiquant ce sport et je vois toujours la séance pratique un bon moment					
7) Cette activité me permet de sensations uniques					
8) Cette pratique sportive est très spectaculaire					
Intérêt à l'Activité					
9) Il est plus important de savoir faire ce sport, plutôt que de pratiquer des tâches motrices faciles					

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10) Cette activité est le moyen que je choisi pour acquérir des habilités dans d'autres sports					
11) Si j'étudie sport, je pourrais développer beaucoup de compétences motrices					
12) Avec cette pratique, j'ai la meilleure façon pour éliminer les tensions					
Image du Corps					
13) Je suis satisfait de mon corps					
14) Globalement, je suis fier de mes capacités physiques					
15) Je me sens mieux physiquement, si je pratique ce sport particulier					
16) Je ne me sens pas bien physiquement sur ce que je peux faire avec ce sport					
Valeur de l'Activité					
17) J'aime vraiment cette pratique particulière					
18) Ce sport peut mieux développer mes qualités physiques					
19) Je pense que la pratique de cette activité nécessite plus de concentration et de confiance					
20) Je pense qu'avec ce sport, le contrôle des mouvements de mon corps sera mieux amélioré					

Note: [1]: Not at all agree; [2]: Slightly agree; [3]: Moderately agree; [4]: Agree; [5]: Completely agree

Pas du tout en Accord	Légèrement en Accord	Moyennement en Accord	En Accord	Complètement en Accord
1	2	3	4	5

Encercler un chiffre entre 1 (Pas du tout en accord) et 5(Complètement en accord) / [Circle one number between 1 (Not at all agree) and 5 (completely agree)]. I prefer to practice the sport of "Name of Sport" because… / [Je préfère pratiquer le sport du "Nom du Sport" parce que...].

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