

## REVIEW PAPER

**VISUALIZATION EXERCISES IN ALPINE SKIERS  
TRAINING PROCESS****Katrina Volgemute, Daina Krauksta, Žermēna Vazne**

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*Scientists believe that mental training provides positive effect on athletes' success. If the visualization is used in the training process, the athletes level of imagination raises, which improve the ability to monitor their performance in competitions. The study focuses on the role of the imagination in an alpine skier's preparation process, which is one of the aspects of the athletes' psychological preparation that leads to increased results. Developed imagination is able to influence the skiers in several ways: psychologically, emotionally, physically, technically and tactically. The research experimental part is developed and tested in practice whit visualization exercises and tasks. The importance of the experiment is demonstrated and provided as an important part of developing the imagination of skier during preparation process.*

**Key words:** *alpine skiing, psychological training, visualization exercises***Introduction**

The topic of imagery has fascinated many people in sport and physical activity settings for years. It is considered to be one of the most popular performance enhancement techniques or psychological skills because of its versatility in effecting several different outcomes. Whit imagination athletes can improve the ability to concentrate, rise self-esteem, help in case of pain, injury and fatigue. In thoughts, athlete can revive earlier experience, events and feelings that can help them get ready for competitions.

Imagination in sport is the ability to create an image or series of images related to your sport. Visualization or imagination includes all the

sensory use to create or restore some kind of experiences, events and feelings to you mentally for better preparation for competitions. Similarly, imagination is useful to improve the technical performance elements or for error correction (Hanina & Hanin, 2010). Also, many athletes in their minds play pre-competition, competition or after competition plan (Orlick, 1986).

Aim of the study: Based on literary source research and personal experience – develop imagination exercises for alpine skiing athletes.

## **Materials and Methods**

It has been proposed that mental imagery enhances performance by improving key mental factors that heavily influence athletic performance (Callow & Hardy, 2001; Taylor & Wilson, 2005). Mental imagery can improve performance when athletes rehearse general strategies and tactics, specific skills and plays, successful use of positive self-talk, and the overall performance. Furthermore, mental imagery can be used to facilitate effective responses to competitive stress and emotions, and produce feelings of a successful performance and achieving a desired goal (Mortiz, 1996).

One explanation as to why results vary may be the individual differences which can influence the learning and the performance of motor and cognitive skills (Vealey & Greenleaf, 2006). Researchers cannot control for imagery ability, controllability, and past experiences. Imagery ability has two influential factors: (1) how clearly athletes can see an image and how detailed the image appears to them and (2) the athlete's ability to manipulate aspects of the images they wish to change (Vealey & Greenleaf, 2006).

Imagery requires organized, repetitive practice for it to have the desired effect on performance. Research has shown systematic practice effectively increased imagery ability. For effective use of imagination exercises in mental trainings there are necessary conditions:

1. Images must be controllable so that athletes can manipulate images in productive ways to prepare themselves to perform at an optimal level;
2. In addition to controllability, the other essential factor to effectively using imagery in a mental training program is vividness. Vividness can also involve such components as whether the image is in colour, how many senses are involved, and what emotional or physical sensations are experienced when engaging in the imagery (Evans, Jones & Mullen, 2004).

When an athlete is engaged in mental imagery, there are two distinct imaging perspectives in that the athlete can experience the imagined situation, an external or internal perspective. Mahoney and Avenier (1977) defined external imagery perspective as a third person view, where the participant assumes the position of an observer, as if watching a film or

recording of a previous performance. On the contrary, an internal imagery perspective, has been defined as requiring an approximation of the real-life experiences, in which that the participant imagines being inside his/her body, while experiencing the sensations that they may expect to encounter in the actual situation (Mahoney & Avenier, 1977). The first stage in learning novel motor tasks is called the cognitive stage because the learner initially uses verbal and cognitive cues to represent the task, and the dominant sensory system is vision (Fischman & Oxendine, 1993).

Based on the researched literature sources 10 exercises were created to develop imagination for alpine skiers from U16 and Junior age groups:

*1. Putting on sport equipment with closed eyes*

In this exercise, alpine skiing equipment is required – ski boots, helmets and ski goggles. Athletes with closed eyes, without using vision, have to put on their sports equipment in a way they would normally do in training (Fig. 1). This exercise helps athletes to train the ability to imagine. They should be able to mentally imagine their every move, just the same way as they would with see with open eyes.



**Figure 1.** Putting on sport equipment with closed eyes

*2. Make a system points*

Based on the experience acquired during usual competitions and/or training sessions athletes have to find the “key points” which describe that competition and/or training session. “Key points” can be, for example, warm-up, course inspection, inventory preparation, start, skiing, finish, etc. With the help of imagination athletes must explain what takes place traditionally in each specific situation.

*3. Initiate the feeling of the movement*

Based on the previous exercise “key points” athletes have to explain their emotions and/or feelings in each of the movements (Tab. 1).

**Table 1**

Exercise – initiate the feeling of the movement

<i>Key points</i>	<i>Feeling of the movement</i>
1. Warm-up	Energy, focus
2. Course inspection	Concentrated attention
3. Inventory preparation	Preparedness for start
4. Start	Maximum tension
5. Skiing	Speed, unloading
6. Finish	Safety

*4. Time measurement: Compare between real-mental*

After course inspection athletes perform three runs with a timed control. Afterwards, with the help of visualization, athletes take three “mental runs” thought the skiing course, where each “mental run” is also time controlled (Fig. 2).



**Figure 2.** Mental run performance

The times of the mental training should be matched with the execution times of the real attempt (Tab. 2). The more the real time and mental time match; the better is your mental training of your technique.

**Table 2**

Real and mental runs results

Run time	1.	2.	3.	Average time
Real time				
Mental time				

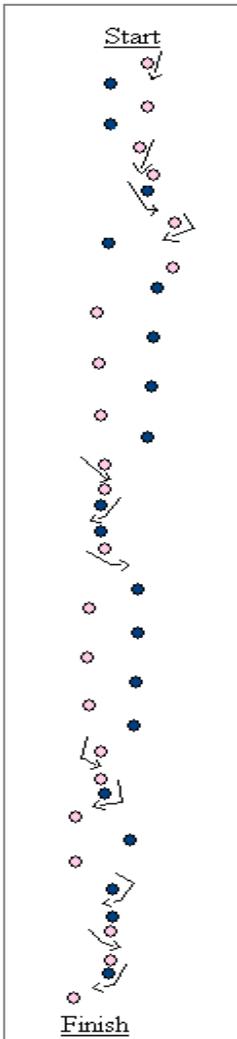
### 5. Split method: Compare “mental runs”

After course inspection and first skiing run, athletes perform five “mental runs” through the course with time control. All attempts can be also done during training session. In this exercise, it is important that “mental run” times match or at least are very similar to each other. The results are recorded in table and compared (Tab. 3).

**Table 3**

Mental run results

Mental run time	1.	2.	3.	4.	5.



### 6. Skiing training/race course drawing

In this exercise athletes draw a skiing course gates on a paper right after training or course inspection. While drawing, athletes have to pay attention to course gate numbers, colours, gate combinations and even the external poles (Fig. 4). This exercise helps to develop imagination. For an athlete to be able to draw the most accurate course scheme it is important to involve visualization.

### 7. Seeing through your “mental eyes”

This exercise has a several steps that athletes have to perform following instructions from the coach: *step one*: athletes stands opposite to their usual training place – skiing slope. Athletes carefully examines training place and then close their eyes. *Step two*: Athletes inhale and exhale calmly and deeply. Afterwards athletes try to intensively visualize previously viewed training place. *Step three*: after instructions from the coach athletes have to open their eyes for 1 second and look at the training place. Then close their eyes immediately. For a short time, they are allowed to concentrate on what they have just seen. *Step four*: athletes while having their eyes closed must describe what they have seen: where are other athletes? What colours did they see? How many obstacles are on the hill? etc. *Step five*: athletes for a brief time (1 sec) open their eyes and close them again.

**Figure 4.** Skiing course drawing

Afterwards they turn their back on the slope and again describe what they saw to the coach. The coach should ask as much questions as possible about the location and its details.

8. *Make scrip*

The main task of this exercise is to describe all the activities, movements and their performance technique. Athletes have to write down on a paper the exact description of what they do in alpine skiing. Everything has to be written from “I” perspective (for example, “I am standing on the starting line and concentrating on the situation. After that I am...”). This process can take about 30 minutes; athletes have to intensively think about their own activities and sport technique. Also, the writing should be formulated in the present tense and it must be positive (without the word “no”) and as far as possible with more details.

9. *Competitive Situation Imagery*

This exercise must be carried out in written form on prepared worksheets (Fig. 5).

*Competitive Situation Imagery*

**1. Approach a place, through imagery, where you have recently competed** or have vivid memories of a competition. Allow yourself to experience the sensations that may accompany a competitive experience for you--that is, if you typically get nervous or psyched up before competitions, allow yourself to feel those emotions.  
List some typical emotions or feelings that you experience before competing:

a.

b.

**2. Imagine yourself at varying times before competition, making it as real and vivid as possible.** If you typically have a pre-competition routine, imagine yourself following the steps of that routine up to the point where you are competing. Remember to use all your senses.  
Write down in the space below what you typically do before competition:

**3. Competition time:** imagine yourself in an actual competition situation, doing what you would typically do, with your typical emotional and physical reactions.

At the beginning and throughout competition, **I feel:**

At the beginning and throughout competition, **I think:**

At the beginning and throughout competition, **I see:**

Figure 5. Competitive situation imagery worksheet

### 10. Imagination checklist

Exercise is carried out in writing. This is an exercise designed to help the athletes to begin integrating their senses into imagination. Athlete is given 10 situations (Tab. 4).

**Table 4**

Imagery Sensory Checklist

Situation	Rating
The suit you will wear in practice this afternoon	
Tasting a juicy lemon	
The sound of your alarm clock	
The slope you last trained on	
The feel at the end of the course in the finish	
Cold and early morning on a slope	
The roaring approval of a crowd	
Feeling dry mouthed and tired after a workout	
The discomfort in your muscles during the last gates of a race	
The anticipation and anxiety waiting on a start line	

With a help of imagination, they have to establish situations in their mind. As athletes create each of the following images in their mind, they have to rate their ability to do so based on this scale: *0 = No Image 1 = Some Image 2 = Clear Image*

### Discussion

The developed exercises are approbated by the Latvian U16 and Junior age group alpine skiers in season of 2015-16 and they will continue to use exercises in training, competition and after-competition process during 2016-17 season. In practice, the imagination exercises have produced positive results for alpine skiers. The imagination exercises in training process help athletes to recognize and highlight their strengths and reduce weaknesses. It does not only help to regulate anxiety which athletes are experiencing during the race, but also helps to gain self-confidence, focus and become mentally strong. Athletes can use imagination in setting closer and further goals and to increase motivation of both in daily workouts and further sporting activities.

It is well known that imagination exercises are able to provide a great possible benefit for athletes if the exercises are detailed and including all senses and concentration abilities.

Imagination is as skill, and, just like any other skill, that is used in sport, it will need to be practice and develop. Because imagery is a mental skill, athletes will need to concentrate on creating and controlling images,

which can be tiring at first. For this reason, it is best to begin imagery training by imaging high quality images for short periods of time, and then gradually increasing the time of imagination process. It is important to try to imagine as realistic as possible, by re-creating important details of sport setting (e.g., practice and competition venues) in mind. Including details like the colours or sounds what the athlete sees and hears. Realisation in imagination is the most important visualization exercise and it is important to create the feeling that athlete is really experiencing what they see in their mind.

## Conclusions

Were developed 10 imagination developing exercises. Based on practical experience 3 of the exercises (1, 4, 6) are innovative. Other 7 exercises are from methodologies of imagination abilities development by Jumson Lee (2010) – 2, 3, 5, 7, 9 and Emma J. Stodel (2004) – 8, 9. These 7 exercises were modified for alpine skiing sport.

Imagination is a psychological skill that can be trained and developed by including visualization exercises in training process. Like all skills, visualization must be practiced consistently and correctly so it could give a positive effect.

Imagination is used to help athletes to anticipate and solve problems, to prepare for competition, as well as to stage a race or training activity. Imagination trainings can be done individually or in groups and they can be led by sport psychologist or a coach.

## References

1. Callow, N., & Hardy, L. (2001). Types of imagery associated with sport confidence in netball players of varying skills. *Journal of Applied Sport Psychology*, 13, 1-17.
2. Beilock, S. L., Afremow, J. A., Rabe, A. L., & Carr, T. H. (2001). “Don’t miss!” The debilitating effects of suppressive imagery on golf putting performance. *Journal of Sport and Exercise Psychology* 23: 200-221.
3. Bufney, A. J., Murphy, S. M., Woolfolk, R. L. (1994). *Imagery and motor performance: what do er really know?* In A.A. Sheikh, E.R. Korn (eds.) *Imagery in sport and physical performance*. Amityville, NY: Baywood, pp. 97-120.
4. Evans, L., Jones, L., & Mullen, R. (2004). An imagery intervention during the competitive season with an elite rugby union player. *The Sport Psychologist*, 18, 252-271.

5. Fischman, M., & Oxendine, J. (1993). Motor skill learning for effective coaching and performance. In J.W. Williams (Ed.), *Applied Sport Psychology* pp. 11-23.
6. Hannina, M., & Hannin, J. (2010) *Optimization of technique in elite athletes: an application of the ICC programm*. In K. Thomson, A. Watt (eds.). Connecting paradigms of motor behaviour to sport and physical education. Tallin: TLU, pp. 131-146.
7. Lee, J. (2010). How to Learn and Apply Mental Imagery & Visualization Techniques. Speed Endurance Success in Track and Field... And Life [online]. [cited 12 November 2016]. Available: <http://speedendurance.com/2010/11/21/how-to-learn-and-apply-mental-imagery-visualization-techniques/>.
8. Mahoney, M., & Avenier, M. (1977). Psychology of the elite athlete: an exploratory study. *Cognitive Therapy and Research*, 1, 135-141.
9. Martin, K., Moritz, S., & Hall, C. (1999). Imagery use in sport: A literature review and applied model. *The Sport Psychologist*, 13, 245-268.
10. Moritz, S., Hall, C., Martin, K., & Vadocz, E. (1996). What are confident athletes imagining: An examination of image content? *The Sport Psychologist*, 10, 171-179.
11. Moran, A. (1993). Conceptual and methodological issues in the measurement of mental imagery skills in athletes. *Journal of Sport Behavior*, 16, 156-170.
12. Munzert, J., & Hackfort, D. (1999). Individual preconditions for mental training. *International Journal of Sport Psychology*, 30 (1), 41-62.
13. Murphy, S. M. (1994). Imagery interventions in sport. *Medicine and Science in Sports and Exercise*, 26, 486-494.
14. Murphy, S.M., & Martin, K.A. (2002). *Imagery in sport*. In T. Horn (ed.). *Advances in sport psychology*, 2nd ed. Champaign, IL: Human Kinetics, pp. 405-439.
15. Orlick, T. (1986). *Mental training for athletes*. Champaign, IL: Human Kinetics.
16. Short, S., Bruggeman, J., Engel, S, Marback, T., Wang, L., & Willadsen, A. (2002). The effect of imagery function and imagery direction on self efficacy and performance on a golf putting task. *The sport psychologist*, 16, 48-67.
17. Taylor, J., & Wilson, G. (2005). *Applying sport psychology: Four perspectives*. Champaign, IL: Human Kinetics.
18. Vealey, R., & Greenleaf, C. (2006). *Seeing is believing: Understanding and using imagery in sport*. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (5th ed., pp. 285-305). Mountain View, CA: Mayfield Publishing.

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