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Preliminary validation of the Exercise Attentional Questionnaire in Physical Education

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INTRODUCTION

- In exercise context, when the instructor observes non-efficient behaviour, he often evokes distraction or lack of concentration (Maurer and Freiling, 1994).
- Very few questionnaires have been developed to measure attentional states within the physical education context.
- The purpose of this study was to develop and prevalidate the “Exercise Attentional Questionnaire (EAQ)” among Faculty of Sport Sciences students.



METHODS

Participants:

- 164 students among Faculty of Sport Sciences students
- Impact of age, gender, health and sport experience were controlled.

Procedure:

- After an item selection using a committee approach (N=20), the factorial structure of the questionnaire was tested using exploratory and confirmatory factor analysis
- External validity was analysed with self-confidence and anxiety relationship (Martens, Burton, Vealey, Bump and Smith, 1990, Competitive anxiety in sport, 127-140).
- Social desirability bias was controlled with a French adaptation (Valla and al., 1992) of the Marlowe-Crowne Desirability Scale short version (Reynolds, 1982).

Shortly after a sport exercise including instructions, subjects should answer to these psychometric scales.

Statistical Analysis (Software SPSS 22):

- Exploratory Factor Analysis: Eigenvalue > 1, factor loading > .40, no crossloading, cumulative explained variance > 50%.
- Confirmatory Factor Analysis: Chi² (χ^2), Comparative Fit Index and Tucker-Lewis Index (*CFI and TLI, values $\geq .90$*), Root Mean Square Error of Approximation (*RMSEA, values $\leq .08$*), and RMSEA 90 confidence intervals.
- Cronbach’s alpha to measure internal consistency.
- Correlations of Pearson to analyse external validity with anxiety.
- One-way ANOVAs were used with variables as gender, social desirability, sports experience and sports teacher.

RESULTS

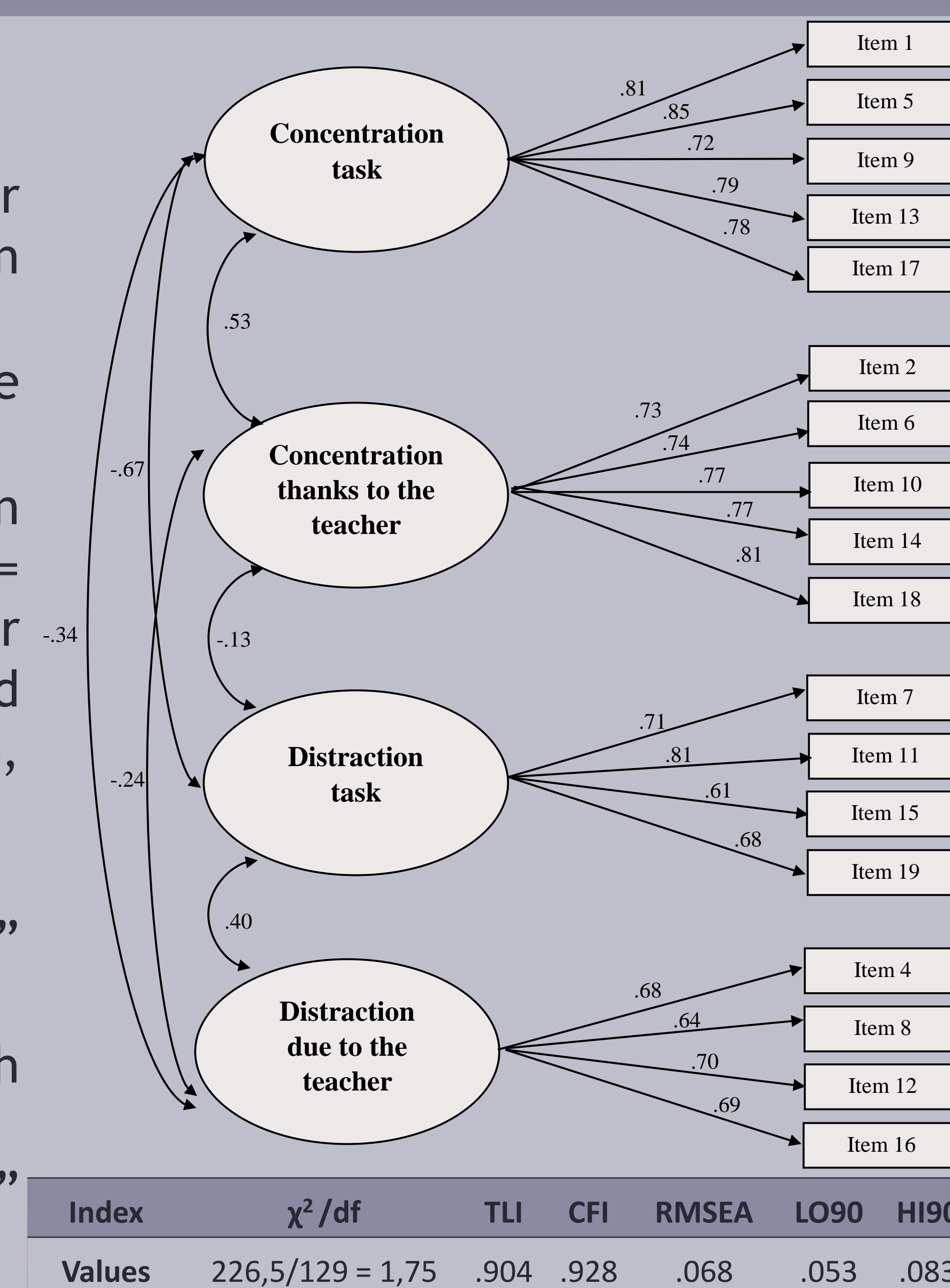
Factors with Cronbach's Alpha	18- EAQ Factor			
	1	2	3	4
CONCENTRATION TASK ($\alpha = .884$)	18.590% ^b			
Item-1	.783			
Item-5	.716			
Item-9	.836			
Item-13	.652		-.480	
Item-17	.775			
CONCENT. TEACHER ($\alpha = .875$)	19.027 % ^b			
Item-2	.682			
Item-6	.830			
Item-10	.854			
Item-14	.764			
Item-18	.814			
DISTRACTION TASK ($\alpha = .775$)	15.618 % ^b			
Item-7		.678		
Item-11		.775		
Item-15		.731		
Item-19		.762		
DISTRACT. TEACHER ($\alpha = .793$)	14.256% ^b			
Item-4		.787		
Item-8		.766		
Item-12		.745		
Item-16		.755		
Total cumul. explained variance	67.491 %			

One-way ANOVAs:

- No differences between boys and girls ($p > .05$).
- “Higher social desirable” have higher “concentration on the task” and “concentration through teacher support” ($p < .05$)
- “No practice” have higher “concentration on the task” than “individual sport”
- And depending on the teacher giving the lesson (N=6) for “concentration on the task” ($F(5,158) = 3,666$, $p = .004$), “concentration through teacher support” ($F(5,158) = 8,700$, $p = .000$) and “distraction on the task” ($F(5,158) = 5,274$, $p = .000$).

Correlations of Pearson:

- “self-confidence” with “concentration on the task” ($r = -.275$; $p < .001$),
- “self-confidence” with “concentration through teacher support” ($r = -.188$; $p < .05$)
- “cognitive anxiety” and “distraction on the task” ($r = .159$; $p < .05$).



SUMMARY AND CONCLUSIONS

- Psychometric scale comprised of four factors with satisfactory internal consistency
- Low but significant external validity with self-confidence and cognitive anxiety
- Sensitive to several interesting factors like “the teacher giving the lesson” and the “sport experience”.

Present findings provide preliminary evidence for the validity of the EAQ. The present work is in progress to increase the sample and examine the structure validity among other samples and other exercises contexts.

ACKNOWLEDGMENTS

- Myers, N. D., Martin, J. J., Ntoumanis, N., Celimli, S., & Bartholomew, K. J. (2014). Exploratory bifactor analysis in sport, exercise, and performance psychology: A substantive methodological synergy. *Sport, Exercise, and Performance Psychology*, 3(4), 258.