

## Assessing the Validity and Reliability of SIMS in A Pilot Study on Dance Sport Course Undergraduate in China

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### Abstract

The process of inspiring oneself to pursue one's goals and maintaining that interest over time is referred to as motivation. The connotation of this definition of motivation is usually believed to be the heart of motivation; the only exception to this is the omission of the specific mechanism of motivation, which is addressed in the definition. The process through which students connect their intrinsic needs (a high interest in learning, a strong want to learn) with the external stimuli (expectations from teachers, etc.) in the context of learning activities, enabling the motivation and maintenance of learning behaviours, is referred to as the learning motivation process. Utilising the Situational Motivation Scale (SIMS) established by Guay et al. (2000), the goal of this work is to evaluate the validity and reliability of the Motivation Scale in the context of a pilot study involving undergraduate students enrolled in a Chinese Dance Sport course utilising the Situational Motivation Scale (SIMS). A survey of the relevant previous literature, mathematical statistics, and logical analysis were the research methodologies employed.

### Keywords

Motivation, Dance Sport, Situational Motivation Scale (SIMS), Reliability, Validity.

### 1. Introduction

Motivation is a crucial element in achieving success, goals, and objectives. The inner drive that propels people to pursue their objectives and maintain their efforts is known as motivation. It serves as the catalyst for action and drive, inspiring people to work hard and pursue their goals. Intrinsic and extrinsic motivation can be distinguished. A person's deep-seated internal desires, passions, and interests are examples of intrinsic motivations. Intrinsic motivation is what motivates someone to keep putting in effort and pursuing greater goals when they are engaged in something they enjoy. Extrinsic motivation, in contrast, comes from outside sources like incentives, admiration, or the desire to avoid punishment. Although extrinsic motivation can spur action, its effects are frequently shorter-lived and less persistent than those of intrinsic motivation. Motivation is significant because it has a beneficial impact on a person's actions and results. Strong motivation increases a person's propensity to persist in the pursuit of their objectives despite obstacles and disappointments. An individual's attention and effectiveness can be enhanced by motivation, which will help them deal with difficulties and conquer hurdles. Nevertheless, motivation is not always constant and can be affected in different ways. The amount of motivation a person has can be influenced by his or her beliefs, objectives, and values. Environmental elements like encouragement and support can also affect someone's motivation. Additionally, a person's experiences and past successes may also influence their level of drive. Therefore, a person's growth and success depend on their ability to comprehend the sources of motivation and how they are produced. As a subcategory of "motivation," learning motivation is the internal incentive that propels individuals to seek out information, work hard in their

studies, and succeed academically. It is a crucial component of learning and has a significant influence on a person's success and performance in the classroom. The Situational Motivation Scale's (SIMS) reliability and validity were examined in this study through a pilot study with 53 students enrolled in a dance sport course in China. The analysis's findings suggested that the Situational Motivation Scale (SIMS), which can be used to investigate learning motivation in physical education-related majors in China, has good reliability and validity. Additionally, it offers crucial technical assistance and construction guidance for sport-related psychology.

## 2. Literature Review

### 2.1. Definition of Motivation

According to D. H. Schunk et al. (2012), motivation is "the process by which goal-directed activities are instigated and sustained[1]." While there are others, the following four ideas are highlighted in this definition: Motivation is a process that deals with the beginning and continuation of activity aimed at reaching a goal. It is goal-focused. Pintrich (2003) outlined seven major research issues for motivation and general research criteria to follow while examining these questions[2]. Additionally, motivation is not a monolithic concept. Although it might seem clear, lay educators and academics frequently refer to "motivation" without being precise about a theory or conceptual framework. Each theory promotes a distinct facet of motivation, a different stage of learning, a different set of learning tasks, and a different set of outcomes, although they rarely directly contradict one another. It might be difficult to gauge the success of motivational research. Results (and thus implications) for mastery and performance-approach goal orientations, for instance, vary for various outcomes. Choice of tasks, effort, persistence, and achievement were recognised as the four general motivation outcomes by Schunk (2012), who also offered techniques for measuring each of them. Additionally, students can rate how motivating they think a course is. According to Cook, D. A., et al. (2009), the theory and the research topic will determine which result(s) are most pertinent to a particular study[3]. For each outcome, there are often a number of measurement techniques and particular instruments, each with advantages and disadvantages. Self-report measures, on the other hand, are constrained by the accuracy of self-perceptions, whereas behaviour-focused measures downplay the significance of cognitive processes. According to Cook, D. A., et al. (2015), evidence to support the validity of scores for all instruments should be consciously designed, gathered, and assessed[4]. Researchers should also investigate how well incentive theory works in real-world situations. Understanding seemingly incongruent findings may be made easier by connecting motivational concepts with certain cognitive processes (Harris, K. R. et al., 2012)[5]. To comprehend conceptual nuances, current data, prospective interactions, significant outcomes, and timely issues, researchers are encouraged to further examine theory-specific literature (Cook, D. A., 2014)[6].

### 2.2. Situational Motivation Scale (SIMS)

SIMS, or the Situational Motivation Scale, A gauge of situational (or state) motivation for a selected task is the 16-item Situational Motivation Scale (Guay et al., 2000)[7]. The four items in each subscale of this self-report questionnaire are intended to assess internal motivation, identified regulation, external regulation, and amotivation. The question "Why are you currently engaged in this activity?" is posed to the participants. A 7-point Likert scale is used to score each item, with 1 being "corresponds not at all" and 7 being "corresponds exactly."

Some of SIMS' research in the fields of biology and health is: Various organisations have suggested that physical education (PE) should play a central role in increasing adolescents' physical activity (PA) levels. The purpose of Lonsdale et al.'s 2009 study was to examine relationships between students' self-determined motivation and their PA behaviour during a

structured PE lesson led by their teacher and a free-choice period in which they were not required to be active[8]. The purpose of Gao et al. (2011) was to examine (a) the effects of three curricular activities on students' situational motivation (intrinsic motivation [IM], identified regulation [IR], external regulation, and motivation [AM]) and physical activity (PA) levels, and (b) the predictive strength of situational motivation for PA levels[9]. Farida Mahmoud Hassona et al. (2013) assessed achievement goal dominance, self-determined situational motivation, and competence in high-level swimmers before and after three training sessions set at different working intensities (medium, sub-maximal, and maximal)[10]. A formative study was conducted to examine the effect of a faith-based pedometer programme (Virtual Umra) on psychological correlates of PA behaviour and their contribution to school-time changes in PA among Muslim adolescents (Nicaise et al., 2014)[11]. Exploratory structural equation modelling and confirmatory factor analyses of the data showed that a two-factor, 16-item solution (i.e., 8 pleasant/functional items and 8 unpleasant/dysfunctional items) of the PBS-SPE scale reached satisfactory fit indices (Bortoli et al., 2018)[12]. (treatment n = 104; control n = 42; assessed pre/post intervention): motivation, external regulation, identified regulation, and intrinsic motivation were assessed via the Situational Motivation Scale (SIMS) (Schiwal et al., 2020)[13]. Other influential works include Henrique-Sanches et al. (2023)[14].

### **3. Methodology**

#### **3.1. Research subjects and selection**

53 students of the dance sport course undergraduate in Zhuhai, China, were used as the subjects of this pilot study.

#### **3.2. Literature Review Method**

Based on extensive collection and reading of literature on motivation, motivation to learn, the Situational Motivation Scale (SIMS), etc., the relevant contents were organised and utilised.

#### **3.3. Questionnaire Survey Method**

In this study, 53 questionnaires were distributed to 53 students in Zhuhai, China, and 53 were returned with a valid return rate of 100%. The questionnaire was the Situational Motivation Scale (SIMS), developed by Guay et al. (2000). 16 items were designed; each item was scored on a 7-point Likert scale; each item had a different level of agreement; and respondents could select items according to their perceptions of the actual situation and check the alternative answers. A score of 7 means "very consistent", 6 means "consistent", 5 means "somewhat consistent", 4 means "neutral", 3 means "somewhat inconsistent", 2 means "inconsistent," and 1 means "very inconsistent."

#### **3.4. Mathematical and statistical methods**

After finishing the raw data of this survey, the questionnaire data of the respondents was processed with statistical software, SPSS 26.0 and Excel, respectively, and Cronbach's alpha value, KMO, and Bartlett's test analysis were done.

#### **3.5. Logical Analysis**

In the process of writing the thesis, the results of pedagogical and sociological knowledge and questionnaires were used to combine motivation and physical education in a logical analysis. After testing the reliability and validity of the Situational Motivation Scale (SIMS), the application of the SIMS in the field of physical education was discussed and suggestions were made.

## 4. Results and Discussion

### 4.1. Reliability of the Learning Motivation Scale

Measures of reliability and analyses of the Situational Motivation Scale (SIMS) used in the pilot research of an undergraduate dance sport course in China are as follows: The Learning Motivation Scale is comprised of a total of four dimensions, the first of which is known as "intrinsic motivation," the second of which is known as "identified regulation," the third of which is known as "external regulation," and the fourth of which is known as "motivation." They include the following categories of items: intrinsic motivation, which includes items 1, 5, 9, and 13; identified regulation, which includes things 2, 6, 10, and 14; external regulation, which includes items 3, 7, 11, and 15; and motivation, which includes items 4, 8, 12, and 16. After the pilot research, the data were subjected to mathematical and statistical analysis. The results of this analysis can be seen in Table 1, which displays the Cronbach's alpha value for each dimension. The dependability of the measure is demonstrated by the fact that Cronbach's alpha value ranges from 0.732 to 0.905. The following are the corresponding alpha values for each dimension: intrinsic motivation = 0.905, identified regulation = 0.786, external regulation = 0.732, and amotivation = 0.791. According to Hair et al. (2011), a score of 0.6 or above on the Cronbach's alpha gives evidence that an instrument is reliable and acceptable[15]. Therefore, the results of the reliability measure of the Situational Motivation Scale (SIMS) in this pilot study utilised in the Dance Sport course for undergraduates in China were satisfactory. This can be deduced from the fact that the outcomes of the study were positive.

**Table 1.** Reliability index for the Situational Motivation Scale (SIMS)

Dimension	No	Cronbach's alpha (Value)
Intrinsic motivation	1	0.905
	5	
	9	
	13	
Identified regulation	2	0.786
	6	
	10	
	14	
External regulation	3	0.732
	7	
	11	
	15	
Amotivation	4	0.791
	8	
	12	
	16	

### 4.2. Validity of the Learning Motivation Scale

The reliability of the Situational Motivation Scale (SIMS) was measured and analysed in the pilot study that was implemented in the Dance Sport course that undergraduates took in China. In this study, a construct validity analysis was performed on the Situational Motivation Scale (SIMS). The KMO and Bartlett tests were utilised to determine whether or not the data were adequate for the construct validity analysis. According to Kaiser, KMO, and Bartlett's test, a number larger than 0.5 is considered acceptable. However, in actual applications, the KMO value should ideally be greater than 0.7. In this investigation, the KMO and Bartlett's Test were carried out on the data obtained from the pilot study, and the outcomes of the tests are presented in Table 2. The results of the test show that the KMO value is 0.818, which is higher

than the validity test threshold of 0.7. Additionally, the chi-square statistic of Bartlett's test exceeded the level of significance required for 5%, indicating that the test was statistically significant. Therefore, the results of the validity measure of the Situational Motivation Scale (SIMS) in this pilot study utilised in the Dance Sport course for undergraduates in China were satisfactory. This was determined by the fact that the outcomes of the study were positive.

**Table 2.** KMO and Bartlett's Test of the Situational Motivation Scale (SIMS)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.818
Bartlett's Test of Sphericity	Approx. Chi-Square	637.627
	Df	120
	Sig.	.000

## 5. Conclusion

It is abundantly obvious from the research discussed above and the analysis of the findings that motivation is a key factor in determining personal success and achievement. People are motivated to take action and make an effort in order to continue pursuing their goals, overcome obstacles, and succeed by an inherent force. Individual behaviour and outcomes are influenced by both intrinsic and extrinsic motivation, although intrinsic motivation is more enduring and significant. Based on the findings of this study, we propose that physical educators can effectively use the Situational Motivation Scale (SIMS) to support students in maintaining motivation, overcoming challenges, and achieving their learning objectives.

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