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INTRODUCING ADVENTURE EDUCATION ACTIVITIES IN PHYSICAL EDUCATION LESSONS

GANEA VIRGIL^{1,*}, GROSU EMILIA FLORINA¹

ABSTRACT. Adventure education activities are used in many countries as a mean for interpersonal and intrapersonal development. The activities have a great appeal to children and teenagers, and, because of their identified benefits, have been introduced, in several forms, in schools around the world. Navigation and rope courses are often used as part of the programs of adventure education. One of the methods of introducing adventure education in schools is through the physical education lessons. Because we consider that students from Romania could also benefit from these activities we have built a pilot adventure education program, selecting and adapting activities so that they fit the Romanian physical education requirements.

Keywords: *adventure education, physical education, initiatives, low rope courses, orienteering*

REZUMAT. *Introducerea activităților specifice educației prin aventură în lecția de educație fizică.* Activitățile specifice educației prin aventură sunt folosite în multe țări ca mijloc de dezvoltare interpersonală și intrapersonală. Activitățile îi atrag pe copii și tineri, și, datorită beneficiilor identificate, au fost introduse sub diferite forme în școli din întreaga lume. Orientarea și traseele de frânghii sunt adesea folosite ca parte a programelor de educație prin aventură. Una din căile prin care educația prin aventură este introdusă în școli este lecția de educație fizică. Pentru că considerăm că elevii din România ar putea și ei să beneficieze de pe urma acestor activități, am construit un program de educație prin aventură pilot, selectând și adaptând activități astfel încât acestea să se potrivească cu cerințele pe care sistemul românesc le are din parte educației fizice.

Cuvinte cheie: *educație prin aventură, educație fizică, inițiative, trasee suspendate de frânghii, orientare sportivă*

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Introduction

Adventure Education is a form of experiential learning (Walsh & Aubry, 2007; Ewert & Sibthorp, 2014, Raiola & O'Keefe, 1999) aimed at interpersonal and intrapersonal development. Adventure Education uses risk and adventurous activities and is thought to have been influenced by sociology, psychology, progressive education, organized camping and wilderness expeditions (Daniel, 2009). Hammerman considers that the principles of adventure education are inspired from Comenius, that insisted on the use of senses in learning, Rousseau, who was talking about learning based on natural principles, and Pestalozzi, who considered the use of practical skills to be very important in the learning process (Hammerman, 1980, as cited in Raiola & O'Keefe, 1999). Research shows that this form of education has proven successful at developing skills like communication, teamwork, leadership as well as aspects of the self-concept (Hattie, Marsh, Neil & Richards, 1997, Casson & Gillis, 1994, Kellert, 1998).

Adventure education in school

Introducing Adventure Education in school is not a new concept. In USA the introduction of adventure education in schools at a large scale started in 1971 with the program Project Adventure, that was adopted by more than 400 schools in the first 10 years (Prouty, 1999), in UK was introduced after 1974, initially just as a method to help students with poor academics or social skills (Loynes, 1999), and in Australia reached almost all the schools by the 1980's, becoming a compulsory component of the curriculum in quite many of them (Pickett & Polley, 2001). Even though when the first programs were introduced they contained interdisciplinary lessons as well (Raiola & O'Keefe, 1999), most of the adventure programs developed in schools are implemented incorporated into the physical education lessons (Evans, 2000, Proudman, 1999).

The main source of inspiration for Adventure Education programs is Project Adventure, a program launched in US that uses initiatives, rock climbing, and rope courses (Raiola & O'Keefe, 1999, Prouty, 1999). In 2002 there were over 2500 schools in the world that were implementing a version of this program (Panicucci, 2002). The program is aligned with the US national standards for physical education and the main objectives are: learning new motor skills, develop a social acceptable behavior, develop personal responsibility, respect for diversity and development of abilities and skills related to social integration, problem solving, decisions making and objectives setting (Panicucci, 2002).

There is a large variation of programs across the world, with some schools opting for extended wilderness camps of up to 20 weeks (Gray &

Patterson, 1994), others for regular weekly activities, usually incorporated in regular PE lessons (Baena-Extremera, Banos & Garcia, 2013, Tischler, 2012). There is no consensus on what variation is better, but specialists agree that the longer programs are more effective (Neill, 2002, Cason & Gillis, 1994).

Programs will also be constructed in different ways, with some schools building their program around the lead teacher, like Apex school that has a program of 57 days of activities grouped in 9 units of various length (Tischler, 2012), others making the most of their location, like Aiglon College, in Switzerland, that has a program based on mountain expeditions (Aiglon, 2014), and some others adapting the activities to the space and resources available in school (Baena-Extremera et al., 2013, Dejager, 2006, Hammes, 2007).

Adventure education activities that are suitable for physical education lessons

There is no agreement on what might be the most effective type of activity for adventure education, but some important characteristics have been identified, like the fact that they must present a challenge and have a clear end (Walsh & Golins, 1976), or that the participants should face new situations (Lukner & Nadler, 1997, as cited in Sibthorp, 2000). Horwood (1999) was saying that an activity could be considered as part of adventure education if it has some risk, physical or psychological, the result is uncertain, the consequences cannot be avoided, and it requires active participation. Some specialists consider that the physical strain is the most important aspect (Gass, 1995, Ewert & Sibthorp, 2014), but the participants need to be also under mental and emotional stress (Walsh & Golins, 1976), however load should be progressive (Walsh & Golins, 1976, Ewert & Sibthorp, 2014). A study done by Bisson (1998) has shown that the success of the program is related to the order of the activities, but the specialists agree that the same order might not be suitable to every group (Bisson, 1999).

Examples of activities used for adventure education are rock climbing, abseiling, high rope courses, hiking, mountain biking, horse riding, canoeing, navigation, camping, orienteering, caving, ski touring but also games, initiatives or cooperative activities (Ewert & Sibthorp, 2014, Moote & Wodarski, 1997, V. Walsh & Golins, 1976). While some schools are able to take the students on regular high adventure activities, a large number of programs are focusing on taking the students camping and hiking for their adventure education programs (Marino, 2013, Patterson, 2011), and Furman (2011) even mentions that hiking might actually be the most often used activity. High adventure

activities, even though spectacular, require access to specialists, equipment and transport to appropriate locations, three aspects that usually comes with costs. In the same time, high adventure activities will also have higher risks, something that most schools like to avoid. A study done by Evans (2000) in California said that 50% of the school programs of adventure education were based on hiking, initiatives, rope courses and rock climbing. The term Rope Courses is used to describe a whole category of activities that includes icebreakers, activities to loosen up, games, trust activities, group tasks called initiatives as well as elements made of rope and wood and set at different heights above the ground (Rohnke, 1989). Rope courses seem to be the preferred type of activity for adventure education programs done in the urban setting (Priest & Gass, 1997, apud Furman, 2011).

Adventure education activities and physical education requirements

Based on the Romanian curriculum, the main objective of physical education is to develop bio-psiho-motor skills and competences that will help the students develop well, maintain good health, be able to handle the requirements of their job and integrate in society (Ministerul Educației Naționale, 2009, 2017). Studies show that adventure education programs bring a wide range of benefits to the participants both interpersonal and intrapersonal in nature (Hattie, et al., 1997, Casson & Gillis, 1994, Kellert, 1998). This skills and competences will later help the participants in their everyday life including work or social situations. In the same time adventure education is based on a large number of activities, mostly done outdoors, that can become long time habits with an intense impact on the health and wellbeing of the participant.

Regarding the general competences aimed for, the curriculum of physical education mentions: specific language development; the ability to use methods, means and knowledge in order to maintain good health, improve fitness level and learn specific skills; proper group behavior as well as respect and understanding for sport rules and regulations; the ability to express emotions and ideas through movement (Ministerul Educației Naționale, 2009, 2017). Adventure education activities seem to fit well with the objectives stated by the Ministry of Education. Adventure activities usually require participants to be part of a team, and the specific games and the initiatives are activities designed to encourage and develop teamwork, communication and other social skills (Priest, 1998, Goldenberg, Klenosky, O'Leary & Templin, 2000). Regarding other benefits, there are several studies that show that programs based on adventure education were successful in diminishing

antisocial behavior (Walsh & Aubry, 2007, West & Crompton, 2001, Lubans et al., 2012), positively influence moral behavior (Conrad & Hedin, 1985, Smith, Strand & Bunting, 2002) and develop responsible attitudes and behaviors (Gray & Patterson, 1994, White, 2012, American Institutes for Research, 2005). When it comes to the impact on motor development, even though some initiatives can be static, most of the activities used by adventure education can be quite demanding from a fitness point of view. There is little research that analyses the impact of adventure education programs on the fitness or motor development of the participants (Gehris, Myers & Whitaker, 2012, Gillis & Speelman, 2008, Ewert & Sibthorp, 2014), but participants do feel that the programs help them in this direction (Goldenberg, McAvoy & Klenosky, 2005). These kinds of programs develop social skills and have a strong positive impact on self-concept, but taking part in the activities also requires the learning and development of several motor skills as well, especially basic skills or skills categorized by the Romanian curriculum as “applicative utility skills”.

Building our adventure education program

The adventure education curriculum planned was indented as a tool that will develop the interpersonal skills of the students while it will also contribute to the development of some fitness components. Fitness development was an important objective of the program, as the intention was to implement it during physical education lessons, so for our program we considered the potential impact on fitness and motor development of the selected activities. For this reason, when we selected the activities we considered their contribution to the development of interpersonal skills but also their impact on balance, arm strength or cardiovascular endurance. In some cases adaptation had to be made to the activities in order for them to engage the students more in ways that will benefit our purpose.

For a better understanding of the impact of the adventure activities, the main author has taken part in several activities and has engaged in discussion with foreign and domestic teachers and trainers engaged in delivering such programs. The practical experience was very important in determining the level of fitness required by different types of activities.

The final program of activities was comprised of specific games, initiatives, high rope elements adapted as initiatives, and orienteering activities and can be seen in **Table 1**.

The games were used at the beginning of the lessons to activate the students and get their body prepared for effort. Most of the games required the students to work as one team, or split into groups, and as such contributed

to the development of social skills. Examples of games are “Balloon Frantic” (Rohnke, 1984), where the students must keep several balloons in the air in the same time, or “Ready Aim...” (Rohnke & Butler, 1995), where the students work in pairs and try to hit other pairs while blindfolded.

The main part of our program was made out of **initiatives**, which are problems or challenges for which the participants need to find a solution. Our activities required pair work or group work at first, and then later engaged the whole class in the same time. The size of the gym and the resources available guided our choice of activities and in several cases we had to adapt them to our needs by splitting the students in smaller groups, increasing or decreasing the difficulty of the task or even changing the main objective. To give a few examples, for the „Spyder Web” (Rohnke, 1984) we used hoops attached to a suspended rope, when playing „Key Punch” (Rohnke & Butler, 1995) we used letters and had the students write their name by stepping on them, and the „Tower of Hanoi” problem was inspired from IT lessons. The main tasks of the activities were to take the group across different surfaces using set scenarios, rules and materials, to squeeze the whole group on a small surfaces, to get them to synchronize while performing some actions or to split tasks and responsibilities for a more effective solution. Most of the initiatives have multiple solutions that are not necessarily obvious, pushing the students to use critical thinking and they also create multiple opportunities for leadership.

The **high rope elements** are fixed suspended obstacles that need to be crossed over by the participants. The high rope elements were inspired from adventure parks, but were adapted to the space available and the objectives of our program, but considering that our program was focused on interpersonal skills, one of the key changes we have done to the elements was to make the students build them and then work together to keep them in position while their colleagues take turns crossing over. This change transformed the elements into initiatives and also allowed all the students to work on their arm strength longer during the lesson. As in the case of initiatives there are multiple solutions to each problem and the students had to sometimes find several of them in order to get everybody across or to spend more than an hour on one scenario in order to find an effective solution.

To guide the students to build different elements, for every activity they had only certain materials available. Resources used to build the elements were: vaults, usually used as starting and ending points for the crossing; ropes, that either had to be used to cross over or to support the “bridges” into position; gymnastic mats piled together, again as starting or finishing point; gymnastic benches, rope or wooden ladders and small mats, all to be used as a mean to get to the other side. In some cases the ropes were attached to metal rings in the ceiling or the gymnastics wall bars, as a set part of the element, or other

resources were placed into preset positions. Large landing mats were used to protect the students from injury and mark the area that needs to be crossed over. Some of the elements built were the Cat Walk, Indian Bridge, Fidget Ladder, Two Line Bridge, Kitten Crawl, Commando Crawl or Tension traverse.

Orienteering is already recognized as a sport and is accepted as an optional activity in the Romanian curriculum for physical education. Orienteering is best done outside, using the school courtyard, the parks, or a wooded area around the school. In fact the whole neighborhood can be used for orienteering activities and Proudman (1999) recommends using map and compass navigation skills for city exploration, but we need to be aware of the safety issues related to this kind of activities. Orienteering activities could also be done inside the school, but running up and down the stairs could become a problem.

For our program, which can be seen in **Table 1**, we used activities and games related to map navigation and spatial orientation inspired from books as well as previous experiences of the authors. To align them with our program objectives we had the students work in groups or pairs. In this activities the students had to draw the map of an area, mark checkpoints and landmarks on a map, identify specific locations or navigate courses of 2 to 7 posts. The activities started in the courtyard and then moved in a park found close by. Before allowing the students to navigate the park, a lesson was used to show them the boundary of the used space and identify potential dangers that should be avoided. At the end of the program, a city navigation activity was also organized, were the students traveled in small groups trying reach several city landmarks.

Table 1. Organization of our adventure education program

Week (month)	Activities / Experiences
1 (Sep)	Orienteering countries game.
2 (Sep)	The students need to explore the courtyard and draw a map of it on a paper that already has the outline on it. The drawn maps are discussed in order to identify what things should appear on a map and what things should not
3 (Sep)	The students need to place cones on specific locations of the basketball court as fast as possible. The locations are taken from a map. Using a school map, all the students move in group to identify locations marked on the map. Discussion on how to identify them.
4 (Sep)	Run with the teacher around the park to establish the boundry of the space used for orienteering activities, to identify possible hazards and risks, and establish safety measures. Explain the orienteering map. Based on the map, the students are guided to identify specific objects on the map and then in real life.
5 (Oct)	1 post courses. As they return the teams receive other maps with posts on them.
6 (Oct)	Group navigation using park maps. This time they get 2 posts on every map. As they return they receive other maps. Discussion on posts difficult to find.

Week (month)	Activities / Experiences
7 (Oct)	Group navigation on a course with 6 posts. The groups leave at different intervals.
8 (Nov)	Mine field; Ready aim; Touch my can;
9 (Nov)	Monarch tag; Birthday Shuffle; The turnstile;
10 (Nov)	Balloon frantic; Balloon Trolleys, Trolley; Jelly Roll;
11 (Nov)	Barf ball; Group Juggling; Squash Balls
12 (Dec)	Two in a row; Key Punch
13 (Dec)	Bumper cars; Wild Woosey; Knots
14 (Dec)	Circle the circle; Playpen, both in original and adapted version; Blind forms;
15 (Jan)	X and O; Hanoi Towers;
16 (Jan)	Yourt Circle; Human ladder; Write your name
17 (Jan)	Everybody Up; Mohawk Walk
18 (Jan)	All Aboard; Prouty's Landing;
19 (Feb)	Stepping Stones; Magic carpet, in adapted version;
20 (Feb)	Add on tag/ blob tag; Welded ankles, done with arms locked at first and then in original version;
21 (Feb)	Walking on boards; Zig-zag; Islands
22 (Mar)	Help me tag; Nuclear fence
23 (Mar)	Transformer tag; Spider web;
24 (Mar)	Rope jousting; Adapted high elements;
25 (Mar)	Adapted high elements;
26 (Apr)	Adapted high elements;
27 (Apr)	Object retrieval; Tug of war
28 (May)	Moonball; Italian golf
29 (May)	Chicken baseball; Pigs in a blanket
30 (May)	Compass walk; Large group navigation on a course with 7-8 posts with a map, with the students discussing their decisions as we move around.
31 (May)	Working in small groups (3-4), the students need to mark on the map a post they place in the park and then get back to start. Every team gets to check the placement of posts of other teams. At the end the whole group travels to reach all the posts and discussions are generated.
32 (May)	Navigation in pairs on a course with 6-8 posts using a map that has the order of the posts marked on it. The pairs leave at different time intervals.
33 (Jun)	Navigation in pairs, using a map, on a course with 6-8 posts that can be approach in any order.
34 (Jun)	Every pair places a post in the park and marks it on a map. Every pair will need to mark on their map the location of the posts placed by other paris and then navigate to find them all.
35 (Jun)	Navigate in pairs a course of 6-8 posts out of 8-10 posts available around the park. Fake posts are placed between the corect ones.
36 (Jun)	Solo navigation using a map. Fake posts are placed around the park and the students leave at different intervals.
37 (Jun)	City Navigation

Note: The games and initiatives have been inspired from Rohnke (1984, 1989), Rohnke & Butler (1995), Panicucci (2002), Hammes (2007), Eliot & Pieper (nd). The orienteering activities have been inspired from Larkin & Grogger (1975), Csaba (2006).

Conclusions

Looking at the amount of research that shows the positive impact that this kind of activities have on the personal and social development of the students, we believe that implementing adventure education activities in the physical education lessons will raise the importance of this subject. We consider that we found several valid means of introducing adventure education in those lessons and the activities presented in this paper support the objectives set by the Ministry of Education. The activities can be done with little additional resources and could easily be adapted to any school. Furthermore, a study done on the effects of the program on middle school students has noted a significant development in dynamic balance and cardiovascular endurance, compared to the control group, and arm strength development similar to regular PE activities (Ganea & Grosu, nd).

If that is not enough, we can also confirm what Walsh & Aubry (2007) have said: these types of activities are fun and engaging, and the students enjoy taking part in them.

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