RESEARCH ARTICLE

A Wall Climbing Learning Model For University Students

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ABSTRACT

This research entitled rock climbing learning model uses research and development steps from Borg and Gall which consist of 10 steps of the Borg & Gall development research model was taken into consideration. The total number of respondents was 70 people, divided into two groups, namely 35 people in the experimental group and 35 people in the control group. The minimum score for the experimental group and the control group on the pretest was 21, while the maximum score for the experimental group was 38 and the control group on the pretest was 39. Then it can also be seen that the minimum score for the experimental group on the posttest was 27 and the control group was 25, whereas The maximum score for the experimental group was 45 and for the control group it was 41. Furthermore, if you look at the average scores of the two groups in both the pretest and posttest sessions, there are differences, namely in the experimental group the average score in the pretest session was equal to 28.74 with a standard deviation of 4.51, while in the control group it was 29.06 with a standard deviation of 4.76. And the score in the posttest session, the score in the experimental group increased to 35.11 with a standard deviation of 4.46, while in the control group it was 32.37 with a standard deviation of 4.45.

INTRODUCTION

In a 2010 global study showed an increase in public sporting interest in China in the world of rock climbing, this can be seen from the number of rock climbing clubs increasing by 21.3% globally in China (Holly et al., 2019). However, the number of athletes registered with Chinese parent organisations cannot be confirmed due to frequent changes in the operational definitions used in research. However, from various government surveys of the Chinese population, it is estimated that no less than 5-8% of the population participates in sport climbing (Mont, 2007; Mont & Loeb, 2008).

The word rock climbing introduces us to a new kind of sport. When we think back to our childhood, we used to have fun playing, climbing walls, trees, or boulders, where we didn't think about the risk of falling and getting hurt, just the excitement. Actually, Rock Climbing activities are not far from that, only this time we have chosen a certain terrain by thinking about the risks (Kałużna-Czaplińska, Zurawicz and JóźwikPruska, 2017).

Rock climbing is basically part of Mountaineering, an adventurous journey to high places, except that here we face specialised terrain. By distinguishing the area or terrain travelled, Mountaineering can be divided into: Hill Walking, Rock Climbing, and Ice/Snow Climbing. Hill Walking is an ordinary journey through a series of forests and hills armed with map/compass and survival knowledge. Leg strength is the main factor for a successful journey. For rock climbing, the terrain is hills or cliffs where hand assistance is needed to maintain body balance or to gain height. Ice/Snow Climbing is almost the same as Rock Climbing, but the terrain is hills or ice/snow cliffs (Dominica et al, 2012).

Through rock climbing courses at the University, sports students are expected to be able to provide good and correct rock climbing learning among the community. Gross motor skills are the skills of moving the large muscles of the arms and legs (Taylor, J.A., & Ivry, R.B, 2012). Gross motor movement refers to large muscle movements such as locomotor skills (walking, swimming or skipping) and nonlocomotor including sitting, pushing, and pulling or squatting movements (Ste-Marie, D.M et al, 2012). Good gross motor skills will also have a positive impact on health levels because through movement it can improve blood circulation, respiration and the formation of ideal posture. In the practice of physical education in the college environment, motor development tends to be more dominant. Through learning movement or exercise can gradually improve a person's motor skills (Sigelman & Rider, 2017). Physical activities carried out by students in rock climbing learning are expected to improve motor skills and good motor movements for students at school (Gianpiero Greco & Roberto de Ronzi, 2020) and rock climbing sports can reduce a person's emotional level (Gianpiero Greco et al, 2016).

Several research surveys that have been conducted to 3 universities that have rock climbing courses report that rock climbing learning media are in great demand (Lisa Mische Lawson et al 2014, Erin et al 2018). Rock climbing is one of the proud sports of the Chinese people (Choesnan Effendi, 2009). Rock climbing is categorised as the best sport, this is because during a person's activity and concentration there will be an increase in cardiac output of 225% which results in increased oxygen delivery to the bloodstream and muscles (Becker, 2009). This process causes a significant increase in oxygen supply and the musculoskeletal system (Becker et al., 2014). When someone is rock climbing, it can increase a person's focus (Becker, 2009). As well as being able to trigger adrenaline and endorphins that will make a person think positively and feel happy (Becker et al., 2014) in other words, this rock climbing sport is very good to do. Rock climbing that will be taught to students is the basic learning of rock climbing (Sigelman & Rider, 2017).

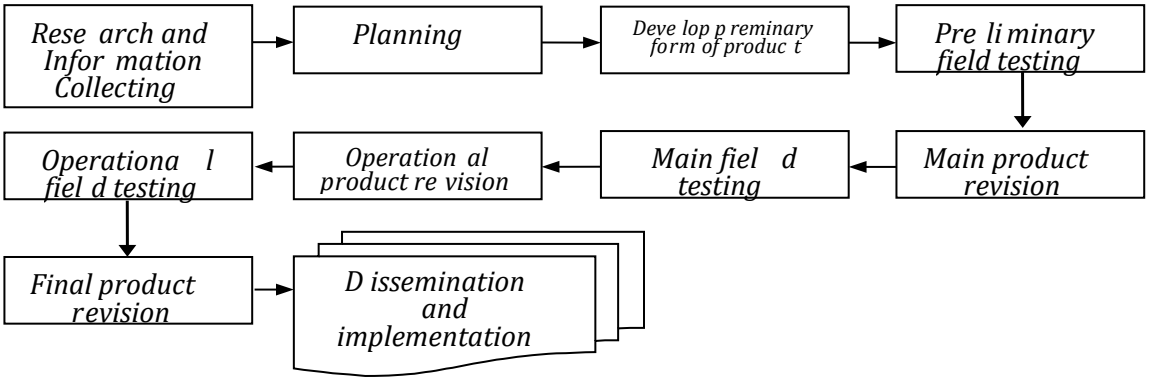
2. METHODOLOGY

2.1. Sample and data collection

The types of data used in this research are qualitative data and quantitative data. Qualitative data is used to complete the first objective through observation sheets, while quantitative data is used to reveal the second objective through an experimental research design.

2.2. Instrument development

The model creation steps that researchers use refer to the Borg & Gall model. Here are the steps in Borg & Gall:



Picture 1
Model Borg & Gall and Gal, Meredith D 4th Edition (New York; Logman Inc, 2003)

2.3. Characteristic Learning Model

In this research, the characteristics of the model created are rock climbing learning models for students. This means making various forms of rock climbing learning activities. This learning model will be compiled and made as well as possible so that later it will produce a product that can be a guide and guide for lecturers, students and rock climbing clubs.

The characteristics of the learning model created can increase the motivation of lecturers, students and stakeholders in undergoing the learning process.

1. Effectiveness, meaning that the rock climbing learning model can facilitate students and lecturers in providing rock climbing learning.

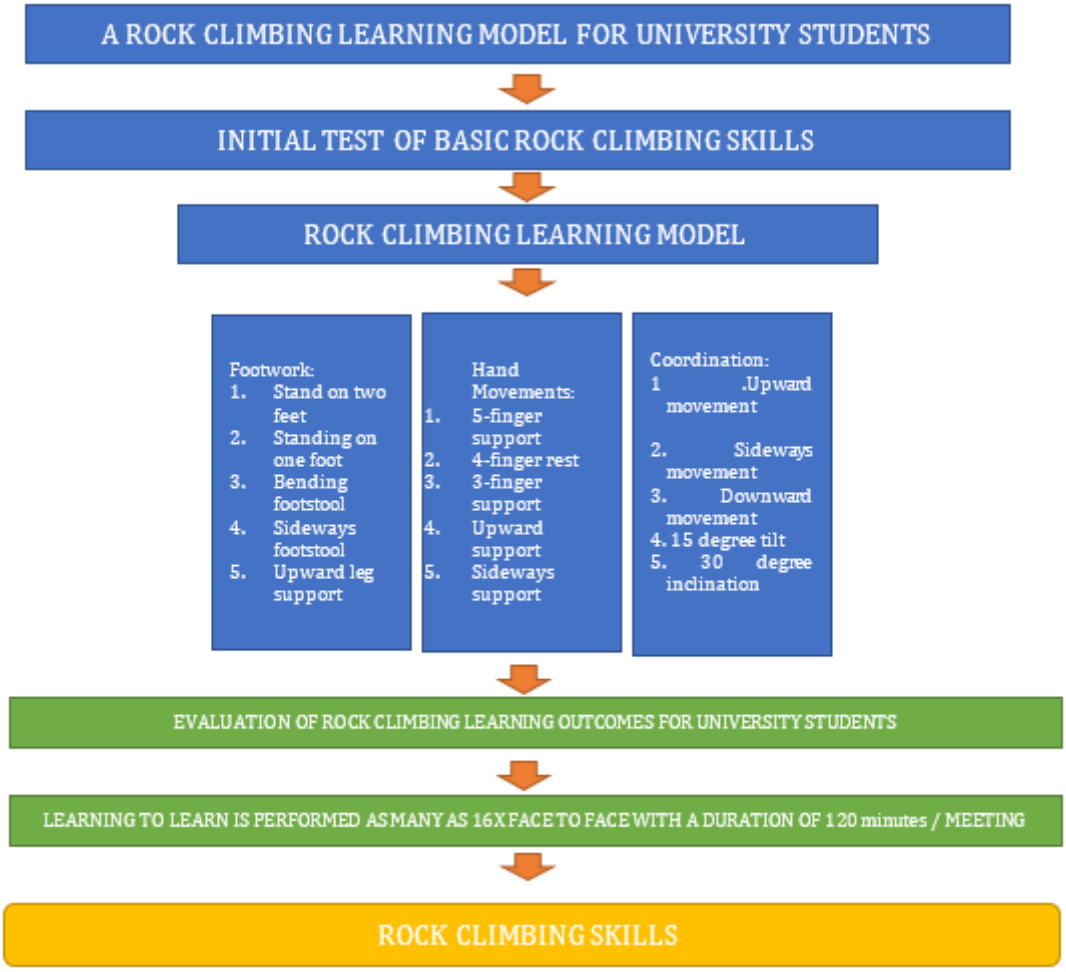
2. Efficient, meaning that the learning process is very efficient because in addition to improving students' rock climbing skills, it also enriches insights in the formation of movements and techniques.

3. Variative, meaning that this rock climbing learning model has variations of learning that can make learning not boring.

4. Attractiveness, meaning that the rock climbing learning model can motivate lecturers and students in carrying out the learning process.

5. Target clients or target users in the research of making rock climbing learning models for students are students of physical education study programmes in China.

2.4. Rock Climbing Model Learning Design



Picture 2.
Rock Climbing Model Design

3. Data analysis and result

3.1. Data Analysis

Based on the data in table 1, it can be described that the total number of respondents was 70 people, divided into two groups, namely 35 people in the experimental group and 35 people in the control group. The minimum score for the experimental group and the control group on the pretest was 21,

while the maximum score for the experimental group was 38 and the control group on the pretest was 39. Then it can also be seen that the minimum score for the experimental group on the posttest was 27 and the control group was 25, whereas The maximum score for the experimental group was 45 and for the control group it was 41. Furthermore, if you look at the average scores of the two groups in both the pretest and posttest sessions, there are differences, namely in the experimental group the average score in the pretest session was equal to 28.74 with a standard deviation of 4.51, while in the control group it was 29.06 with a standard deviation of 4.76. And the score in the posttest session, the score in the experimental group increased to 35.11 with a standard deviation of 4.46, while in the control group it was 32.37 with a standard deviation of 4.45.

	N	Mean	Minimum	Maximum	Range	Std. Deviation
pretes exsperiment	35	28.74	21	38	17	4.514
posttes exsperiment	35	35.11	27	45	18	4.464
pretes control	35	29.06	21	39	18	4.569
posttes control	35	32.37	25	41	16	4.446
Valid N (listwise)	35					

Table 1.

Before carrying out effectiveness testing or significance testing, first carry out a normality test. This test is carried out to determine whether the resulting data is normal or not. If the resulting data is normally distributed, then data testing can proceed to the next stage, if the data is not normally distributed, then testing must be carried out using non-parametric tests. Based on the results of data processing and analysis that have been carried out using the SPSS version 26 program as follows:

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Test rockclimbing	pretes ex	.106	35	.200*	.955	35	.162
	posttes ex	.107	35	.200*	.963	35	.275
	pretes control	.136	35	.102	.956	35	.170
	posttes control	.129	35	.154	.952	35	.131

Table 2

Based on the results of normality testing using the one-sample Kolmogorov-Smirnov test in table 2, it can be seen that the value of Asymp. Sig. (2-tailed) in the pretest and posttest sessions was greater than the value > = 0.05. This means that the experimental group's rock climbing test data in the pretest and posttest sessions were normally distributed.

3.2. Result

Based on the research results and conclusions that have been presented, it is explained that the rock climbing learning model product for students has been successful and proven effective in improving rock climbing learning for students, so overall it can be stated that this learning model product is feasible and effective for application in learning. rock climbing in college.

Furthermore, the implications of this learning model research for improving the quality of education in general and improving the quality of learning in particular are as follows:

1. The results of this research have contributed to knowledge in the form of learning models, learning resources and learning media in learning rock climbing.

2. In practice, this research has made it easier for teaching staff and students to optimize their learning process.

3. The results of this research produce output in the form of printed books, electronic books, and also learning applications. This certainly provides convenience for both teachers and students because the process of providing material can not only be done offline, but also online, so teachers can learn anywhere and at any time.

4. The results of this research have contributed to scientific thinking and the truth can be accounted for. This is useful for scientists and other researchers to continue to develop rock climbing learning for students that is more innovative, interesting and beneficial for all parties.

4. DISCUSSION

Based on the conclusions and suggestions from the results of this research, the researcher provides several recommendations as follows:

1. Lecturers or teaching staff who will apply this rock climbing learning model offline must first prepare the various equipment needed.
2. Lecturers and teaching staff who will later teach at various levels of education, can use and choose the movement activities in this model, and of course they must be adapted to the characteristics of their students.
3. Other researchers who will conduct similar research are expected to expand it to a wider number of subjects.
4. Collaboration between academics and practitioners in the field such as physical education teachers to produce products that are more innovative and suit the needs of the current millennial era.

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